TICC

Thailand International College Consortium

Khon Kaen University International College

INTERNATIONAL COLLEGE

FIS Faculty of International Studies

PSU INTERNATIONAL COLLEGE HATYAI CAMPUS PRINCE OF SONGKLA UNIVERSITY

SU IC SILPAKORN UNIVERSITY INTERNATIONAL COLLEGE

International College for Sustainability Studies SRINAKHARINWIROT UNIVERSITY

ICDI International College of DIGITAL INNOVATION CHIANG MAI UNIVERSITY

8th TICC

International Conference

Proceedings

Integrating Perspectives from Different Disciplines for Current and Emerging Society Needs towards Sustainable Development Goals (SDGs)

February 1st – 2nd, 2024
Swissotel Bangkok Ratchada, Thailand

Proceedings

The 8th TICC International Conference 2024
Integrating Perspectives from Different Disciplines for Current and
Emerging Society Needs towards Sustainable Development Goals
(SDGs)

Thailand International College Consortium (TICC)

International College for Sustainability Studies,
Srinakharinwirot University (Host)

Khon Kaen University International College

Burapha University International College

Faculty of International Studies, Prince of Songkla University
(Phuket Campus)

Prince of Songkla University International College (Hat Yai Campus)

Naresuan University International College

Silpakorn University International College

International College of Digital Innovation, Chiang Mai University

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WELCOME MESSAGE FROM THE THAILAND
INTERNATIONAL COLLEGE CONSORTIUM (TICC)

Welcome to the 8th TICC International Conference titled "Integrating Perspectives from Different Disciplines for Current and Emerging Society Needs towards Sustainable Development Goals (SDGs)". The Thailand International College Consortium (TICC) International Conference is co-hosted by 8 international colleges, including Khon Kaen University International College, Burapha University International College, Faculty of International Studies, Prince of Songkla University (Phuket Campus), Prince of Songkla University International College (Hat Yai Campus), Naresuan University International College, Silpakorn University International College, International College for Sustainability Studies, Srinakharinwirot University, and International College of Digital Innovation, Chiang Mai University - which has the opportunity to join the network as the 8th university. Following the success of the previous TICC conferences, International College for Sustainability Studies, Srinakharinwirot University is pleased to announce the call paper for the 8th Thailand International College Consortium International Conference on the topic of "Integrating Perspectives from Different Disciplines for Current and Emerging Society Needs towards Sustainable Development Goals (SDGs)" The objectives of this event are: 1) To motivate students to share their research findings with the public and those who may be able to use them 2) To provide a forum for knowledge sharing between faculty researchers and students participating in the event 3) To boost students' confidence when presenting findings, including the development of a cooperative network for future academic and research of the International College Network of Thailand. The consortium committee has identified 11 areas of academic research across a range of subject areas, including: 1) Business and Management 2) Science, Technology and BCG Economy 3) Logistics and Supply Chain 4) Digital Innovation 5) Holistic Health and Wellness Management 6) Tourism, Hospitality and MICE 7) Cultural Studies and International Studies 8) International Relations 9) Art, Media, Communication and Intercultural Communication 10) Education, Learning Technology and STEM 11) Language, Literature and Language Teaching. This event was held for 2 days, between February 1st and 2nd, 2024 with a total of 52 researches selected to present covering various sciences that are important to the development of knowledge and the socio-economic development of a country. The International College sincerely hopes to play a part in producing knowledgeable and capable professionals as well as producing academic works for the public that everyone can access and that can be a forum for discussion and exchange for further academic advancement.

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TICC MEMBERS & OUR GOALS

The Thailand International College Consortium (TICC) International Conference is co-hosted by 8 International colleges consisting of 1) Khon Kaen University International College, 2) Burapha University International College, 3) Faculty of International Studies, Prince of Songkla University International College (Phuket Campus), 4) Prince of Songkla University International College (Hat Yai Campus), 5) Naresuan University International College, 6) Silpakorn University International College, 7) International College International College for Sustainability Studies, Srinakharinwirot University, and 8) International College of Digital Innovation, Burapha University, Chiang Mai University. These international colleges established the Thailand International College Consortium (TICC) to enhance academic collaborations among the partner universities. TICC has the following goals.

1. To exchange Thai and international students at both undergraduate and graduate levels among partner universities.

2. To exchange lecturers among partner universities.

3. To conduct collaborative research projects.

TICC would like to welcome all international colleges in Thailand to become a member and enjoy several benefits that TICC could offer.

ACKNOWLEDGEMENTS

Conference Program: Overview
The 8thThailand International College Consortium
International Conference 2024
"Integrating Perspectives from Different Disciplines for Current and Emerging Society Needs towards Sustainable Development Goals (SDGs)"
February 1st – 2nd, 2024
Swissotel Bangkok Ratchada, Bangkok, Thailand

February 1st, 2024

Time	Activities Salon A, 2nd Floor
07:00-08:30	Registration

08:30-09:00	Opening Ceremony
	Introductory remarks by *Dr. Thanakorn Thongprayoon*
	      Dean of International Colleage for Sustainability Studies,
	      Srinakharinwirot University

09:00-09:10	Welcome remarks by *Emeritus Professor Dr.Pansiri Phansuwan* Vice President for Academic Affairs of Srinakharinwirot University
09.10-09.30	• Host and Co-hosts introduction • Deans of TICC Network introduction • Group photos
09:30-10:30	Keynote Speech 1: *"The Curriculum is right here!" Community-engaged Teaching and Learning as Glocally Sustaining Practice* *Professor Dr. Judy Sharkey,* University of New Hampshire (RELO Bangkok, US Embassy)
10:30–11:00	**Break** **Foyer, 2nd Floor**
11:00-12:00	Keynote Speech 2: *"BCG-based Soft Power Tourism: Paradigm Shift for Thailand Sustainable Tourism Development?"* *Professor Dr. Therdchai Choibamroong* Graduate School of Tourism Management (GSTM), National Institute of Development Administration (NIDA)
12:00-13:00	Lunch 204 Bistro, G Floor

Time	Room & Floor			
	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
13:00-15:00	Research Area: Business and SDGs Moderator: *Dr. Putthipong*	Research Area: Tourism and Hospitality Moderator: *Dr. Chution*	Research Area: Cultural Studies, Communication, and International Relations Moderators: *Ajarn Uruwan and Dr. Yanapa*	Research Area: Language and Education Moderator: *Dr. Chalida*
15:00-15:20	Break Foyer, 3rd Floor			
15:20-16:45	Presentation (continued)			
17.30-21.30	Reception Party Le Lotus 1, 2nd Floor			

February 2nd, 2024

Time	Activities			
07:00-08:30	Registration			
Room	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
08.30-10.30	Research Area: Business and SDGs Moderator by *Dr. Yanapa*	Research Area: Business and SDGs, Tourism and Hospitality Moderator by *Dr. Pisuda*	Research Area: Digital Innovation Moderator by *Dr. Putthipong*	Research Area: Business and SDGs, communication, International Relations, Digital Innovation and Education Moderator by *Dr. Chuenjit*
10:30-11:00	Break Foyer, 3rd Floor			
11.00-12.00	Presentations (continued)			
12:00-13:00	Lunch, 204 Bistro, G Floor			
13:00-13:30	Best Paper Awards The Handover Ceremony to the 9th TICC International Conference Host Salon A, 2nd Floor			
13:30-14:00	Closing Ceremony Salon A, 2nd Floor			

Conference Program: Schedule for Parallel Sessions
The 8th TICC Thailand International College Consortium International Conference 2024
"Integrating Perspectives from Different Disciplines for Current and Emerging Society Needs towards Sustainable Development Goals (SDGs)"
DAY 1: Thursday, February 1st, 2024

Time / Room	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
	Research Area: Business and SDGs **Moderator by Dr. Putthipong**	**Research Area: Tourism and Hospitality** **Moderator by Dr. Chution**	**Research Area: Cultural Studies, Communication, and International Relations** **Moderator by Ajarn Uruwan and Dr. Yanapa**	**Research Area: Language and Education** **Moderator by Dr. Chalida**
13:00-13:25	The Impact of A.I. Influences on Customer Engagement and Perception of Coolness. **Preedaporn Hongkietkajorn,** & Chonlada Sajjanit	The Empowerment for Local Community and Park Rangers in Human-Elephant Conflict Management: Insights from Kui Buri and Kaeng Krachan National Park **Dr.Chution Savini**	Lifestyle and Active Ageing: A Chinese Property Developer's Narrative **Ke He**	Appraisal Analysis of the Football Rivalry among Fandom: An Analysis of Online Comments on Facebook **Lertphon Subin,** & Dr. Neil Evan Jon Anthony Bowen
13:30-13:55	Enhancing Intention to Use of Waste Management Platforms through UX/UI Designs: A Study on Thai Farmers **Teerapong Pienwisetkaew,** Sasichakorn Wongsaichia, & Wutthiya Srisathan	Deciphering Customer Sentiments: An Exploration of Preferences and Attitudes in Online Reviews - A Study of Longji Rural Hotels **Yunmeizi Tang**	Reviewing Abortion Resistance and Legislation Policies in Thailand and Their Impact and Skewness to UN Initiatives **Sudip Debkumar Chatterji**	Discovering the Use of Conjunctions in EFL Undergraduate Writing through the Lens of Error Analysis **Jittima Kraisriwattana,** Patchanan Sarootyanapat, & Pornphan Sureeyatanapas

Time / Room	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
14:00-14:25	Using Technology Acceptance Model to Explain the TrueMoney Wallet Application Usage: An Empirical Study of Thai Consumers in Bangkok Metropolitan **Verin Anansuksawat**, & Jul Thanasrivanitchai	Visit Intention of Indonesia Tourists to Thailand in Post-Covid 19 Crisis **Andris Adhitra**	De-secularization, Political Polarization and Civil Religion: A Case of Bangladesh **Mikio Oishi, &** Sharika Tasnim	The Effect of Concept-Oriented Reading Instruction on Thai Vocational Students' Reading Comprehension and Motivation to Read **Narueporn Sintonsopon**
14:30-14:55	The Strategy of Intellectual Property Rights Transfer in The Event of Mergers and Acquisitions According to The Nature of The Activity **Dr. Supakanya Khangrang**	Green and Digital Transitions of The European Tourism SMEs **Dr. Erdinç Çakmak**	The Cultural Meanings of "Good Teenager" in Modern Urban Thai Families **Dr. Peeradet Prakongpan**	Promoting Learners as Developing Practitioners in Post-COVID-19 English-Medium Instruction at a Thai International College **Charlton Bruton**
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15:20-15:45	What Reasons Make Eastern-Region People Use Mobile Banking **Passarin Phalitnonkiat,** Siwaporn Kunnapapdeelert, Tuangporn Pinudom, & James Vincent Johnson	Orchard Tourism and The Three Ps of Sustainability: Case Studies in Japan **Phornphan Roopklom, &** Phobphison Phob-udom	Literature Reviews and Tendency of Food Cultural Studies in Television Dramas **Nattavadee Wuttirut,** Dr. Pittaya Limbut, & Dr. Supachai Jeangjai	Psychoanalytic Criticism: Coming-of-Age of Chinese American Teenage Girl in Jenny Zhang's Sour Heart **Chotima Chuamuangphan**

Time / Room	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
15:50-16:15	Contribution of Social Entrepreneurship for Social and Economic Development: A Case Study of Young Female Social Entrepreneurs in Thailand **Deepa Parajuli,** & Buraskorn Torut	Current Situation of the Intangible Cultural Heritage in Lamphun Province, Thailand **Pirapong Wongsaensee,** Chakkrapong Kuensaen, Nantawan Muangyai, & Chawarinth Sudsawath	Investigating Appropriateness of Drawing Exercises For Non-Art Students in Thailand Towards Improvements of Learning Experience **Dimitrije Curcic**	Improving Thai Learners' Conceptual Understanding of Animal Classification and Vocabulary Acquisition in a Science Classroom Through Contextualized Material Using Cognitive Strategies **Czarina Amor Payod,** Dr.Sasithep Pitiporntapin, & Dr.Monera Salic-Hairulla
16:20-16:45	Determinants of Competitive Advantage Case Study of Enterprises in Thailand **Tuangporn Pinudom,** Passarin Phalitnonkiat, & Siwaporn Kunnapapdeelert	Forgotten Voices: Thailand's Informal Tourism Entrepreneurs **Dr. Erdinç Çakmak**	Data Industry Laborship: An Ethnographic Study of Multinational Workers of Commercial Content Moderation Industry in Bangkok **Chang Liu**	An Empirical Study on the Trade Potential and Influencing Factors between Sichuan and ASEAN: Based on an Extended Trade Gravity Model (online) **Yaxian Ran**
17.30-21.30	Reception Party Le Lotus 1, 2nd Floor			

Time / Room	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
	Research Area: Business and SDGs **Moderator by Dr. Yanapa**	**Research Area: Business And SDGs, Tourism And Hospitality** **Moderator by Dr. Pisuda**	**Research Area: Digital Innovation** **Moderator by Dr. Putthipong**	**Research Area: Business and SDGs, Communication, International Relations, Digital Innovation and Education** **Moderator by Dr. Chuenjit**
08:30-08:55	Consumer Behavior Expectation on Online Purchasing Intention in Line Shopping Application **Sirintorn Thepmongkorn,** & Parinya Nakapthom	Live Streaming and Purchase Intention: A Bibliometrics Analysis **Feng Han,** & Worawit Tepsan	Decoding Public Trust in A.I.: A Russian Perspective **Dr. Phillip Y. Freiberg**	
09.30 -09:25	Revolutionizing Sustainable Waste Industries: Crafting B2B WebLanding Page Interfaces Tailored to Customer Behavior and Preferences **WanQi Mao,** & Wanwisa Wannapipat	Inner Transformation for Global Sustainability in the Context of Air Pollution **Supamongkol Kasemjitwat,** Jhu Chun Yang, & Paichi Pat Shein	Blockchain Account Technology: A Systematic Literature Review of Security, Privacy and Mass Adoption in Human Digital Future **Huifeng Jiao**	Sustainability in Real Estate Investing Focused on Digital Transformation in Thailand (online) **Yuan Ye**

Time / Room	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
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10:00-10:30	The Study of Thailand's Diplomatic Strategies during the Srettha Government's Soft Power Policy **Thada Phueksaniyaphong,** Varizt Akkharasriphat, & Kanokon Rattanapon	Investigating Generation Z's Perception of AIRBNB Platform: A Study of Uniqueness as a Personality of Travelers and their Choices in Thailand **Sasikarn Chatvijit-Cook,** Chakri Kasatri, & Kevin Bryan Cook	Understanding Tourist'S Intention To Use Sustainable Tourism Websites In Thailand: Information System Success Model (Issm) Approach **Chananya Piratanatsakul, &** Asst. Prof. Dr. Nathatenee Gebsombut	Modelling of Physical Objects in the Senior Housing Project on a Digital Twin Platform (online) **Thanadon Jenrungrod**
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11:00-11.25	TASTEA: A Web Application for Generating Personalized Tea Blends for Tea Drinkers **Phusanisa Niyomdacha &** Asst. Prof. Dr. Athitaya Nitchot	Factors Influences on Consumer Purchasing Behaviour Among Young Adults in Kasetsart University Bangkaen Campus (Case Students in the faculty of Business Administration) Pravina Wuttipong, **Ploybussara Gonecome,** Pinsuwan Sakulrattanasak, Patraporn Sakphukiew, & Eakapat Manitkajornkit	The Factors That Effect to Learning Performance in Operation Management Class: The Case of Business Student **Lakkana Hengboriboon**	Revolutionizing Basic Education: Challenges of Federal Education in Myanmar (online) **Naing Ye Zaw,** Ye Yint Maung, Htet Myat Tun, Thantzin Soe, Zay Yar Lin, & Zin Mar Latt

Time / Room	Jamjuree 2nd Floor	Boontarik 3rd Floor	Satabud 3rd Floor	Pathumchard 3rd Floor
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12.00-13.00	Lunch 204 Bistro, G Floor			
13:00-13:30	Best Paper Awards The Handover Ceremony to the 9th TICC International Conference Host Salon A, 2nd Floor			
13:30-14:00	Closing Ceremony Salon A, 2nd Floor			

THE IMPACT OF AI INFLUENCERS ON CUSTOMER ENGAGEMENT AND PERCEPTION OF COOLNESS

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ABSTRACT

The objectives of this study were to examine the impacts of AI influencers on customer engagement and perception of coolness by focusing on mobile networking providers in Thailand, as well as the effect of perception of coolness on customer engagement. This paper contains quantitative research. The sample comprised 400 consumers who were living in Thailand and had heard about AI influencers, using referral-sampling techniques. Data was gathered by questionnaires, and statistical hypothesis testing was run through simple regression analysis. The results showed that AI influencers significantly impact customer engagement and perception of coolness. Specifically, the four dimensions of coolness, which are subculture appeal, attractiveness, utility, and originality, significantly affect engagement respectively. This study contributes academically as it highlights the role of AI influencers in marketing. For managerial contributions, this study gives insight into marketing strategies relating to AI influencers. Additionally, companies should focus more on perception of coolness in order to more effectively drive customer engagement.

KEYWORDS: AI influencer, Virtual influencer, Customer engagement, Perception of coolness, Mobile networking providers

INTRODUCTION

As we live in an age of exponential technological change, the power of technology has led to an explosive period of innovation and invention. The biggest change in the lives of people around the world has been the Covid-19 pandemic, which has changed people's habits and lifestyles. It has also led companies around the world to switch to digital or online forms of communication to customers. AI influencers are the new wave of social media marketing, representing a departure from traditional advertising and influencer partnerships. AI influencers are not real people, but rather computer-generated avatars with surprisingly realistic appearances and personalities (Schaffer, 2023). This necessity for change has further fueled the digital transformation, making influencer marketing, particularly with AI influencers, an essential tool for companies to foster meaningful connections with consumers (Geyser, 2023). Then, companies compete and try to differentiate themselves from their competitors by making their marketing tactics, which must be innovative and appealing, unique in the perception of customers. The rise of AI influencers can be attributed to the increasing demand for unique and engaging content in the digital age, offering brands a new and innovative way to connect with their target audience. The strengths of AI influencers can create unique and innovative campaigns that leverage the authenticity of real-life personalities with the flexibility and technological capabilities of AI characters, resulting in a more diverse and engaging influencer landscape. In today's world, it is becoming increasingly difficult to gain engagement of customers (Li, 2016). Leading AI influencers, for example, have attracted millions of Instagram followers (Influencer Marketing Hub, 2021). AI influencers compete with celebrities in promoting brands and products (Insider, 2019) and are a transformative force in digital marketing. They are computer-generated characters with a strong presence on social media (Moustakas et al., 2020) and

represent a fascinating trend for the promotion of products and services on social media (Get Snapppt, 2018). They have become an effective alternative to traditional social media influencers (Thomas and Fowler, 2020). Currently, numerous companies are setting themselves apart from others by trying to gain competitive advantage such as adopting a distinctive brand voice and using different types of influencers to appeal to customers.

Consumer engagement is defined as the amount of active participation and connectedness consumers have with communication that was sent by other consumers or organizations (Vivek, Beatty and Morgan, 2012). Customer engagement played a significant role in every business organizational operation, which focuses on maintaining and enhancing existing and new customers. The concept is used by Hollebeek, L. D., Glynn, M., & Brodie, R. J. (2014) to define the term engagement as a multidimensional construct that encompasses affective, cognitive and behavioral dimensions. In the context of social media and online media, studies have focused on the behavioral dimension of consumer engagement (e.g., liking, sharing and commenting (Barger et al., 2016).

This study aims to highlight an additional component related to the impact of AI influencers, the perception of coolness. People use the term cool when they see something unique (Belk et al., 2010), special (Devin & Austin, 2012), or otherwise desirable, trendy and up-to-date (Runyan, Noh, & Mosier, 2013). The 'coolness' factor serves as symbolic capital that creates added value and drives market trends. More and more companies are trying to add 'coolness' to their products, services and brands to influence consumer perception. In particular, they are striving to create a cool brand image, use cool influencers, create cool advertising and incorporate cool elements into their offerings (Rahman, 2013; Sundar et al., 2014). Perceptions of coolness appear in four dimensions. There are attractiveness, originality, subculture appeal, and utility (Sundar et al., 2014). Maintaining a cool image through effective positioning strategies is an important goal for modern marketers to support the long-term sustainability of the business. In addition, the desire of most consumers to differentiate themselves from others suggests that a company that can enable the expression of a unique identity will enhance customer pride in its products or services (Ariely and Levav, 2000).

From the existing literature review, it appears that rare research has detailed the impacts of AI influencers on customer engagement and the perception of coolness. Moustakas et al. (2020) note a scarcity of research concerning AI influencers. Therefore, this study aims to fill this knowledge gap by investigating the impacts of AI influencers on customer engagement and the perception of coolness. Specifically, the researcher intends to study new attribute factors of AI influencers' impact on individuals in this digital world. Notably, Asia is anticipated to spearhead growth in the AI influencer sector, owing to Generation Z comprising the largest group of internet users (Keegan, 2022). Studies on influencer marketing are typically focused on human influencers, such as celebrities and social media influencers. However, in recent years, there has been increasing awareness of AI influencers, who transcend human limitations due to their technological origins. This marks the next wave of influencer marketing, and it is unsurprising that tech brands are frequently collaborating with AI influencers to represent their products and services. Companies in Thailand, for example, AIS (Advanced Info Service Public Company Limited) and True (True Corporation Company Limited), have formed partnerships with AI influencers for brand collaborations. These AI influencers have made appearances across social media platforms and in various advertisements.

Therefore, the main objective of this study is to understand the significant and positive effects of AI influencers on customer engagement and perception of coolness as follows:

1. To investigate the impact of AI influencers on customer engagement
2. To study the impact of AI influencers on perception of coolness
3. To explore the impact of perception of coolness on customer engagement

This study contributes academically to the existing theories of source engagement and perception of coolness by applying them to the new phenomenon of AI influencers. This research introduces an interesting variable—the perception of coolness—to determine whether AI influencers have an impact from a customer perspective. These theoretical contributions could be invaluable to those interested in or studying the topic from a consumer viewpoint. This research highlights the concept of the "AI influencers"

which has emerged and is rapidly gaining traction on social media and network services. However, a gap exists in academic research concerning consumer responses to AI influencers. First, from a theoretical standpoint, the empirical study adopts the multi-step flow paradigm and theories of customer engagement and perception of coolness to support the research model, which examines the impacts of AI influencers on customer engagement and perception of coolness. Second, this study extends our understanding beyond prior research on AI influencers' impacts on customer engagement and perception of coolness by focusing on mobile networking providers in Thailand. Additionally, by addressing the current literature gap, academic research can expand existing knowledge regarding AI influencing as a marketing tactic.

For managerial contributions, this research has highlighted AI influencers, alongside celebrities and social media influencers, as an important phenomenon in contemporary culture and a significant subject for marketing researchers and practitioners. In recent years, people have increasingly encountered human-like AI influencers on various online platforms due to the rapid advancement of information technology and artificial intelligence. In this era of intense competition, securing a place in the consumer's mind is exceedingly challenging. As consumer demands and expectations escalate, marketers are incessantly evolving and refining their strategies to effectively and emotionally connect with their target audiences, endeavoring to retain existing customers and attract new ones. These insights will steer managers in the right direction when formulating marketing strategies that might include the creation of AI influencers, clarifying their intended purpose, and determining how they should be presented and managed to align with consumer perceptions and values. This, in turn, should influence customer engagement and their perception of coolness.

LITERATURE REVIEW
AI influencers
AI influencers are computer-generated with unique artificial characters with a strong social media presence that would gain people's attention to this kind of influencer (Moustakas et al., 2020). Miao et al. (2021) referred to AI influencers as 3D and computer-generated personalities. As the article by Rodrigo-Martín et al. (2021) shows, it is advantageous when AI influencers have full control over AI personalities and content in commercial activities. AI influencers become a strategic tool and drive trends. According to Wibawa et al. (2022) has collected and reviewed previous studies about AI influencers, a common thread can be drawn that AI influencers are a new media transformation in the digital world and they can give a new color and dimension to the global marketing world. To summarize, AI influencers have grown in popularity on social media and are followed by a large number of people, who are being increasingly hired to endorse items and brands. They have become a popular way to promote products on social media (Wolff, 2022). It can be assumed that AI influencers will be widely used in various sectors such as fashion, music, games, and films to add a new color and dimension to the global marketing world (Marwick, 2015). Then, there are some impacts of AI influencers on customer engagement and other customer different aspects.

Customer engagement
Consumer engagement defined as "the intensity of an individual's participation in connection with an organization's offerings and activities" (Vivek, Beatty, and Morgan, 2012). Multiple scholars has been conceptualized and all agree that customer engagement produces behavioral results (Vivek et al., 2012; Brodie, Hollebeek, Juric, & Ilic, 2011). Krämer, Lucas, Schmitt, and Gratch (2018) found that virtual agents could achieve similar social interactions as human interactions can and are capable of engaging with consumers much like human influencers. According to the literature, common factors on social media platforms reflecting engagement with a post include the number of likes, comments, and shares. Liffreing (2019) stated that the Essence Cosmetics introduced an AI influencer named Kenna as their intern to promote products and brand values through her storyline. The other empirical studies of the fashion industry have proven the most modern company adopter of AI influence with brands like Chanel, Balmain, Prada, Vetements, Vans, Supreme. Evenmore, brands have used AI influencers for opening ceremonies to promote their collections (Morency, 2018; Sauers, 2019).

Perception of coolness

AI influencers are an interesting identity that attracts people because it feels like something cool and new. Young consumers consider coolness a crucial factor in their decision to adopt digital products (Sundar et al., 2014; Li et al., 2020). Given the potential marketing advantages of perceived coolness, there is an increasing research focus on how to conceptualize the coolness of digital products (Sundar et al., 2014; Raptis et al., 2017; Liu and Mattila, 2019; Kim and Park, 2019; Kim et al., 2015; Cha, 2020). AI influencers' effectiveness is attributed to the perception of coolness, as suggested by this research. As a researcher interested in the mobile telecommunication industry in Thailand which has used AI influencers to promote and impact their brand to customers. The field of AI influencers being relatively new has resulted in limited previous research in this particular area. This study gathers evidence on how AI influencers impact customer engagement and perception of coolness.

The conceptual framework provided by the theories mentioned in previous sections will be utilized to collect data and accomplish the research objectives. The researcher intends to create a conceptual framework (Figure 1).
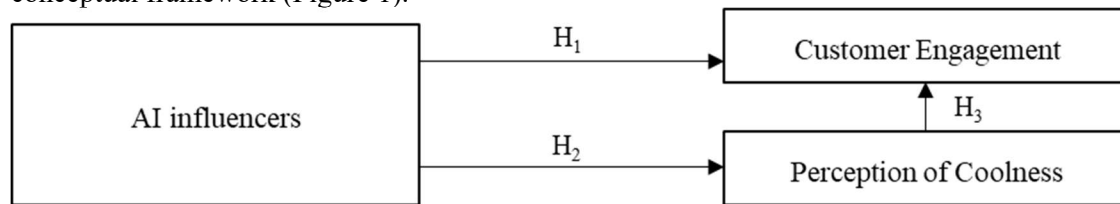
Figure 1: Research Framework

Influencer and Customer engagement

Marketers are using influencers to engage with consumers who normally skip or avoid advertisements (Conick, 2018). Recently, a new type of social media influencer has become well-known as artificial intelligence (AI) influencers (Leighton, 2019; Thomas and Fowler, 2021). In addition to human influencers, some brands are now emphasizing AI influence in their social media platforms communication (Miao et al., 2021). In alignment with prior research that measured consumers' engagement. Multiple scholars have conceptualized consumer engagement, but they all agreed consumer engagement generates behavioral results (Vivek et al., 2012; Brodie, Hollebeek, Juric, & Ilic, 2011). Specifically, consumer engagement on social media has been measured by engagement metrics that measured a set of behavioral responses, such as liking, sharing, and commenting (e.g., Barger, Peltier, and Schultz 2016; Coelho, de Oliveira, and de Almeida 2016; Erkan2015; Gummerus et al. 2012). Thomas and Fowler (2021) have published research on AI influencers, and the result are more likely that AI influencers perceived as similar and interchangeable compared to human influencers. This research employed this scale to evaluate the customer engagement of AI influencers in this study.

1. Likes: Refers to the number of times social media users have clicked on the "like" button to indicate their approval or appreciation of a piece of content.

2. Shares: Refers to the number of times social media users have shared a piece of content with their followers or friends, usually with a comment or personal message attached.

3. Comments: Refers to the number of times social media users have left a comment on a piece of content, usually with a question, feedback, or opinion.

This study assumes that AI influencers can impact customer engagement like a human influencer, they might have similar effects to traditional celebrities to drive positive consumer engagement as well as social media influencers. The potential for this research is to gain a better understanding of the effects on consumer engagement with AI influencers. Researchers predict that AI influencers may have a positive impact on customer engagement as the following hypothesis:

H_1: AI influencers positively impact customer engagement

Influencer and Perception of coolness

The cool factor is that it adds value and drives trends in the marketplace. The increasing number of businesses are trying to add cool factors to make their products, services, and brands identity to make consumers perceive coolness. Warren and Campbell (2014) assert that coolness is a socially constructed

positive quality attributed to objects appearing on people, brands, goods, trends, etc. that are inferred to be appropriately autonomous. Engaging with these influencers implies autonomy, which facilitates the process of establishing an identity as unique, original, and free. An empirical study found that perceptions of coolness were enhanced when they reached appropriate levels of autonomy. Moreover, perceptions of coolness appear in four dimensions. There are attractiveness, originality, subculture appeal, and utility (Sundar et al., 2014). Based on the conceptualization of coolness as a multidimensional experience for those using digital products, Sundar et al. (2014) developed the perceptions of the coolness of digital products. The factor analysis found that the four key dimensions of coolness were relatively independent of each other (Wu et al., 2016). Sundar et al. (2014) suggested that perceived attractiveness, originality, and subculture appeal can enhance the perceived utility of user-aware digital devices. Kim and Park (2019) showed that the perceived attractiveness of digital products influenced their perceived usefulness. Other evidence suggests that the perceived coolness of smartphones is that the curved screen, evident in these four dimensions, increases the intention to adopt the smartphone (Kim et al., 2015). Moreover, coolness has become an important psychological criterion for young people who use digital products (Sundar et al., 2014; Liet al., 2020). According to Sundar (2014), Wu (2016), and Kim and Park (2019; Kim et al., 2015; Cha, 2020), the perception of coolness consists of four key dimensions.

According to the study mentioned above, coolness has become a crucial element required to impact customers. Therefore, this research assumes that AI influencers may have a positive influence on perceptions of coolness, as per the following hypothesis:

H₂: AI influencers positively impact perception of coolness

Furthermore, the researcher would like to investigate the impact of AI influencers on the dimensions of perception of coolness (attractiveness, subculture appeal, originality, and utility). This research employed this scale to evaluate the perceptions of coolness among AI influencers as follows:

1. Attractiveness, which is defined as something providing pleasure or delight, especially in appearance or manner that has the power to make people want to pay their attention. Perceived attractiveness is based on the product's beauty and fashionable style (Dion et al., 1972; Kim et al., 2015). Since AI influencers have a strong characters and appearances that would gain people's attention.

2. Originality, which is the quality of being special, new, and interesting and not the same as anything or anyone else, and refers to lending one's uniqueness. AI influencers are a new form of influencer marketing. Businesses have to be unique from competitors' products in a customer manner.

3. Subcultural appeal is defined as a cultural group within a larger culture that shares a collection of values, beliefs, or interests that vary from those of the larger culture. Perceived subculture appeal refers to the extent to which digital products reflect users' unique personalities, interests, and values (Sundar et al., 2014; Tian et al., 2001). According to AI influencers can reflect people's unique personalities, interests, and values.

4. Utility, which is the state of being useful, profitable, or beneficial. It refers to the usefulness or enjoyment a consumer can get from products and services. AI influencers can enjoy more control and creative freedom over content in many aspects and people can feel enjoyment of those content.

Therefore, this research assumes that AI influencers may have a positive influence on attractiveness, subcultural appeal, originality, and utility as the following hypothesis:

H₂₁: AI influencers positively impact attractiveness
H₂₂: AI influencers positively impact subcultural appeal
H₂₃: AI influencers positively impact originality
H₂₄: AI influencers positively impact utility

Perception of coolness and customer engagement

Since perception of coolness is a new attribute that increases the brand's worth in the eyes of the consumers (Warren et al., 2019). Moreover, in various product classes and customer groups, the coolness of a product is crucial to a brand's success. Successful companies like Apple Inc. have launched many products such as iMac, iPad, iPhone, and iPod, which have been revolutionized by cool products (Im et

al., 2015). Identifying cool factors such as unique features is a method for distinguishing technology products for consumer evaluation (Sundar et al., 2014). In simple words, coolness refers to the consumer perception of brands as appealing, reliable, usable, authentic, and having appeal and higher status. The coolness of technology products is a significant factor in determining company competitiveness, achievement of objectives, and product differentiation. Moreover, the study from Attiq et al. (2022) researched on how brand coolness affects the customer's psychological well-being through brand engagement and the results found a positive impact of brand coolness (stimulus) on brand love and brand engagement. The purpose of this study is to highlight how the perception of coolness can be a key driver in customer engagement with AI influencers. Moreover, the study also emphasizes the fact that in this era of intense competition, technology products need to attain customer delight through a perception of coolness that is focused on their branding strategies.

According to this study, AI influencers may have a direct and indirect effect on customer engagement through the perception of coolness. To be clearer, this research wants to study the positive impact of the perception of coolness (stimulus) on customer engagement, which means the perception of coolness may have indirectly influenced engagement and assumed that perceived coolness is one of the powerful predictors of customer engagement. Based on the literature mentioned, the following hypotheses support the indirect effect of certainty on engagement through perceptions of coolness:

H_3: Perception of coolness positively impact customer engagement

RESEARCH METHODOLOGY

Since AI influencers are a relatively new topic, it raises many questions. To gain a better understanding, the researcher needs to be explored more deeply. It allows researchers to confirm basic information that will lead to a broader knowledge about the field and develop new assumptions to provide direction for a more systematic for future research. The researcher arranges the research methodology as follows:

1. Research Design

The study will be conducted using quantitative research methods (Quantitative approach) using online surveys. The survey research will be conducted by distributing questionnaires to the target population.

2. Population and Sample

The sample size for this research is determined based on the people who live in Thailand and heard about AI influencers. The study will investigate the impact of AI influencers on customer engagement and perception of coolness. The questionnaire as a data collection tool by using the calculation principle of the Krejcie and Morgan (1970) shows that even for large population sizes (1 million). To conduct the study, it is necessary to have 384 participants. The large sample size of this research made it suitable for use as a benchmark.

3. Sampling technique

This research applies non-probability sampling, this approach is useful in this study that seeks to capture AI influencers from many perspectives. The researcher used referral sampling techniques or snowball sampling techniques.

4. Index of item objective congruence (IOC) and Pre-test

The structure of an instrument is the identification of item numbers to be used for measuring a variable. To verify the validity of the content, the questionnaire consists of three parts and the qualified items have the IOC greater than 0.50.

The questionnaire that has been reviewed by the independent study's advisor and the three experts to make corrections before being used for pre-testing with 30 samples. The results were analyzed to find confidence (Reliability) of the questionnaire in each variable by means of finding the value of Cronbach's Alpha Coefficient (Kalaya Vanichbancha, 2009) to test the reliability and consistency of the questionnaire. The resulting alpha value shows the constant of the questionnaire, which will have a value between $0 \leq \alpha \leq 1$. A value that is very close to 1 indicates high confidence.

5. Data collection

Data collected from the questionnaire surveys (Google Form).

6. Data Analysis and Statistical Method

Data was analyzed using simple regression analysis. The impact of AI influencers to customer engagement and perception of coolness by using Simple Linear Regression. Besides, the results of Simple Linear Regression analysis, this research is can explain that AI influencers as the important elements (independent variable), which significantly impacts on customer's engagement and perception of coolness (dependent variables) and to verify whether hypothesis should be accepted or rejected regarding descriptive analysis and confidence interval set in software. The Simple Linear Regression formula in this study is as follows:

$$Y_1 = b_0 + b_1X_1 + e$$
$$Y_2 = b_0 + b_2X_1 + e$$
$$Y_1 = b_0 + b_2X_2 + e$$

Where:

Y_1	=	customer engagement
X_1	=	AI influencers
X_2, Y_2	=	perception of coolness
b_0	=	intercept
b_1, b_2	=	regression coefficients for each independent variables
e	=	error

DATA ANALYSIS AND RESEARCH FINDINGS

The online survey received 415 responses. There are some filter questions regarding the respondent's knowledge of who does not qualify to answer the next questions and to ensure that participants met the required criteria for participating in this study. To conclude, simple regression analysis will be used to analyze the data from 400 respondents. The result showed that the majority of respondents are female (53.8%) aged between 25-34 years old (64.8%), most respondents are employees (representing 49.0%) and achieved a bachelor's degree (71.5%), with income of 35,001-45,000 baht (49.0%) and they have known AIS and True use AI influencers as their brand ambassadors (83.8%).

1. Hypothesis Testing and Simple Regression Analysis

The reliability test, the result of Cronbach's Alpha Coefficient in the following appreciation questions. The AI influencer variables were at 0.96, while the customer engagement variables were at 0.888, and the perception of coolness variables were at 0.928. According to the coefficients of all factors that came out, the questionnaire confidence (Reliability) is high because the value is more than 0.7, which is close to 1, which indicates high reliability (Nunnally, 1978). Then, the results can be analyzed in the next step. The data analyzed in this research are presented based on the chosen statistical methods. The objective of this chapter is to draw conclusions from the research questions and hypotheses that were previously introduced. The researcher has analyzed the data and presented the analysis results as follows:

Table 1: Results of Simple Linear Regression Analysis of the influence factor of AI influencers has a positive impact on customer engagement.

Model	b	Std. error	Beta	t-test	p
Constant	0.158	0.116		1.358	0.175
AI influencers	0.860	0.033	0.791	25.814	0.000
R= 0.791, R²= 0.626, F-test= 666.342* p= 0.000					

Customer engagement

The hypothesis testing results by simple linear regression analysis at a significant level of 0.05. It was found that AI influencers (p = 0.000) significantly impact customer engagement because it was found that the p-value of the equation is equal to 0.000 with statistical significance at the .05 level. The result of the regression coefficient is equal to 0.860, which is a positive number. Then, there is the positive

influence of AI influencers to customer engagement. Moreover, R Square is equal to 0.626 of the variation in our response. AI influencers explained a large amount of the variance between the variables (63%).

The result shown that the positive regression coefficient in descending order was as follows: AI influencers (b=0.860), which was able to construct the regression equations as follows:

Y (customer engagement) = 0.158 + 0.860 (AI influencers)

From the above equation, it can be seen that if the appreciation factor in AI influencer is increased by 1 unit, while other factors remain unchanged, The impact of customer engagement will increase to 0.860 units.

Table 2: Results of Simple Linear Regression Analysis of the influence factor of AI influencers has a positively impact perception of coolness.

Model	b	Std. error	Beta	t-test	p
Constant	0.524	0.098		5.372	0.000
AI influencers	0.855	0.028	0.837	30.547	0.000
R= 0.837, R^2= 0.701, F-test= 933.117* p= 0.000					

Perception of coolness

The hypothesis testing results by simple linear regression analysis at a significant level of 0.05. It was found that AI influencers (p = 0.000) significantly impact perception of coolness because it was found that the p-value of the equation is equal to 0.000 with statistical significance at the .05 level. The result of the regression coefficient is equal to 0.855, which is a positive number. Then, there are the positively influenced AI influencers to perception of coolness. Moreover, R Square is equal to 0.701 of the variation in our response. AI influencers explained a large amount of the variance between the variables (70%).

The result shown that the positive regression coefficient in descending order was as follows: AI influencers (b=0.855), which was able to construct the regression equations as follows: Y (perception of coolness) = 0.524 + 0.855 (AI influencers)

From the above equation, it can be seen that if the appreciation factor in AI influencers is increased by 1 unit, while other factors remain unchanged, The impact of perception of coolness will increase to 0.855 units.

Table 3: Results of Simple Regression Analysis of the influence factor of appreciation in perception of coolness has a positive impact on customer engagement.

Model	b	Std. error	Beta	t-test	p
Constant	0.273	0.120		2.275	0.023
Perception of coolness	0.819	0.034	0.769	23.995	0.000
R= 0.769, R^2= 0.591, F-test= 575.774* p= 0.000					

Customer engagement

The result was found that the p-value of the equation is equal to 0.000 with statistical significance at the .05 level. More specifically, the regression coefficient is equal to 0.819, which is a positive value. Then, there is the positive influence of customer engagement to perception of coolness. Moreover, R Square is equal to 0.591 of the variation in our response. AI influencers explained a large amount of the variance between the variables (59%).

The result shown that the positive regression coefficient in descending order was as follows: AI influencers (b=0.819), which was able to construct the regression equations as follows:

Y (Customer engagement) = 0.273 + 0.819 (Perception of coolness)

From the above equation, it can be seen that if the appreciation factor in perception of coolness is increased by 1 unit, while other factors remain unchanged, The impact of customer engagement will increase to 0.819 units.

Table 4: Conclusion of hypothesis result of this study

Hypothesis	Beta	P-Value	Testing result

H$_1$: AI influencers positively impact customer engagement	0.791	0.000	Accepted
H$_2$: AI influencers positively impact perception of coolness	0.837	0.000	Accepted
H$_3$: Perception of coolness positively impacts customer engagement	0.769	0.000	Accepted
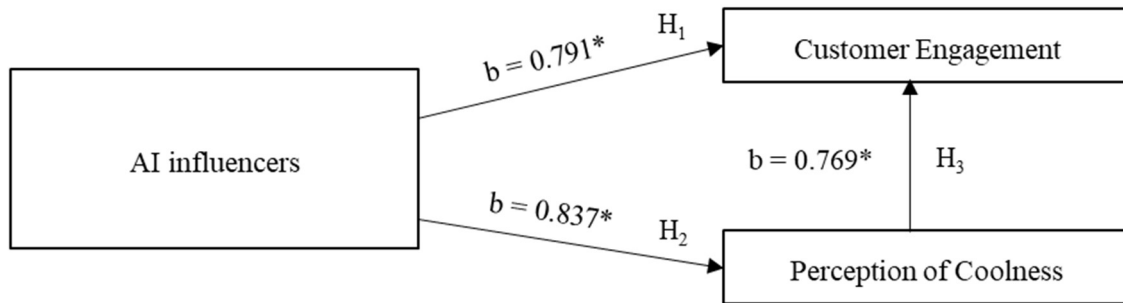
* There was statistical significance at the .05 level.

Figure 2: The result of hypothesis by using Simple Linear Regression Analysis under the hypothesis framework.

The mediator is considered an intervening variable, which explains the relationship between a predictor variable and a criterion variable. For the sake of explanation, below is a hypothesized mediation relationship. A simple hypothesis for the first two models is that AI influencers have a direct relationship on customer engagement and perception of coolness. For the third model, perception of coolness has an indirect direct relationship on customer engagement. By using the mediation model, it is hypothesized that AI influencers have a direct relationship on perception of coolness, and then perception of coolness has an indirect relationship on customer engagement. In other words, we are attempting to establish a chain of influence where AI influencers influence perception of coolness, and perception of coolness, in turn, influences customer engagement.

The Baron and Kenny (1986) method is an analysis strategy for testing mediation hypotheses. According to four criteria should be met if the mediation effect exists:

1) The independent variable (X) impacts the mediating variable (M)
2) The mediating variable (M) impacts the dependent variable (Y)
3) The independent variable (X) impacts the dependent variable (Y)
4) Full mediation exists if the independent variable has an insignificant effect on the dependent variable when the mediating variable is controlled (Baron and Kenny, 1986)

In this method for mediation, there are two paths to the dependent variable. The independent variable (AI influencers) must predict the dependent variable (customer engagement), and the independent variable must predict the mediator (perception of coolness) as following:

X= AI Influencer, M = Perception of coolness, Y= Customer engagement

According to this study, the researcher performed a simple group regression to further test the impact between AI influencers and the dimensions of perception of coolness (attractiveness, subcultural appeal, originality and utility). The research assumptions are as follows:

H$_{21}$: AI influencers positively impacts attractiveness
H$_{22}$: AI influencers positively impacts subcultural appeal
H$_{23}$: AI influencers positively impacts originality
H$_{24}$: AI influencers positively impacts utility

Table 5: Conclusion of hypothesis result of this study

Hypothesis	Beta	P-Value	Testing result
H$_{21}$: AI influencers positively impacts attractiveness	0.819	0.000	Accepted
H$_{22}$: AI influencers positively impacts subcultural appeal	0.754	0.000	Accepted

H$_{23}$: AI influencers positively impacts originality	0.712	0.000	Accepted
H$_{24}$: AI influencers positively impacts utility	0.788	0.000	Accepted

From Table 5, based on simple regression analysis, AI influencers positively impact the dimensions of perception of coolness i.e. attractiveness, utility, subcultural appeal, and originality respectively. Consequently, all hypotheses (H$_{21}$-H$_{24}$) were accepted. Figure 3 showed the hypotheses results.
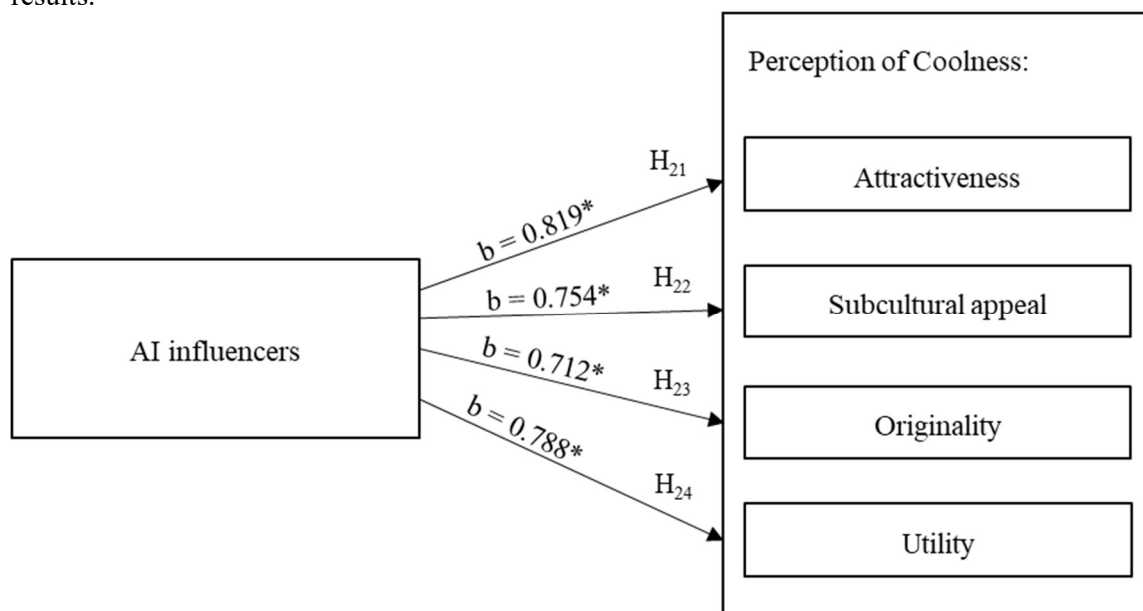
* There was statistical significance at the .05 level.

CONCLUSION AND RECOMMENDATIONS OF THE STUDY
1. Discussion of the result

The research results indicate that people perceive engagement and perception of coolness when they know the company working with AI influencers. Specially, the company should pay attention to perception of coolness as a key driver on customer engagement. The first objective was to investigate the impact of AI influencers on customer engagement. The result proved that AI influencers positively impact customer engagement, which can be made in accordance with the research of Hutchinson, A. (2019) stating that AI influencers receive nearly three times the amount of engagement as genuine influencers, This suggests that followers are more interested in the content of AI influencers. Ferrara et al. (2016) also mentioned the potential positive effects that can be achieved from AI influencers. Kádeková (2018) and Moustakas et al. (2020) shared several opinions on the challenges that could follow AI influencers. They also discussed many of the potential advantages that could arise from a well-implemented AI influencer strategy. They have become a popular way to promote products on social media from Wolff (2022). It can be assumed that AI characters will be widely used in various sectors such as fashion, music, games, and films to add a new color and dimension to the global marketing world from Marwick (2015). Furthermore, AI influencers are gaining popularity in other sectors, such as American fast food chains like KFC, which has created an AI influencer named Colonel Sanders. As a researcher interested in the mobile telecommunication industry because many popular companies are trying new technologies. One of the leading companies like Samsung linked into Miquela's infinite potential and allows Miquela to engage with various creative fields in unique ways, and Lenovo teamed up with Imma under the campaign-encouraged people to express and embrace their creativity (VirtualHumans.org, 2022). There are sources from Brand Buffet (2021) that summarize that businesses in Thailand have entered the world of Metaverse, namely AIS and True that have launched their own virtual presenters (AI Ailyn and Imma). Bangkok

Business Media (2022) has announced that two mobile network providers have utilized AI influencers to promote their brand's image in the modern world and increase customer engagement.

For the second objective, the findings indicated that AI influencers positively impact perception of coolness. This was consistent with the past studies by Sundar et al., (2014), Kim and Park (2019), Kim et al. (2015). Cha (2020) proved that coolness has become an important psychological criterion by young consumers adopting digital products (Sundar et al., 2014; Li et al., 2020). Due to the potential marketing benefits of perceived coolness from customers, there is a growing focus on how to conceptualize the coolness of digital products. While a stream of studies has found that the proposed four dimensions of perceived coolness can trigger users to adopt digital products from the study of Kim and Park (2019), Kim et al. (2015), Wang and Sundar, (2018), Liu et al. (2019), Cha (2020). The result proved that AI influencers had a positive impact on perception of coolness, which can be made in accordance with the research of Hiunkul, C. (2016) studied on factors positively influencing on intention to purchase smart watches in Thailand. The study evaluated some factors of perception of coolness as subcultural appeal and perceived usefulness (Utility) and found that subcultural appeal and perceived usefulness (Utility) had a positive influencing Intention to purchase smart watches.

For the third objective, the result proved that perception of coolness positively affected customer engagement. The findings were in accordance with the study by Attiq et al. (2022) indicating a positive impact of brand coolness on brand engagement. This study intended to highlight the crucial significance of the perception of coolness as a key driver of customer engagement with AI influencers. By using the mediation model, it was hypothesized that AI influencers have a direct relationship on perception of coolness, and then perception of coolness has an indirect relationship on customer engagement. To put it differently, we are attempting to establish a chain of influence where AI influencers influence the perception of coolness, which in turn influences customer engagement.

Moreover, the researcher aims to study advanced on investigate and understand of coolness dimensions (attractiveness, subcultural appeal, originality and utility) that can made in accordance with the research of Sundar et al., (2014) study the perceived coolness of a digital product is thought to be a multidimensional psychological judgment of the product's subculture appeal, attractiveness, originality and utility. The variable with the best predictive power of perception of coolness is attractiveness, utility, subcultural appeal and originality respectively, which can made in accordance with the previous study from Sundar et al. (2014) suggested that perceived attractiveness, originality, and subculture appeal can enhance the perceived utility of user-aware digital devices. Kim and Park (2019) showed that the perceived attractiveness of digital products influenced perceived usefulness. There is also solid evidence that originality and attractiveness together affect perceptions of the utility of a digital device (Sundar et al., 2014), and aesthetic appeal can improve subcultural appeal (Bruun et al., 2016; Raptis et al., 2017).

2. Recommendations for companies

This research points to the concept of AI influencer has emerged and is rapidly growing in popularity in social media and network services. According to the Influencer Marketing Factory (2022), 58% of respondents follow at least one AI influencer and 35% of consumers said they had purchased a product promoted by an AI influencer. According to the research result, those aged 18-44 were most likely to have purchased a product that an AI influencer promoted, which can align with the research result showing that most of the respondents are between 25-34 years old, with a total of 259 people, representing 64.8%. Then, companies should focus on target audiences between 25-34 years old.

As the result proved that most of the respondents had responded to AI influencers. It was found that the overall AI influencers average score is 3.40 (mean = 3.40). The first ranked item was found that "I think posts on social media can catch my attention because there are AI influencers in the posts" with the highest average score (mean = 3.56), followed by the item "I can recall brands that use AI influencers on social media" (mean = 3.55). Then, companies should adapt to these trends and use the right AI influencers because respondents had a positive response to AI influencers.

According to the result from the customer engagement variable in the questionnaire, it was found that the overall customer engagement average score is 3.08 (mean = 3.08). The first ranked item was found that "I would press the "like" button when I saw posts of AI influencers on my social media

feed" can meets the highest standards with the highest average score (mean = 3.28)", followed by the item "I think that I might share posts of AI influencers about their brand in the near future" (mean = 3.13). Then, the use of AI influencers are revolutionizing the advertising industry for marketing purposes. This suggests that companies should focus on content of AI influencers because it can boost customer engagement.

Moreover, the study also emphasizes the fact that in this era of intense competition, technology products like AI influencer need to attain customer delight through perception of coolness. According to the result, the overall customer perception of coolness average score is 3.43 (mean = 3.43). The factor that has the most impact on perception of coolness is originality that meets the highest standards with the highest average score (mean = 3.55) and the item of "I think AI influencers are unique" had the highest average score (mean = 3.63). The secondary factor is attractiveness (mean = 3.49) and the item of "AI influencers are cool" had the average score (mean = 3.63). The next factor is utility (mean = 3.40) and the item of "I think the purpose of AI influencers is to be useful" had the highest average score (mean = 3.56). The last factor that has the least impact on perception of coolness is subcultural appeal (mean = 3.27) and the item of "I think knowing an AI influencer can make me feel more of a technology leader than a follower" (mean = 3.40). As from the result, it can be useful and beneficial to companies that should consider developing a marketing strategy. Due to the world shift in digitalization provided a need and opportunity for a new kind of influencer and apparently, the market is constantly changing, which means companies should continually develop their strategies accordingly. The outcomes of this study can highlight the important role of perception of coolness can play a key driver in developing customer engagement with AI influencers. Moreover, the study also emphasizes the fact that in this era of intense competition, AI influencers need to attain customer delight through perception of coolness to reach higher engagement.

3. Limitations of the study and future research recommendation

This research only studies the impact of AI influencers to marketing aspects, which are customer engagement and perception of coolness. Then, this leaves a gap of interest to examine the AI influencers that could be of interest for the future marketing regarding using AI influencing as a marketing tactic. The researchers should consider future research studies as follows:

- The significant advantage of working with AI influencers is the opportunity to reach new, younger audiences because they seem to be particularly interested in this new media content. Therefore, future research can tap into study this demographic in a more effective way such as company can use AI influencers to affect customer by target specific demographics, such as Gen Z and millennials, as they are more likely to engage with digital characters because they are more familiar with the use of AI influencers and digital engagement.

- This research is only limited to the mobile network telecommunication in Thailand. Then, future researchers could examine other industries such as fashion, automobile, restaurant.

- This research only used quantitative research design, so future research could do other research designs, such as experiments and interviews with companies or people who used AI influencers and see how many they interact with the AI influencer. With this, researchers could ask in depth questions why the respondents choose their answers and can investigate more deeply how and why people get involved with AI influencers. In addition, they can assess the implications of different types of AI influencers on various aspects to fulfill the gap of connection, interaction, and social relationships between AI influencers and people. Then, future research could include studies on technique, graphics, marketing advertisement or campaign, and the use of artificial intelligence to improve AI influencers.

- The limitations that exist in this study that can be the way to the expansion of future research directions. This research only focuses on AI influencers in Thailand. Then, future research could focus on other AI influencers from other countries or other continents and compare the results with the results of this study.

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Using Technology Acceptance Model to Explain the TrueMoney Wallet Application Usage: An Empirical Study of Thai Consumers in Bangkok Metropolitan

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ABSTRACT

Financial technology advancements are transforming consumer behaviour by shifting from cash to e-payments. Although cash is still the primary method, Thais are increasing e-payments adoption which lead to the emergence of numerous e-wallet providers in the market. Hence, this research utilized the Technology Acceptance Model to analyse Thai consumers' acceptance of TrueMoney e-wallets and the factors influencing their frequency of usage.

A partial correlation was run to determine (1) the correlation between Perceived Usefulness and Perceived Ease of Use with Frequency of TrueMoney Wallet usage; and (2) analyse the correlation between Frequency of TrueMoney Wallet usage and Satisfaction level, while controlling for education and income variables. Controlling variables prevents the influence of control variables on the correlation between independent and dependent variables. The study uses quantitative research using a survey method, with 400 respondents participating.

The results showed that PU and PEOU have a positive and significant partial correlation with frequency of usage ($r = .20$, $p = .00$) equally. Meanwhile, frequency of usage has a positive and significant partial correlation with satisfaction ($r = .12$, $p = .01$). The study confirmed that people are more likely to use e-wallets when they perceive them as useful, easy to use, and experience satisfaction when interacting with them.

Research results guide financial service providers in planning competitive strategies and meeting customer demands. The development of e-wallet system efficiency is needed to promote usefulness, and easiness, then leads to satisfaction and long-term usage. They can increase market share and brand loyalty, furthermore, small, medium, and large businesses also gain benefits by increasing sales when payment is perceived as easy.

KEYWORDS: E-wallet, Frequency of usage, Technology Acceptance Model (TAM)

INTRODUCTION

With financial technology advancement, electronic payments have introduced the world to a cashless society where everyone uses less cash in making payments (Abdullah et al., 2020; Thanasrivanitchai et al., 2022). Since smartphones and the internet have become essential components in people's daily lives, mobile payment is becoming popular globally. It is a new payment platform that affects consumer behaviour, turning from cash to e-payment (Khoa, 2020). According to We Are Social and Hootsuite's digital report 2022, a digital agency and social media management platform, the percentage of mobile payment services users in 2022 found that Hong Kong had the first highest usage with 41.6%, followed by Taiwan and Thailand with 39.9% and 36.2% respectively, while the average worldwide usage was 25.8% (We are social, 2022). Bank of Thailand also reported that Thais have increasingly used digital payments in all sectors as the services are convenient, fast, and safe. The transaction volume per capita rapidly increased exponentially from 63 times per capita per year in 2017 to

312 times per capita per year in 2021. Moreover, the average transaction value also sharply declined to less than 4,000 baht in 2021, compared to 12,000 baht in 2017 (Bank of Thailand, 2021). It indicates that Thais adopt digital payment technology in daily life spending.

One of the most convenient mobile payments is an electronic wallet (e-wallet). An e-wallet is a digital form of physical wallet that enables users to make online transactions via applications on a smartphone (Lui et al., 2021). Users can link bank accounts and credit/debit cards with an e-wallet to deposit money into an e-wallet for future transactions. E-wallet allows users to make payments for goods and services, transfer money, bill payments, top-up services, and perform financial transactions (Phuong et al., 2020). In Thailand, e-wallets are gaining popularity due to new service providers offering convenience and promotions, including discount coupons for food, fares, and miscellaneous expenses. BOT's statistics revealed a steady increase in e-money users from 2018 – 2022, with a rise in customer accounts, top-up value, and spending value, as presented in Table 1. E-wallet usage surged because e-commerce growth boosts e-wallet adoption, retailers accept e-wallet payment channels, and COVID-19 prevents physical money transmission (Bank of Thailand, 2021).

Table 1 Use of E-money in Thailand

Transaction through e-Money	Year				
	2018	2019	2020	2021	2022
No. of account (in millions)	91.75	82.35	96.74	120.35	124.04
Top up value (Millions of Baht)	217,456.99	292,121.69	314,429.44	472,923.11	648,575.85
Spending value (Millions of Baht)	203,475.21	276,317.42	309,553.49	467,317.29	627,928.58

Source: (Bank of Thailand, Use of e-money in Thailand, 2023)

Thailand has crucial players who serve e-wallets in the market, such as TrueMoney Wallet, Rabbit LINE Pay, ShopeePay, GrabPay, mPay, etc. According to Statista 2023, TrueMoney Wallet held the top e-wallet market share in Thailand, with 52.6%, followed by Rabbit LINE Pay at 24.7% (Statista, 2023). E-wallet brands offer similar online payment functionality, but each brand has its unique advantages as a competitive advantage. This research focused on TrueMoney Wallet application as an empirical study. TrueMoney Wallet is a leading fintech company in Southeast Asia, serving 50 million users and 88,000 agent locations domestically and internationally (TrueMoney, 2023). It offers complete services that users can use instead of cash to buy products at 7-Eleven, pay bills, top-up services, pay for products in vending machines, and shop online: buy apps, games, stickers, etc. It also allows users to spend abroad in countries like Japan, South Korea, Singapore, China, Malaysia, the United Kingdom, Italy, Germany, and France at stores supporting the Alipay+ network. Not only is convenience provided for users, but it also offers benefits like promotions, discounts, coupons, and points for privilege redemption. TrueMoney Wallet operated under Ascend Group, a subsidiary of Charoen Pokphand Group (C.P.). C.P. Group is Thailand's largest enterprise and manages subsidiaries in Thailand and overseas, operating across multiple industries under a single corporate group (Charoen Pokphand Group, 2023). C.P. operates a diverse business across its eight business lines which retail and distribution business under CPALL is one of its business lines that make a lot of revenue such as 7-Eleven, Lotus's, and Makro. Hence, TrueMoney Wallet is available especially in the C.P. network.

However, e-wallet businesses face obstacles and barriers that limit their business success. Firstly, cash is still a primary payment method for Thais due to some reasons: emulating close acquaintances, the acceptance or demand for payment methods by merchants, income-receiving channels, or individual attitudes towards payment channels (Bank of Thailand, 2021). Next, numerous e-wallet service competitors have emerged, each brand offering unique features and promotions to encourage users to try their wallet brand. Also, there are substitute services like mobile banking, which have gained more popularity. Mobile banking is an app that customers can access and manage their bank accounts in real-time, including earning interest (Bank of Thailand, 2021). There is a possibility that users may discontinue using the technology after initially accepting it. Even if a consumer's initial acceptance of an

e-wallet is a first step toward achieving e-wallet success, the success of e-wallet businesses relies on consumers' continued usage (Lee, 2010).

Therefore, this research aims to study the acceptance of e-wallet technology by Thai consumers that influences their frequency of usage from the perspective of perceived usefulness and perceived ease of use to investigate whether these factors influence positively and significantly their frequency of TrueMoney Wallet usage. In addition, this research also examines how frequency of usage correlated with satisfaction. To achieve research objectives, we utilized the Technology Acceptance Model (TAM) which is a popular model relevant to the acceptance of new technologies.

RESEARCH OBJECTIVES

To study the partial correlation between Perceived Usefulness and Frequency of TrueMoney e-wallet usage while controlling education and income variables.

To study the partial correlation between Perceived Ease of Use and Frequency of TrueMoney e-wallet usage while controlling education and income variables.

To study the partial correlation between Frequency of usage and Satisfaction level toward TrueMoney e-wallet while controlling education and income variables.

LITERATURE REVIEW
Theoretical background and Hypotheses development
Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is an information systems theory that simulates how users agree to adopt and use new technology (Davis, 1989). TAM was proposed by Fred Davis in 1989 which initially aims to encourage employees' technology acceptance in organizations. TAM is one of the most well-known conceptual theories in the digital platform system developed from Ajzen and Fishbein's Theory of Reasoned Action, TRA (Ajzen & Fishbein, 1980). TRA is the major antecedent of TAM which provided a psychological perspective to predict human behaviour in general. In the process of users' intention to use new IT, TAM proposes that perceived usefulness (PU) and perceived ease of use (PEOU) are the two distinctive factors influencing how people accept new technology. Numerous studies have revealed that the Cronbach's alpha reliability of the determinants of TAM constructs is greater than 0.9 (Davis & Venkatesh, 1996; Yousafzai et al., 2007). TAM's reliability and validity have made it applicable in various research fields like online banking, internet shopping, mobile commerce, and e-learning.
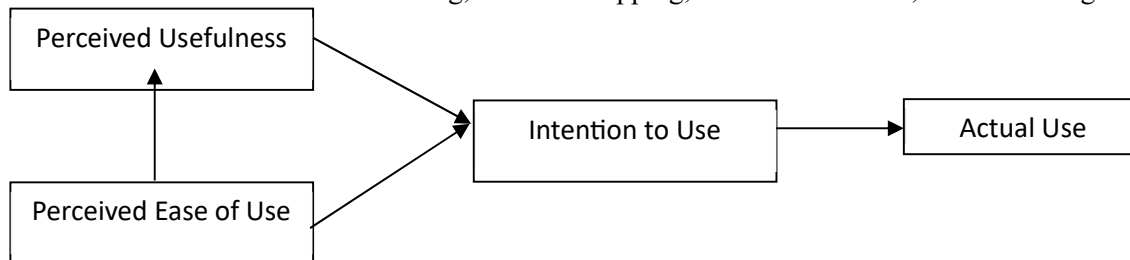
Figure 1: Technology Acceptance Model (TAM) by Fred Davis, 1989

According to TAM's frameworks (Fig. 1), PU & PEOU are the specific beliefs about technology adoption that replace the attitude element in the TRA. PU & PEOU related to the behavioural intention directly because the intention to use the system may be based on expected outcomes regardless of attitude towards the system. In other words, employees may use a system even when they have a negative attitude towards a system because they believe it will help them perform their tasks more effectively (Davis et al., 1989; Fayad & Paper, 2015). Consequently, we eliminated the attitude construct from our analysis because TAM no longer includes it (Venkatesh et al., 2012; Burton-Jones & Hubona, 2005). In addition, our model is different because we would study the frequency of usage instead of the intention to use so that we can investigate how PU and PEOU influence to frequency of usage.

Perceived Usefulness (PU)

Davis (1989) defined usefulness as its ability to be used advantageously; therefore, perceived usefulness refers to an individual's belief that using a particular technology will enhance their job performance. Numerous studies indicate that PU significantly influences consumer behaviour toward the initial acceptance and continued usage of new technology (Amoroso & Watanabe, 2012; Pikkarainen et al., 2004; Venkatesh et al., 2012). Pertiwi et al., (2020) mentioned that perceived usefulness means having the work done more efficiently and effectively in a very short time. TAM suggests that if a person believes in its positive performance, they would accept the technology and tend to use it more frequently (Hsiao et al., 2016). In the context of mobile payment, the service will be useful if it provides customers with what they expect and leads them to continue to use the service (Khoa, 2020). Several academic studies confirm PU as one of the factors which influence the actual system use such as online banking (Pikkarainen et al., 2004), mobile payment (Kim et al., 2010; Singh et al., 2020), e-commerce applications (O'Cass & Fenech, 2003), and innovative products (Thanasrivanitchai & Shannon, 2014), etc.

Perceived Ease of Use (PEOU)

Perceived Ease of Use (PEOU) refers to the degree to which a person believes that using a particular technology would be free from physical and mental effort (Davis, 1989). In other words, when people find an application that is easy to use with effortless, they are more likely to accept an application and find it useful compared to a complex system (Davis, 1989; Khoa, 2020). Several IT studies revealed that PEOU is one of the most influential determinants that impact the acceptance of new technology which found a positive correlation between PEOU and intention to use mobile payment services (Kim et al., 2010; Lwoga & Lwoga, 2017; Singh et al., 2020). Users feel less threatened if the technology innovations are simple to understand, learn, and use. Conversely, users would be prevented from using the system if they had any difficulties in using it (Kwon, 2016; Nawi et al., 2022). Some mobile wallet constraints like complicated systems and difficult manipulations, can cause dissatisfaction and lead to refusing to use m-wallets, especially among aging and inexperienced consumers (Thanasrivanitchai et al., 2017; Tho & Trinh, 2021). This study wants to know whether PEOU correlates with frequency of usage if users perceive the ease of using technology.

Satisfaction

Originally, Locke (1976) defined satisfaction in the job performance aspect as "a pleasurable or positive emotional state resulting from the appraisal of one's job". Later, Oliver & Linda (1981) extended the definition of satisfaction in the consumption aspect as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience". Expectation-confirmation theory (ECT) is frequently used in consumer behaviour literature, which aims to study post-purchase behaviour and consumer satisfaction. The ECT model suggests that consumers' intention to repurchase or continue using a product or service is primarily influenced by their satisfaction with the previous use (Bhattacherjee, 2001b). Customer satisfaction and continuance usage intention will arise when benefits achieve or surpass the expected performance. However, dissatisfaction and discontinuance intention occur in the reverse situation (Manzano et al., 2011). Many Information System literature has emphasized satisfaction as a key to building and maintaining customer loyalty and continued usage in the long term (Bhattacherjee, 2001a; Chen et al., 2015). Earlier studies on technology acceptance confirmed that satisfaction is statistically significant with continuance intention to use technologies, for instance, m-wallet (Singh et al., 2020; Singh et al., 2017), online shopping (Natarajan et al., 2018), mobile applications (Hsiao et al. 2016), etc. In other words, satisfaction determines whether an individual will keep using the technology in the future. Users with higher satisfaction levels are more likely to continue using the technology (Agrebi & Jallais, 2015; Chen et al., 2015; Liao et al., 2007; Wixom & Todd, 2005). Furthermore, Manzano et al. (2011) stated that frequency of use will positively relate to satisfaction because if a customer uses a service frequently, the repeated positive service experience will result in higher satisfaction. Agrebi and Jallais (2015) suggest that TAM should include an additional variable related to the emotional and cognitive response occurring post-purchase or post-adoption.

Partial Correlation

A partial correlation measures the relationship between two random variables (Variable X and Y) by eliminating the effect of other variables (Variable Z). Using the correlation coefficient to determine the relationship between two variables; probably misleads the result if there are other variables related to both variables of interest. Hence, this research was based on partial correlation to determine the correlation between perceived usefulness and frequency of usage, as well as the correlation between perceived ease of use and frequency of usage; moreover, to analyze the correlation between frequency of usage and satisfaction level towards TrueMoney Wallet usage. This research uses two control variables: Education and Income.

A. Income as a control variable

Previous studies suggest that higher income and education levels are strongly correlated with a greater likelihood of engaging in activities such as smartphone adoption or accessing mobile Internet. Higher-income levels tend to accept and use new technology more than lower-income levels or unemployed persons. The latter group has affordability concerns that deter them from the high cost of technology adoption. National Telecommunications and Information Administration (NTIA) revealed different levels of smartphone adoption based on income, education, and other factors. The percentage of using smartphones-based Internet, web browsing, downloading apps, and social networking among higher-income levels is more than lower-income levels (U.S. Department of Commerce, 2014). Income appears to be positively related to the opportunity to use technology. Antee (2021) mentioned that an individual's income is a crucial factor in a person's experience and knowledge of mobile technology adoption and learning because income can affect the type of mobile device a person can afford. Furthermore, a study at the University of Michigan found that most e-banking users have a medium-high or high-income class (Kolodinsky et al., 2004; Shanab, 2013). Mostly high-income class is considered as innovators in Diffusion of Innovation (DOI) who want to be the first to try the new technology and can afford the cost (Shanab, 2013). Since income level has the potential to be related to the dependent variable (outcome), it will be used as a control variable (covariate) in this research (Thanasrivanitchai et al., 2021).

B. Education as a control variable

As with income, technology adoption also varied significantly based on educational attainment (U.S. Department of Commerce, 2014). Prior research stated that sophisticated cognitive structures obtained through higher education levels will lead to a better ability to learn in new situations; as a result, knowledge is one of the main reasons for deciding whether to use technology (Bower & Hilgrad, 1981; Dahawy & Kamel, 2005; Thanasrivanitchai et al., 2021). Igbaria et al. (1995) found a negative relationship between education and computer anxiety, which means less educated persons have more computer anxiety than highly educated persons and vice versa. High-educated persons would be more receptive and open-minded to newer technology than less educated persons since education levels are related to a better ability to learn (Dahawy & Kamel, 2005). Rogers (1995) explains that the acceptance of new technology is related to one's knowledge of how to utilize that technology appropriately, including complex technologies that require more knowledge, such as the Internet. Kinney et al. (2003) confirmed that educated persons tend to be more inclined to utilize technological products and services. Therefore, education will be used as a control variable involved in the partial correlation analysis in this research since it has the potential to be related to the results.

Conceptual Framework

Regarding the literature review, the research utilized the Technology Acceptance Model (TAM) proposed by Davis in 1989, which consists of 2 main factors, perceived usefulness (PU) and perceived ease of use (PEOU), to study partial correlation with the frequency of TrueMoney Wallet usage instead of attitude and behavioural intention. Meanwhile, the research further analyses a partial correlation between frequency of usage and satisfaction level as the conceptual framework presented in the figure below.
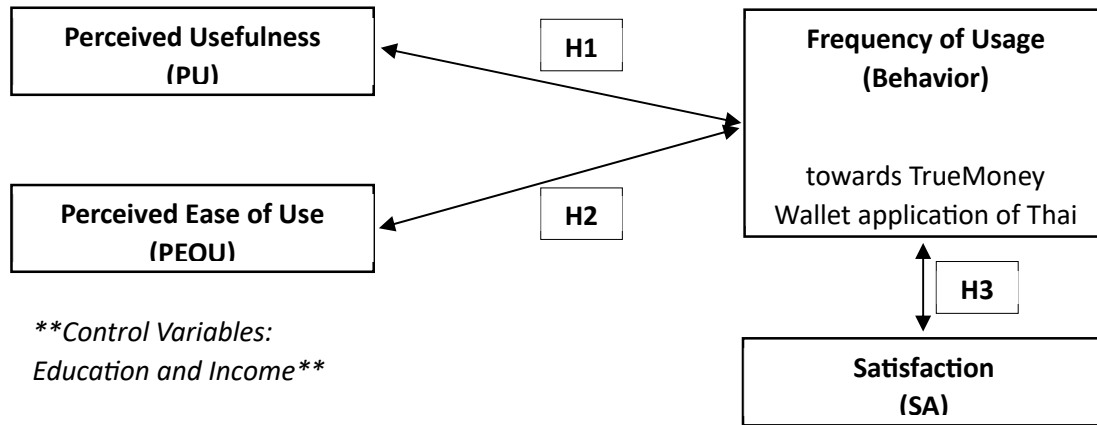
Figure 2: Conceptual Framework

Hypotheses

      Hypothesis 1 Among Thai consumers who are TrueMoney Wallet users, there is a positive partial correlation between perceived usefulness (PU) and frequency of usage while controlling education and income.

      Hypothesis 2 Among Thai consumers who are TrueMoney Wallet users, there is a positive partial correlation between perceived ease of use (PEOU) and frequency of usage while controlling education and income.

      Hypothesis 3 Among Thai consumers who are TrueMoney Wallet users, there is a positive partial correlation between frequency of usage and satisfaction while controlling education and income.

RESEARCH METHODOLOGY

Data collection and Sample design

      The survey utilizes self-administered questionnaires via Google Forms by distributing the link and QR code on social media platforms such as Facebook, Instagram, LINE, Pantip, etc. We also randomly asked buyers at 7-Eleven stores to participate in the survey by giving them the link or QR code to access the online questionnaire. The questionnaire was distributed to Thai consumers using TrueMoney Wallet in Bangkok and the Metropolitan area during April - June 2023 using a convenience sampling method. This method is cost-effective and simple to use for presenting closed-ended questions; moreover, it is acceptable for use in theory testing research (Aaker et al., 2007; Thanasrivanitchai et al., 2021). Before the questionnaires were distributed, professional translators ensured the quality of the translation and reduced measurement errors by translating the English version of the questionnaire into Thai and back into English. A total of 477 surveys were obtained from Thai respondents; however, only 400 surveys are usable in the analysis as they have passed the screening stage.

Measurement

      In our study, questionnaires were closed-ended and were measured using the Likert's five-point scale which ranged from strongly disagree to strongly agree, represented with 1 to 5, respectively. Regarding the conceptual model, all 16 scale items were derived from previous studies on technology acceptance. Six items for perceived usefulness were adapted from Davis (1989); except PU6 was taken from Tian et al., (2023). Next, six items for perceived ease of use, another pivotal construct in TAM, also were adapted from Davis (1989). Lastly, the three items for satisfaction were derived from Bhattacherjee (2001a), who used the items to understand how consumers continue to use e-commerce services. For the frequency of TrueMoney Wallet usage, we employ the scale developed by Burton-Jones and Hubona (2005) who integrated TAM to identify factors influencing the adoption of internet usage. However, it is necessary to verify the reliability and validity of every scale utilized in this study.

      Reliability and Validity

      The questionnaire derived from the literature review is put through a reliability test using Cronbach's alpha, which has values ranging from 0 to 1. A higher than 0.7 coefficient alpha is regarded as

satisfactory and suggests that the questionnaire is credible. The results show high levels of reliability for all 400 samples through an online convenient survey method. The Cronbach's Alpha showed by the SPSS program for PU, PEOU, and satisfaction was 0.79, 0.86, and 0.81, respectively. Therefore, this questionnaire was acceptable and reliable since Cronbach's Alpha exceeded 0.7 (Cronbach, 1951).

Table 2 Reliability Cronbach's Alpha

Variable	Cronbach's alpha	Number of Items
Perceived Usefulness (PU)	0.796	7
Perceived Ease of Use (PEOU)	0.863	6
Satisfaction (SA)	0.812	3

Table ... 3

Discriminant Validity (Pearson's correlation coefficient)

Correlation	PU	PEOU	SAT
Perceived Usefulness (PU)	1		
Perceived Ease of Use (PEOU)	.603**	1	
Satisfaction (SA)	.631**	.614**	1

**Correlation is significant at the 0.01 level.

To check discriminant validity for the measures, Pearson's correlation coefficient was applied to examine correlations for each pair of constructs. These correlations demonstrated whether there is a high correlation or low correlation between measures. If two variables are low correlated, it indicates unrelated or unique information contributes to the analysis. Referring to Hinkle et al., (2003), a general guideline for interpreting the size of the correlation coefficient explains that a correlation coefficient of 0.7 is considered as a high positive correlation, so the r value which is lower than 0.7 considered agreeable for discriminant validity. Nikolopoulou (2022) also confirmed that the value starting at r = 0.85 is considered high when conceptualizing discriminant validity. It can be seen that all variables in our analysis (Table 3) found a correlation of approximately r = 0.6 which has moderate positive correlations. Thus, it supports discriminant validity for our scale.

RESULTS
Part I: Respondents' summary
Table 4 Respondents' summary

Demographic	Division		Frequency	Percent (%)
Gender	Male		153	38.3
	Female		247	61.8
		Total	400	100.0
Age	18 – 26 years old		82	20.5
	27 – 42 years old		234	58.5
	43 – 58 years old		62	15.5
	59 years old and above		22	5.5
		Total	400	100.0
Education	Lower than Bachelor's degree		46	11.5
	Bachelor's degree		250	62.5
	Higher than Bachelor's degree		104	26.0
		Total	400	100.0
Occupation	Government official / State enterprise employee		74	18.5
	Private company employee		177	44.3
	Self-employed / Freelance		86	21.5
	Student		51	12.8

			Frequency	Percent
	Unemployment		12	3.0
		Total	400	100.0
Income	Less than or equal to 15,000 baht		59	14.8
	15,001 – 30,000 baht		121	30.3
	30,001 – 45,000 baht		136	34.0
	45,001 – 60,000 baht		62	15.5
	More than 60,001 baht		22	5.5
		Total	400	100.0

A total of 400 respondents participated in this study, as shown in Table 4. Most respondents (61.8%) are female, while the rest (38.3%) are male. Around half of the respondents (58.5%) are Gen Y aged between 27 – 42 years old, followed by Gen Z (18 – 26 years old, 20.5%), Gen X (43 – 58 years old, 15.5%), and Baby Boomer (59 years old and above, 5.5%), respectively. Most respondents hold Bachelor's degrees (62.5%) or higher (26%). Almost half of the respondents (44.3%) work as a private company employee, followed by self-employed / Freelance (21.5%), Government official / State enterprise employee (18.5%), Students (12.8%), and unemployed only 3%, respectively. One-third of them (34%) earn between 30,001 – 45,000 baht, followed by earning 15,001 – 30,000 baht (30.3%), 45,001 – 60,000 baht (15.5%), less than or equal to 15,000 baht (14.8%), and more than 60,001 baht (5.5%).

Part II: TrueMoney Wallet usage level
Table 5 The frequency of TrueMoney Wallet usage per week

	N	Minimum	Maximum	Mean	Std.
Frequency of usage	400	1	25	5.21	3.66

<table>
<tr><td colspan="5" align="center">Table 6 TrueMoney Wallet usage level</td></tr>
<tr><td>Question items</td><td>Division</td><td></td><td>Frequency</td><td>Percent</td></tr>
<tr><td>Q2: How long have you been using TrueMoney Wallet?</td><td>Less than 1 year</td><td></td><td>74</td><td>18.5</td></tr>
<tr><td></td><td>1 – 3 years</td><td></td><td>199</td><td>49.8*</td></tr>
<tr><td></td><td>4 – 7 years</td><td></td><td>116</td><td>29.0</td></tr>
<tr><td></td><td>More than 8 years</td><td></td><td>11</td><td>2.8</td></tr>
<tr><td></td><td></td><td>Total</td><td>400</td><td>100.0</td></tr>
<tr><td>Q3: Which of the following purposes do you use TrueMoney Wallet?</td><td>Entertainment</td><td></td><td>72</td><td>18.0</td></tr>
<tr><td></td><td>General consumption</td><td></td><td>237</td><td>59.3*</td></tr>
<tr><td></td><td>Financial services</td><td></td><td>67</td><td>16.8</td></tr>
<tr><td></td><td>Donation</td><td></td><td>3</td><td>0.8</td></tr>
<tr><td></td><td>True rewards</td><td></td><td>21</td><td>5.3</td></tr>
<tr><td></td><td></td><td>Total</td><td>400</td><td>100.0</td></tr>
<tr><td>Q4: What is the average transaction amount per one usage?</td><td>Less than 100 baht</td><td></td><td>71</td><td>17.8</td></tr>
<tr><td></td><td>101 – 500 baht</td><td></td><td>253</td><td>63.3*</td></tr>
<tr><td></td><td>501 – 1,000 baht</td><td></td><td>59</td><td>14.8</td></tr>
<tr><td></td><td>More than 1,001 baht</td><td></td><td>17</td><td>4.3</td></tr>
<tr><td></td><td></td><td>Total</td><td>400</td><td>100.0</td></tr>
<tr><td>Q5: Where do you use TrueMoney Wallet the most?</td><td>Convenience stores and supermarkets</td><td></td><td>226</td><td>56.5*</td></tr>
<tr><td></td><td>Department stores</td><td></td><td>66</td><td>16.5</td></tr>
<tr><td></td><td>Online shopping</td><td></td><td>84</td><td>21.0</td></tr>
<tr><td></td><td>Food and Beverage outlets</td><td></td><td>24</td><td>6.0</td></tr>
<tr><td></td><td></td><td>Total</td><td>400</td><td>100.0</td></tr>
<tr><td>Q6: Who influenced or motivated you to start</td><td>Family member</td><td></td><td>64</td><td>16.0</td></tr>
<tr><td></td><td>Friend / colleague</td><td></td><td>134</td><td>33.5</td></tr>
</table>

using TrueMoney	Merchant / shop staff		66	16.5
Wallet?	Started using it by my self		136	**34.0***
		Total	400	100.0

For the frequency of TrueMoney Wallet usage per week (Table 5), we allowed respondents to answer numerically in the blanks depending on the number of times they used it per week. The results showed that the average transaction of all 400 respondents is 5.21 times per week, with a maximum of 25 times and a minimum of only once a week. According to TrueMoney Wallet usage level (Table 6), half of the respondents (49.8%) have experienced TrueMoney Wallet usage for at least 1 – 3 years. Over half of them (59.3%) use TrueMoney Wallet for general consumption in daily life. For the average transaction amount, the majority of respondents (63.3%) spend between 101-500 baht per transaction, with 56.50% frequently using TrueMoney Wallet at convenience stores and supermarkets. Furthermore, one–third of them (34%) started using it by themselves, and another 33.5% of the respondents were motivated by their friends/colleagues.

Part III: Hypotheses testing with Partial Correlation
Table 7 Partial Correlation between TAM and Frequency of Usage with control variables

Control Variables			Frequency of Usage	PU	PEOU
Education & Income	Frequency Usage	Correlation	1.00		
		Sig.	.		
	PU	Correlation	**.20**	1.00	
		Sig.	**.00***	.	
	PEOU	Correlation	**.20**	.61	1.00
		Sig.	**.00***	.00	.

Table 8 Partial Correlation between Frequency of Usage and Satisfaction with control variables

Control Variables			Frequency of Usage	Satisfaction
Education & Income	Frequency Usage	Correlation	1.00	
		Sig.	.	
	Satisfaction	Correlation	**.123**	1.00
		Sig.	**.014**	.

For all hypotheses, we use partial correlation to test the relationships between two determinants of TAM (PU, PEOU) with the frequency of TrueMoney Wallet use, as well as the frequency of use and satisfaction level. The study tests the effect of each explanatory variable on the frequency of TrueMoney Wallet usage by excluding the effects of other explanatory and control variables, such as education and income, to ensure the validity of the test results.

Hypothesis 1 posits a positive relationship between Perceived Usefulness (PU) and the frequency of TrueMoney Wallet usage. As shown in Table 7, the results of the partial correlation between PU and frequency of usage illustrate the positive partial correlation value (R) is .20, P-value = .00. It can be concluded that PU has a positive partial correlation and is significant with frequency of usage, meaning that if respondents perceived usefulness increase one scale, the frequency of usage will also increase 20.00%. Thus, hypothesis 1 is supported.

Hypothesis 2 predicts a positive relationship between Perceived Ease of Use (PEOU) and the frequency of TrueMoney Wallet usage. This hypothesis is supported since the direction of PEOU and frequency of usage showed the correlation value (R) is .20, P-value = .00 (Table 7). It can be concluded that PEOU has a positive partial correlation and is significant with the frequency of usage, meaning that

when respondents perceived ease of use increased by one scale, the frequency of usage will also increase by 20.00%.

Hypothesis 3 posits a positive relationship between the frequency of TrueMoney Wallet usage and satisfaction level. The result showed that frequency of usage has a positive partial correlation and is significant with satisfaction level as shown in Table 8 (R = .12, P-value = .01). It means when respondents increase the frequency of TrueMoney Wallet usage on one scale, the satisfaction level will increase by 12.30%. Thus, hypothesis 3 is supported.

DISCUSSION

According to the summarized results, all hypotheses are supported because the partial correlation presented a small positive and significant value while controlling education and income variables.

Firstly, the present study found that perceived usefulness is partially significant (P-value = .00; r = .20) correlated with the frequency of usage by Thai consumers. It means if people perceive the usefulness of TrueMoney Wallet, they are more likely to use the application more frequently. The research findings indicated that Thai participants know TrueMoney Wallet enables them to make quicker payments and makes daily payment transactions easier. TrueMoney Wallet also helps them to manage their payment more efficiently. The result is consistent with previous studies that perceived usefulness (PU) has a significant on the actual system use such as mobile payment (Kim et al., 2010; Singh et al., 2020), Internet banking (Lee, 2009), and online banking (Pikkarainen et al., 2004). Although this study found a positive partial correlation between PU and frequency of usage is significant, the r value still presented a weak relationship between the two variables (Dancey & Reidy, 2007). There are some reasons why people are aware of the usefulness of TrueMoney Wallet, but their awareness is not sufficient to increase their usage frequency. Referring to the result, most Thai participants use TrueMoney Wallet for general consumption and use at convenience stores or supermarkets. It means people can easily switch to mobile banking instead if they find its usefulness superior to TrueMoney Wallet. Since TrueMoney Wallet is not regulated by commercial banks, money saved in the account can't earn interest as well as mobile banking. TrueMoney Wallet should focus on improving useful and attractive functions/services to persuade more usage as Kim et al., (2010) suggested that service providers should increase the system's usefulness and maintain customer loyalty by designing and developing a better service without increasing complexity. Furthermore, based on the questionnaire's result, the mean of "Offers advantages such as discounts, promotions, and rewards" was the lowest at 3.93. It means people still do not perceive the benefits or rewards of using TrueMoney Wallet that much. TrueMoney Wallet should focus on marketing strategies to promote its usefulness.

Secondly, the study presented that perceived ease of use is partially significant (P-value = .00; r = .20) correlated with the frequency of usage by Thai consumers. Same as perceived usefulness, it means when people find TrueMoney Wallet is easy to use, they intend to increase their usage more frequently. The results indicated that Thai participants believe TrueMoney Wallet is easy to use because the procedures are clear and straightforward. They can easily learn how to use and become proficient quickly in using the application. The findings align with prior studies that perceived ease of use positively and significantly influenced the intention to use m-payment (Kim et al., 2010) and mobile wallets (Singh et al., 2020; Khoa, 2020). Nevertheless, this study also found a positive partial correlation between PEOU and frequency of usage significant, but the r value still presented a weak relationship between the two variables (Dancey & Reidy, 2007). Some researchers stated that PEOU has a low impact on actual usage. It is consistent with Lee (2009), who said that as online systems become more user-friendly, concerns about difficulty in usage are less. People have become increasingly competent in using the system since it is more common and standard. Most mobile payment applications are designed to provide ease of use for all ages, especially Generation Y and Z, who are familiar with digital technology. Furthermore, the similarities between mobile payment and physical currencies made people think mobile payment usage was as simple as cash, so they still prefer paying in cash (Shaw, 2014; Ly & Ly, 2022). However, the mean of "I find TrueMoney Wallet to be flexible and user-friendly" got the lowest at 4.05 based on the questionnaire's result. It may be because TrueMoney Wallet users must top up money into their

TrueMoney account before usage and have to pay transaction fees when they want to transfer money to another bank account. Using TrueMoney wallet at the checkout point may not cover all areas in general, while mobile banking is possible. It makes users feel more flexible when using mobile banking, such as being able to use it at SMEs or street food shops in tourist attractions. Therefore, TrueMoney Wallet should focus on increasing the flexibility and user-friendly of the system to differentiate it from mobile banking or cash payment.

Thirdly, the study revealed that frequency of usage is partially significant (P-value = .01; r = .12) correlated with satisfaction level by Thai consumers. It means the more consumers use TrueMoney Wallet, the more satisfied they will be. The study indicated that consumers are satisfied with the app's performance and usage experiences, deeming it a wise choice for payment transactions. Prior research confirmed that satisfaction is associated with usage rates such as mobile wallets (Singh et al., 2020; Singh et al., 2017), online shopping (Mohamed et al., 2014; Natarajan et al., 2018), and mobile applications (Hsiao et al. 2016). Consumers are likely to continue the usage if they are satisfied with prior experiences (Agrebi & Jallais, 2015; Mohamed et al., 2014). However, this study also found a positive partial correlation between frequency of usage and satisfaction significant, but the r value still presented a weak relationship between the two variables (Dancey & Reidy, 2007). Customer satisfaction is not only influenced by frequency of usage but also by various other factors. Those are perceived usefulness and perceived ease of use. They are more likely to be intervening variables besides the frequency of usage, which also impacts customer satisfaction. Satisfaction could be seen as customers' perception of how effective the TrueMoney Wallet supports them in making payment transactions (Phuong et al., 2020). In other words, if people perceive the usefulness and easiness of TrueMoney Wallet, satisfaction from frequent usage will also increase.

CONCLUSION

In this empirical study, we analysed TrueMoney Wallet usage by Thai consumers and the factors influencing their frequency of usage. The results showed that the frequency of TrueMoney Wallet use is partially correlated to PU, PEOU, and satisfaction. All hypotheses are supported since there were positive and significant values with frequency of use. It means when consumers perceive the usefulness and ease of TrueMoney Wallet, they tend to increase their usage more often. Meanwhile, if consumers are satisfied with the e-wallet, they are likely to continue the usage more frequently.

This study contributes in terms of academic contributions and practitioner contributions. From an academic perspective, our research model and findings contribute toward mobile payment technology research in the future. Firstly, this research enhances the understanding of the Technology Acceptance Model from a new perspective by examining the frequency of usage rather than a behavioural intention to use, which improves the original knowledge base of Davis 1989. This new measurement, frequency of usage, was consistent with the traditional TAM and other research on mobile payment technologies adoption. It means future research can measure the frequency of usage in other digital payment technology research. Secondly, few studies investigated the relationship between the intention to use with users' satisfaction (Singh et al., 2020; Ariffin et al., 2021) meanwhile, none of the studies evaluated the partial correlation between frequency of usage and satisfaction. Thirdly, the research topic in E-wallet and digital payment is a strength point that recently is an interesting and popular trend at the global level. In addition, the paper about Thai consumers using e-wallets for online transactions is considered an underexplored context. Therefore, future researchers can utilize this model as a basis for further studies or study from different perspectives.

For practitioner contributions, TrueMoney Wallet is recommended to improve an easy and useful e-wallet platform in order to increase their customers' satisfaction.

Firstly, TrueMoney Wallet should focus on improving useful and attractive applications by adding new functions/services that cover broader customers' lifestyles, and the service is outstanding from competitors. For example, TrueMoney Wallet can currently only top-up money for MRT cards and easy-pass cards; they can consider adding a new function that allows passengers to be able to scan to pay a BTS Skytrain and MRT fares via TrueMoney Wallet application without using a separate card. This new service will encourage customers to use TrueMoney Wallet more often in their daily lives.

Secondly, TrueMoney Wallet should improve the application to be more flexible and user-friendly for users. For example, TrueMoney Wallet can consider expanding its checkout point in broader areas such as collaborating with SME businesses in tourist attractions. Moreover, TrueMoney can consider reducing the transaction fee for transferring money to other bank accounts so that users feel free to use it.

Thirdly, TrueMoney Wallet should emphasize marketing strategies to increase users' awareness and stimulate usage. 1) TrueMoney Wallet should advertise its various functions and benefits reach to the target group, especially for generations Y and Z. TrueMoney can consider utilizing social media platforms to promote the application such as sponsors to famous YouTubers/influencer in the field of traveling, shopping, lifestyles, etc. to review the application. 2) TrueMoney can consider offering promotions to persuade them to use it frequently. For example, if users top-up money into a TrueMoney account THB2,000 and above, they will get an extra THB100 coupon per time for purchasing goods at 7-Eleven. 3) TrueMoney can collaborate with its business alliances to launch special campaigns for TrueMoney Wallet customers such as discounts, double points, lucky draws, etc. These promotions will persuade them to top-up money and pay via TrueMoney Wallet more.

Limitations and Recommendations for further studies

Despite its contribution, this study also has some limitations. Future researchers can take opportunities to further study and get more strong results that are useful in the future. Firstly, the sample size may be disproportionate because it represents a small group of the Thai population. This study uses a convenience sampling method, it may lack the ability to generalize the results of the survey to the whole population in terms of demographic characteristics such as different ages, genders, education, occupation, income, and geography (Sekaran & Bougie, 2016). All respondents in this study come from Bangkok and metropolitan areas where the opinion may be different from those who live in rural areas. As TrueMoney Wallet requires a good facility such as Internet and smartphone, consumers from other provinces may have different perceptions and reflect different results. Moreover, we also analysed a single-country context only in Thailand, but different e-wallet payment systems and functionalities across each nation will lead to varying outcomes in terms of consumer behaviour and technology adoption. Future research can alternatively include a larger sample size to enrich the findings by considering other geographical or demographical differences to diverse perspectives such as countries, generations, and income classes. Next, our model studied a single type of innovation, TrueMoney Wallet. For future research, it would be more interesting if we could compare results with competitors' brands or other mobile payment technologies: mobile banking, so that the researcher can validate whether this model provides true results for other technologies. Lastly, our primary objective was to analyse the classical TAM model and whether PU and PEOU partially affect to frequency of usage. However, measuring additional constructs can provide a more rigorous analysis and further explanations of our results. Future research can integrate more constructs because not only internal perspectives affect consumer behaviour but also various other situational factors. An extended technology adoption model may reveal more generalized findings and provide a better understanding of the frequency of e-wallet usage.

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What reasons make eastern-region people use mobile banking

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ABSTRACT

Using mobile banking has gained popularity and has seen significant growth in recent years. Thai banks offer a wide range of online banking services that cater to the needs of their customers. Therefore, the purposes of this study are to 1) investigate factors that influence mobile banking users in Thailand's eastern region and 2) to suggest managerial strategies that can lead to further development of mobile banking services. A paper-based questionnaire was distributed to 450 mobile banking users located in the seven provinces that make up Thailand's eastern region, and 410 questionnaires were completed and returned. A study was conducted using PCA to extract information into four constructs. The findings highlighted four constructing factors that influence mobile banking service users: attitude, usefulness, intention, and reliability. The results of this study could help banks to improve their performance and to design features that would best serve their mobile banking customers.

KEYWORDS: Attitude, Intention, Reliability, Mobile Banking, Usefulness

INTRODUCTION

Most banks provide their customers with technology-based services such as automated teller machines, telephone banking, internet banking, and mobile banking. Mobile banking is an online banking service that allows customers to access their bank accounts using a mobile device such as a smartphone, provided that the bank's mobile banking application has been downloaded to the mobile device.

Banks in Thailand offer a few types of technology-based services for their customers. One of the newer technologies offered by Thai Banks is mobile banking. This service has become a very important part of everyday life for people living in Thailand. Mobile banking allows Thai customers to access their account information and make cashless financial transactions anytime from almost anywhere. As a result, Thai bank customers no longer are limited to visiting a bank's branch location to conduct most of the common types of banking services. Clearly, mobile banking technology is replacing traditional onsite banking services.

LITERATURE REVIEW

Advancements in technology have created powerful financial tools that can be used to transform traditional banking services. Mobile banking is one of the newest financial tools, and it has revolutionized banking services. Kacharoen and Thanabordeekij (2018) state that mobile banking removes space and time constants for many banking activities including accessing account balances and transferring money from one account to another. The technological advances of the internet and the smartphone have changed people's behavior within the consumer banking industry. The increasing use of mobile banking has caused a corresponding decline in visits to physical bank branches, and this change will continue to transform banking system from "brick and mortar" to "digital" (Puriwat & Tripopsakul, 2017).

Mobile banking was first introduced in the late 1990s in the United States. In the decade between 2010 and 2020, banks in many countries, including Thailand, have developed mobile banking services. Today, mobile banking is one of a bank's main operating strategies, and it is also a focal point for a bank's

growth strategies (Puriwat & Tripopsakul, 2017). According to Woo and Kao (2022), Southeast Asia accounts for very high adoption rates of mobile due to extensive mobile internet penetration within the SE Asian societies. As a result, banking in SE Asia has set records for the highest number of financial transactions. The authors also claim that in Southeast Asia, the rise of online and mobile-app based services has grown significantly in recent years. Thailand is no exception. Most of the banks in Thailand have their own application for smart phones through which the customers can easily do the online banking transaction anytime and anywhere. (Kacharoen & Thanabordeekij, 2018).

According to an article published in Thailand Business News by Tan (2018), "The volume of internet and mobile banking transactions continues to expand at a rapid pace as both internet and mobile penetration improve in Thailand." (Figure 1).

Thailand's internet and mobile banking transaction volume is increasing rapidly
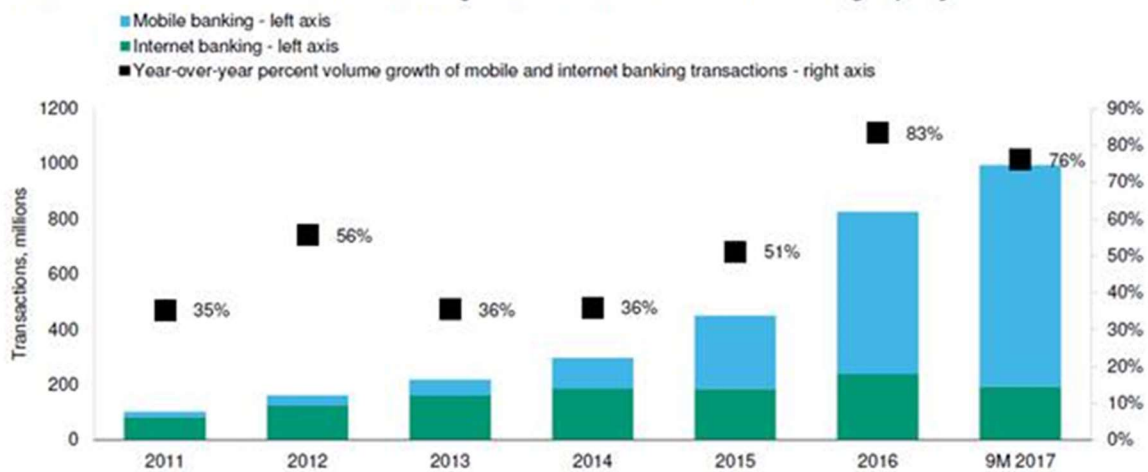
Source: Bank of Thailand in Tan (2018)

Currently, Thailand has the key infrastructure in place to support digital finance, and Thailand is now a global leader in mobile banking usage. According to a UN Assessment conducted in 2023, Thailand was ranked first in mobile banking transactions according to the Digital 2021 Global Review Report. Thailand continues work to develop a domestic infrastructure that supports electronic banking. To further this development, the Thai government is pursuing national initiatives that will allow bank customers to access bank loans and credit cards as well as transfer cash using only mobile phone numbers (Woo & Kao 2022).

Thailand has made significant achievements regarding digital inclusion in recent decades. Among countries in Asia and the Pacific, Thailand is classified in a high-digital access cluster along with Australia, Japan, Singapore, and Vietnam. Thailand has a higher-than-average number of mobile subscriptions (>81%) and a higher-than-average percent of people using the internet (51%). Both the percentages of individuals using the internet and of individuals aged over 15 who made or received digital payments in Thailand are above 60%, which is a level similar to China (UN Assessment, 2023).

Research shows that many people in Thailand use mobile banking. According to Ruangkanjanases and Wongprasopchai (2018), people up to age 40 use mobile banking services because these services are compatible with their needs and their lifestyles, and these users find mobile banking services to be useful. Additionally, younger people tend to have the ability to use mobile banking efficiently and effectively. In Thailand specifically, young Thai customers are more open to consider nontraditional financial services because the younger generations love to try new things (Ruangkanjanases & Wongprasopchai 2018). According to Silparcha (2017), the majority of Thai people have a positive perception towards mobile banking. However, he found that transferring money is the most commonly used service, followed by

accessing account balances and making online bill payments. He further concluded that the majority of Thai bank customers do not use many of the other services currently offered by various Thai commercial banks.

Research has shown that several factors influence the use of mobile banking. Mahakunajirakul (2022) found that a customer's perceived usefulness had the most significant influence on their behavior towards use of mobile banking services. He also found that the perceived ease of use also had an influence on their behavior towards use of mobile banking services. Similarly, Silparcha (2017) reported that mobile banking users placed high value on the service's reliability and user friendliness. Kacharoen and Thanabordeekij (2018) found that the major influencing factors which affect mobile banking customer loyalty are external factors. These external factors include influence by friends and family, influence from media advertisements, and influence because the user is technically savvy. Other factors included ease of use of the bank's mobile app, convenience of using mobile banking, and flexibility to make bank transactions from anywhere. Moreover, they found that the more the consumer is satisfied, the more reluctant they are to change their mobile bank mobile service.

The quality of service provided by banks is another important issue for customers who choose to adopt mobile banking services (Puriwat & Tripopsakul, 2017), and Mahakunajirakul (2022) also concluded that if mobile banking service quality is higher, then the adoption of mobile banking would increase.

RESEARCH OBJECTIVES

The purposes of this study were to investigate factors that influence mobile banking users in Thailand's eastern region and to suggest managerial strategies that can lead to further development of mobile banking services.

RESEARCH METHODOLOGY

This study was conducted in the eastern region of Thailand which include the following seven provinces: Chonburi, Rayong, Chanthaburi, Trat, Chachoengsao, Prachinburi, and Sa Kaeo. The study was conducted using a purposive sampling survey. Respondents were screened by a single screening question to ensure that they were the targeted respondents and that they had used mobile banking at least once in the past 12 months. The paper questionnaires were distributed to 450 mobile banking users by convenient population selection. The survey response rate was 91.11 percent: 410 surveys were completed and returned.

The instrument used to collect data for this paper was a closed-ended questionnaire divided into two sections. The first section asked respondents for demographic and personal information including gender, age, monthly income, educational level, occupation, and their experiences using mobile banking within the past 12 months. The second section of the questionnaire asked respondents for the 25 reasons that drive them to use mobile banking. In this section, the respondents were asked to rate each reason on their degree of acceptance toward using mobile banking. A five-point Likert scale was used, and the scale ranged from five for "Totally Agree" to one for "Totally Disagree".

Data Collection and samples

The questionnaires were delivered by hand to the 450 mobile banking users who were distributed in the seven eastern provinces. Of the survey that were collected, 410 valid responses were used for empirical analysis as shown in Table 1.

Table 1: The demographic profiles for the samples used in the analysis

Variables		N (410)	Percent
Gender	Male	232	56.6
	Female	178	43.4
Age	Younger than 20	89	21.7
	20-29	209	50.9
	30-39	94	23.0
	40-49	18	4.4
Monthly Income (in Thai Baht)	Lower than 10,000	135	33.0
	10,001-30,000	240	58.5
	30,001-50,000	30	7.3
	50,001-70,000	2	0.5
	Over 70,000	3	0.7
Educational Level	Lower than a bachelor's degree	197	48.0
	Bachelor's degree	197	48.0
	Higher than a bachelor's degree	16	4.0
Employment	Private company employee	155	37.8
	Public or state-government employee	49	12.0
	Private business owner	85	20.7
	Student	102	24.9
	Unemployed	16	3.9
	Other	3	0.7
Experience of mobile banking use within the past 12 months	1-10 times	157	38.3
	11-20 times	99	24.1
	21-30 times	71	17.3
	31-40 times	20	4.9
	More than 40 times	63	15.4
Length of time using mobile banking	Shorter than 1 year	192	46.8
	1-3 years	154	37.6
	4-6 years	52	12.7
	7-9 years	9	2.2
	Longer than 9 years	3	0.7
Respondent's home province	Chonburi	131	32.0
	Rayong	62	15.1
	Chanthaburi	46	11.2
	Trat	20	4.9

Variables	N (410)	Percent
Chachoengsao	61	14.9
Prachinburi	42	10.2
Sa Kaeo	48	11.7

DATA FINDINGS

Data were collected using a quantitative survey which consisted of 25 questions conducted to evaluate which factors affect mobile banking service users. The study applied Exploratory Factor Analysis (EFA). The six poor-performing items were removed from the original 25 items, and the 19 remaining items were assessed and grouped into four constructs.

These findings were proposed for factor extraction. Data inspection techniques for EFA are classified as Kaiser-Meyer-Olkin (KMO) (Dziuban & Shirkey, 1974; Kaiser, 1970) and Bartlett's test of sphericity (Bartlett, 1950; Dziuban & Shirkey, 1974). KMO values indicate sample adequacy while Bartlett's test of sphericity indicates the item's correlation matrix is or is not an identity matrix. KMO correlations of more than 0.7 was considered to be adequate for analyzing the EFA.

Kaiser-Mayer-Olkin and Bartlett's test of sphericity were conducted on the data, and the KMO value was 0.98 while the Bartlett test value was $p < 0.001$. These results are evidence of the sample's appropriateness (Hutcheson & Sofroniou, 1999).

Principal Component Factors

After analyzing the data using Principal Component Factors, the final factor loadings were obtained by merging variables which had relatively high factor loading values (over 0.5). Using the final factor loadings, four common constructs were extracted as shown in Table 2.

Table 2: The rotated component matrix and the four extracted common constructs along with the composite reliability for the 19 remaining variables

	Variables	Factor Load Matrix				CR	Extracted Common Factors
		G1	G2	G3	G4		
19	I am satisfied when using mobile banking.	0.779				0.956	Factor One: Attitude
17	I believe using mobile banking is a smart idea.	0.755					
16	I believe using mobile banking is trustworthy.	0.715					
14	I believe using mobile banking is reliable.	0.707					
13	I would not hesitate to try out mobile banking.	0.583					
12	If I hear of a new functionality for using mobile banking, I will look for an opportunity to try it out.	0.577					
20	There are benefits of using mobile banking.	0.519					
3	I believe using mobile banking saves time when paying.		0.817			0.940	Factor Two: Usefulness

Variables		Factor Load Matrix				CR	Extracted Common Factors
		G1	G2	G3	G4		
1	I find it useful to use mobile banking.		0.651				
5	I believe using mobile banking helps me pay faster.		0.531				
18	I like the idea of using mobile banking.			0.684		0.953	Factor Three: Intention
25	I intend to introduce mobile banking to others.			0.666			
24	I intend to use mobile banking instead of traditional forms of payment such as cash.			0.634			
22	I intend to increase my use of mobile banking in the future.			0.595			
21	I believe using mobile banking is interesting.			0.502			
23	I intend to use mobile banking when I have the opportunity.			0.501			
11	If compared to those around me, I was one of the first people to start using mobile banking.				0.769	0.909	Factor Four: Reliability
7	I believe learning to use mobile banking does not require much effort.				0.758		
15	I believe that using mobile banking is safe.				0.606		

DISCUSSSION

The first purpose of this study was to investigate the important factors driving the use of mobile banking services by people living in the eastern part of Thailand. The results, after applying a modified measurement model, consisted of four grouped-variable constructs: attitude, usefulness, intention, and reliability. The composite reliability of each construct was shown to be greater than 0.70. The factor loadings for each well-performing item were more than 0.50, while the factor loadings for poor-performing items were less than 0.50. The six poor-performing items were removed from the data. Table 2 presents the common factors, and each of the factors was assigned a label to show potential attributes of that individual factor. The second purpose of this study was to discuss managerial implications based on the research findings and to present suggestions to banking service providers so that they can improve mobile banking service performance for their customers. The four grouped-variable constructs which affect users of mobile banking services are discussed below.

Factor One: Attitude

Attitudes toward using technology can vary widely among individuals, and these attitudes are influenced by a wide range of factors. Technology is a broad term that encompasses everything from smartphones and computers to artificial intelligence and automation. Users' attitudes related to mobile banking and online payments have changed dramatically (Singh, Sinha, & Liébana-Cabanillas, 2020; Alalwan, Dwivedi, & Rana, 2017). Attitudes can also be influenced by psychological factors such as perceived control, self-efficacy, and perceived behavioral control. These factors can affect a customer's confidence in using mobile banking services (Ajzen, 1991). Attitudes of using mobile banking are based on the perceived usefulness and the perceived threats in terms of social relationships and banking performance. These perceptions affect people's intent of using mobile banking to make payments (Kumar, Dhingra, Batra, & Purohit, 2020). Past experiences with mobile banking can also shape attitudes. Positive experiences such as speed of response for customer support or smooth transactions can reinforce a positive attitude, while negative experiences can lead to skepticism.

Factor Two: Usefulness

According to Davis (1989), the degree to which a user believes that employing technology would increase one's utilization and performance is known as perceived usefulness. Mobile banking provides several advantages to both banks and their customers. Many studies have extensively looked into the value and effects of mobile banking on different facets of the financial industry and on the behavior of financial consumers. The usefulness of mobile banking can be measured by accessibility, convenience, cost efficiency, financial management, remote services, etc. The usefulness of digital banking in general can be explained by the ease of transactions. For example, an online request for a monthly e-statements, a check draft, or an online payment can enhance bank performance, save time, lower costs, and improve the effectiveness of banking services (Abdennebi, 2023). With mobile banking, many transactions are processed instantly or within a very short time frame. This rapid processing is especially beneficial for urgent payments or cash transfers. Further, mobile banking users can easily access detailed information about their accounts, including transaction histories, interest rates, and account statements. Easy access to these types of financial information helps bank customers make informed financial decisions.

Factor Three: Intention

A wide-scale shift from regular banking at branch locations to branchless mobile banking has occurred over the past several years. The intention of using mobile banking can vary from person to person. However, the intention generally involves leveraging the online banking services provided by financial institutions for various personal benefits. In order to improve bank services and then to properly market those services, financial organizations should work to understand the aspects affecting people's intentions to utilize mobile banking. With mobile banking, financial institutions can reduce operational expenses while retaining and even increasing customer satisfaction for those people who choose to use mobile banking (Abu-Taieh, AlHadid, Abu-Tayeh, Masa'deh, Alkhawaldeh, Khwaldeh, & Alrowwad, 2022). The study of Abu-Taieh et al., 2022 also claimed that mobile banking customers' behavioral intentions were driven from effort expectancy, performance expectancy, perceived risk, social influence, trust, and service quality. Clearly, users' intentions are influenced by a complex interplay of factors. Therefore, understanding those factors is necessary for banks and other financial organizations to tailor their services and marketing strategies effectively.

Factor Four: Reliability

The reliability of mobile banking is a critical aspect of the service because it directly impacts the trust and confidence of customers who choose to make online financial transactions. When users are inspired to trust in others through gratifying behavior, an emotional stat is created (Singh, & Sinha, 2020). Product or service reliability helps marketers to build positive and long-lasting customer relationships, which are critical for technology adoption (Partel, Kakarla, & Ampatzidis, 2019). The factors that could contribute to the reliability of mobile banking are data security, fast transaction processing, accessible

customer support, user-friendly interfaces, anti-fraud systems, and backup/recovery systems. A robust security system is one of the most essential components that can protect customer data from cyberattacks. In addition, reliability of mobile banking includes prompt, responsive user support services that can help users with various inquiries. User-friendly interface designs and easily platform navigators help to reduce user errors, which in turn increase overall reliability.

CONCLUSION

The conclusions drawn from this study on the factors influencing the use of mobile banking are multifaceted, and they are based on the analysis of four main variables: attitudes, usefulness, intention, and reliability. First, positive attitudes were associated with higher adoption rates. In contrast, negative attitudes acted as barriers to mobile banking adoption. Second, mobile banking users are more likely to embrace mobile banking services if the users find the services to be beneficial in terms of saving time, providing easy access to account information, and enabling efficient bank transactions. Third, understanding the factors that drive intent is key to predicting adoption rates. Fourth, users need assurances of security when their personal information and banking transactions are handled by digital services. Understanding these dynamics can improve strategies intended to encourage greater mobile banking adoption as well as improve overall user experiences for mobile banking customers. Further research could explore how these factors evolved over time and how they apply across different demographic groups. Resulting additional understanding could help financial institutions to refine their strategies for promoting online banking services.

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Contribution of Social Entrepreneurship for social and economic development: A case study of young female social entrepreneurs in Thailand

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ABSTRACT

This study aims to focus on the trend of social entrepreneurship in Thailand, especially for young women social entrepreneurs. This research paper explores the contribution of social entrepreneurs in community, social and economic development, as well as the impact on their personal, community, and policy levels. This research used a case study methodology. Primary data were collected by conducting an in-depth interview, and direct field observation with the selected two case studies led by young female social entrepreneurs, Seeds Journey and Folkcharm. Secondary data were obtained from documentation reviews, national and international journals related to social entrepreneurship, newspapers, and related websites. According to the findings, the impact of young women-led social entrepreneurs in their community is very crucial, and they are working on deep-rooted issues that the community is facing at the current time targeting the young to old age group population. Both case studies show that young founders with a leadership mindset are essential for sustainable social entrepreneurship. Tackling issues such as youth unemployment, cultural promotion, and protection, sustainable living and clothing as well as contributing to advance people's lives and favoring the state policy by helping society to grow financially independent.

These findings establish a foundational basis for future scholarly pursuits, particularly in fostering social entrepreneurship among the emerging demographic of Thai youth. This study not only contributes to the academic discourse on women's roles in social entrepreneurship but also sets the stage for informed initiatives aimed at cultivating a socially conscious leadership ethos among the youth in Thailand.

KEYWORDS: Women-Led Social Entrepreneurship, Social Entrepreneurship, Thai Young Social Entrepreneurs, Social and Economic Development, Women Empowerment

INTRODUCTION

Entrepreneurship has been viewed as a crucial contributor and a useful economic instrument to the growth of nations (Bosma et al., n.d.). Whereas social entrepreneurship has gained popularity as a business concept as it combines social and business components. According to (Talbot et al., 2002) social entrepreneurship is the process of starting new businesses with the goal of bringing about social change. Society and the organization both have increased complexity. A social system that was in place previously is no longer able to meet the needs of families, society, or the nation (Boyatzis et al., 2005) While traditional employment will continue to play a key role, providing proper guidance for entrepreneurship will also be an important part of allowing youth to join the formal economy. However, the definition of social entrepreneurship varies depending on the setting, both in industrialized and developing nations. Studies of social entrepreneurs and community-based cooperative social groups that imitate commercial enterprises have served as the primary sources for the discourse in social entrepreneurship research (Nicholls, 2010).

The supply of public goods and social/environmental services could change as a result of social entrepreneurship, according to a third strategy from the standpoint of social innovation (Nicholls, 2008). Most academics view social entrepreneurship as a creative strategy that employs business principles and instruments to bring about social or environmental change for the good of society. The term "social

entrepreneur" refers to individuals who work to improve the lives of others by connecting them to resources and support. Ashoka's founder, Bill Drayton, views social entrepreneurs as influential figures who can make a lasting impact on society and serve as role models. Ashoka aims to form long-term partnerships with social entrepreneurs to support their career goals and endeavors (Holmstrom, 1999). Also (Kuratko, n.d.), states that social entrepreneurs are leaders of change agents for mega changes. They manage and handle the root cause of social problems. They change systems with new ideas and persuade people to join. The range of population age distribution changes for a demographic transition and beyond, and levels of income per capita will change correspondingly (Bloom & Finlay, 2009).

On the leading edge of entrepreneurship globally, young women now outnumber men as founders or business owners (Terrell & Troilo, 2010). In meeting societal needs, female entrepreneurs have a significant impact. Young women may now have more influence over the operation of social entrepreneurship as a result of the persistence of social and economic issues, which has perhaps empowered them. However, social entrepreneurship is a diverse field, and although women are increasingly participating in it, there has not been enough research on the subject. Studies have shown that women place a strong emphasis on prosocial ideals and behave with an "ethic of care" (Bampton & Maclagan, 2009). And this may help to explain the significant role that women play in social business. The possibility of social entrepreneurship to enable women to be change agents in their own lives and communities is also coming to be more generally acknowledged (Cherrier et al., 2018).

It is critical to comprehend the effects of young women entrepreneurs on the broader economic environment as they become more prevalent. In particular, this study focuses on how young Thai women are becoming more social entrepreneurs and how their initiatives are contributing to the economic empowerment of women. This study intends to shed light on the distinct opportunities and problems faced by young women-led social entrepreneurs, and how their initiatives are aiding in the creation of a more equal and sustainable future for all women, through in-depth research and analysis. This study will inspire more young women to follow their passions and have a significant impact on their communities by exposing the achievements of these thriving businesswomen.

RESEARCH OBJECTIVE

To study the contribution and impact of young women in addressing societal and economic challenges within the context of Thailand.

LITERATURE REVIEW

Entrepreneurs serve as an agent of change, socially and economically. Social entrepreneurship starts with a social mission and social innovation. Social entrepreneurship activity generally is a combination of social mission and business activities for economic development and at the same time, it also focuses on creating social value (Mair & Martí, 2006). However social entrepreneurship occurs in or around the non-profit, business, or government sector but the concept of social entrepreneurship activity has a different meaning to everyone in a different context, like in a developed country context and a developing country context. A social entrepreneur is an innovator of social change, who addresses social issues and implements a new business model. Social entrepreneurs convey a social message and a new value to the market through their growing support, leading to new norms in the market. Since the second half of the 80s, in the United States, the word "social entrepreneurship" has become more popular in the nonprofit sector. That means nonprofits have had to adapt to the changing market society and had to incorporate new business management techniques and skills. Many papers have emphasized the innovative function of social entrepreneurship (Drayton & MacDonald, n.d.).

The discourse of social entrepreneurship research has largely been grounded by first, studies of the social entrepreneur and second, the community, and cooperative social organizations that emulate enterprise and commercial business (Nicholls, 2010). A Third approach is a social innovation perspective that proposes "social entrepreneurship as being a process of change in the delivery of public goods and social/environmental service (Nicholls, 2010). Most scholars have seen social entrepreneurship as an

innovative approach using business concepts and tools to create social or environmental change for the positive benefit of society.

1. Social Entrepreneurship in ASEAN

In the context of the Association of Southeast Asian Nations (ASEAN) member states, social entrepreneurship is identified in many countries, like Malaysia, followed by Indonesia, Thailand, the Philippines, Cambodia, and Vietnam. Small business in Asia. In most ASEAN countries social entrepreneurship functions as per their social need and social issue. For example, Malaysian social entrepreneurship mostly focuses on women empowerment and the education sector; they have programs like the Women in Social Entrepreneurship (WISE) program that has been effective in promoting social entrepreneurship among students by generating participative engagement among students in socially entrepreneurial ventures created and run by women entrepreneurs. In Cambodia, gender equality, financial inclusion, and education are the most priority issues that social entrepreneurs and other social enterprises are working on. There are social enterprises in Cambodia, which elaborate innovation in educating and training poor and vulnerable youth in skillsets necessary for livelihood, thereby reconceptualizing skill development in a new way.

According to the ASEAN Policy Index 2018, it discusses that many ASEAN member states recognize that youth entrepreneurship can be a policy tool for addressing youth employment, social inclusion of disadvantaged youth, and informality within the labor market. They also recognize that young people can create high-growth business ventures that may contribute to economic growth through innovation and job creation. There are some ASEAN member states that have dedicated policies for youth entrepreneurship. These include Cambodia's National Policy on Youth Development, in which entrepreneurship is a strategic area, Indonesia's Grand Design for Youth Entrepreneurship Development; Philippines Youth Development Plan; and Thailand's Youth and Children Development Plan 2017-21, which identifies entrepreneurship as a means of engaging youth outside the formal labor market and as well as in Malaysia, youth entrepreneurship figures in several strategic documents, including in Malaysia Youth Strategy and the national development plan. Likewise, Asia and the Pacific region include some of the wealthiest and least developed countries in the world (UNDP).

2. Social Entrepreneurship in Thailand

Social entrepreneurship is now booming in developing countries. The concept of social entrepreneurship revolves around the idea of unraveling the social problems in society by helping them and giving them an opportunity. Even though Long before social enterprises gained international recognition, revenue-earning, and self-sustainable organizations with a clear social mission existed in Thailand (Chhina et al., 2014), for Thai society, the enterprise and social entrepreneur concepts seem to be new discourses. However, they are not completely new if considering the old concepts, particularly in the social movement of social activists (Chhina et al., 2014).

From street vendors to motorcycle taxi drivers to freelance internet entrepreneurs to small mom-and-pop businesses, Thailand has one of the largest informal economies in the world. This sector is a critical source of jobs for the less poor or less educated, and for people who want to be their boss (Baxter et al., 2016). When we look back to the starting history of Thailand's relation with the sustainable economy the Philosophy of sufficiency economy concept plays a major role. The philosophy of sufficiency economy (SE), was proposed in 1974 by His Majesty King Bhumibol Adulyadej of Thailand as an approach to incorporate sustainability in the Thai economy (Suwanraks, n.d.). His majesty defined sufficiency as "a state of being that enables individuals, families, organizations, and nations to enjoy, at a minimum, comfortable existence and, if conditions permit, a reasonable degree of luxury that balances economic, social, environmental, and cultural conditions". In Thailand, sufficiency economic philosophy had been adopted as a guideline in formulating National Economic and Social Development Plans, which is in line with "sustainable development, the key principle of post-2015 Development agenda, and can be adopted by any country at different levels of development was introduced in the exhibition on "Sufficiency Economy" (U-tantada et al., 2016).

In addition, Thailand's national plan led also to the establishment of TSEO as a government agency to promote social enterprise networks in 2010. Which works on financial sustainability, revenue

from business activities cannot be allocated more than 30% on the dividend. In terms of governance, registered SEs has to submit annual report to their regulatory busy and make their information public.

3. Youth-led social entrepreneurship in Thailand

The concept of youth-led entrepreneurship or engagement- which can be understood as a youth taking responsibility for creating benefits for society and the world encompasses attitudes, behaviors, knowledge, and skills of individuals and organizations by engaging youth in a specifically directed course of actions, which may occur in any number of type or topic (Lenzi et al., 2012). In recent years, attention to youth has increased than before.

The rise of globalization and digitalization which is paired with the current social challenges shows the way out in the field of social entrepreneurship. According to (Kruse, 2015), the author defines Youth social entrepreneurship very properly, Youth social entrepreneurship (YSE) is a youth-designed, youth-led business or community social initiative that is supported within a framework of intergenerational participation. Youth social entrepreneurship practice is a transformative asset-based model of youth development. It includes the development of entrepreneurial thought, business skills, and community engagement where youth often earn money while sparkling personal development. According to another author (Galloway, 2009), his analysis of young people's business, can be seen in the fact that it is individuals have certain innate characteristics; some people can attract others and inspire them to work together, to the inner self-motivation are by nature curious and respective to innovations. Shastri, Kumar, and Ali (2009) state that young entrepreneurship is important not only at the level of the individual but also society, the global level, because what through its initiative, skills and ability to create innovative ideas for a young person to contribute not only to their quality-of-life improvement but also to the general quality of life in their society.

Youth social entrepreneurship programs aim to channel skill, determination, and creative thinking with a desire to economically advance youth and their communities (Wagner, 2013). When we look at the current phenomenon the pattern of the labor market is changing from time to time.

Another reason for changing into the working-age pattern is, the rising number of unemployment and underemployment among people. In Asia and the Pacific, there are still millions of employees who receive a wage but lack employment benefits and have little job security (ILO Asia-Pacific Employment and Social Outlook 2018). Young people are no exception to this fact. The main catalyst for social entrepreneurs in Thailand is the growing inequality in Thailand due to disparity in financial, health, and educational resources among the diverse demographic population.

4. Young women-led social entrepreneurship

Women can contribute to the general economic advancement of their communities and societies by tackling these issues. Women have a crucial role to play in social entrepreneurship when it comes to tackling economic problems like unemployment, inequality, and poverty. Women social entrepreneurs are frequently more inclined to concentrate on developing inclusive and sustainable economic possibilities that can help underserved populations (Abbas et al., 2019). In recent years, scholars have also explored topics such as the role of technology in promoting women's economic empowerment and the effects of cultural norms on women's participation in social entrepreneurship. For example, (Rasyid & Bowen, 2021) conducted a study on the use of social media by women entrepreneurs in Malaysia and found that social media can enhance their visibility, access to customers, and access to finance. Similarly, (Bullough et al., 2022) conducted a study on women's social entrepreneurship in Greece and found that cultural norms and gender roles can affect women's decisions to become social entrepreneurs.

Furthermore, women's empowerment can have a positive impact on their families and communities, as increased economic and social power often leads to improved health, education, and living standards for both women and their children. Women social entrepreneurs have played a crucial role in promoting women's economic empowerment and addressing social and environmental challenges. Scholars have highlighted their potential and the need for greater support for women entrepreneurs.

Women's involvement in social entrepreneurship has the potential to address and eliminate the gender gaps that exist today. The social entrepreneurship sector has demonstrated a special talent for empowering women to take on leadership roles and for improving the lives and general well-being of

women (*Why Empowering Female Social Entrepreneurs Is Key to Economic Recovery*, 2021). The 2018 Global Impact Study by Ashoka found that its female Fellows are more likely to work within systems and spread their ideas locally, encouraging replication by other organizations or groups in their nation. Additionally, it was found that female fellows were more collaborative, working closely with other public-sector organizations, helping other women and young people in their immediate community, and creating their own teams. Additionally, they demonstrated a greater willingness to alter attitudes and behaviors: 76% of female fellows, as opposed to a lower percentage of male fellows, said altering cultural norms and societal attitudes was a key element of their plan.

Moreover, the innovation that has emerged through information technology allows many to seek opportunities for social entrepreneurs in Thailand to develop in order to help those in need where the market fails. Social entrepreneurship has distinct characteristics in various regions of Thailand (*Social Innovation Ecosystem Study (Thailand) - Revised.Pdf*, n.d.). For instance, women in northern Thailand, the focus is placed on preserving the local culture and creating job opportunities for the poor and minorities in the community through the promotion of handicraft products that involve local manufacturing skills or other products that demonstrate the community's cultural and religious values. Instead, social entrepreneurship in the South concentrated more on environmental problems in the form of beach and coral reef restoration, as human activities such as fishing, coastal tourism promotion, and waste disposal have a strong negative effect on the region's marine ecological balance. As for the Northeastern region, the main concern is agricultural issues. To cope with the rapidly changing market conditions, priorities are given to solving the poverty problem of farmers and improving productivity and the variety of agricultural products.

Changing society to raise new demands as a human way of life requires the ability to adapt to the new pattern which seeks to change society from different levels. The range of population age distribution changes for a demographic transition and beyond, and levels of income per capita will change correspondingly (Bloom & Finlay, 2009). For example, demographic change accounts for as much as a third to a half of the mystery surrounding the sustained high rates of income growth that came to be known as the East Asian miracle during 1965-90 the working-age population of East Asia grew nearly ten times faster than the dependent population (Bloom & Finlay, 2009). But a recent World Bank report shows that many countries in the East Asian region are worrying about losing as much as 15 percent of their working-age population by 2040 (Choudhury, 2015) So now to tackle the crunch in East Asian labor markets, the World Bank recommended policies such as encouraging more women to join the workforce, reforming existing policy to empower the young generation to take responsibility. From this example, we can analyze that, it's time to give youth a chance to be a part of the global economy.

RESEARCH METHODOLOGY

This research uses a case study research approach. It is an explanatory case study research, The explanatory case study method helps to discover and analyze the many factors and conditions that can help to build an explanation for the case (Berg & Lune, 2017, p. 176). The case studies are from two different provinces in Thailand; i) Seeds Journey from northern Thailand, and ii) Folk Charm from Loei province. These two cases were selected because. The cases are determined and categorized as to how they are contributing to their society to solve current social and economic problems. The criteria are important because they ensure that ventures are still led by young people or individuals and also ensure that all three cases have a systemic level of impact on their personal, community, and policy levels, which helps to do a comparative study. In addition, the criteria also help to find an entrepreneurship venture that has the potential to have an impact on their work. So, both cases are selected based on the following criteria.

- the ventures are founded by young founders aged between 18-35
- The leaders of the organization are young people
- they are actively working in the field of sustainable development goals;
- Both cases are working on different social and economic issues in Thailand, those are 1) seed preservation and eco-tourism in the ethnic community, 2) Local craft promotion and opportunity for the elderly.

- Social entrepreneurship ventures which were established independently.

Data were collected through both primary and secondary methods. From both non-structured and semi-structured "in-depth" interviews with key informants who are the founders of both case studies. The researcher was able to gather the main data and important aspects of the research. The interview of the study started with questions related to their social entrepreneurship venture and their personal experience while starting the project. This research is carried out as action research, so field observation was conducted to observe ongoing youth-led social entrepreneurship venture activity. A researcher is involved in all stages while on the site, like, meeting with community people, in Chiang Mai Loei province and tasting food, homestay, and close interaction with the community people, aunties, and others related to each case.

Secondary data was collected and combined throughout the several stages of this research. For this research, the secondary available data plays a big role because of the pandemic, the researcher could not follow up with the key informants after visiting them, because when the lifestyle in Thailand went normal, they started to do their work and started to participate in different programs and exhibitions. So, by reviewing the articles related to those cases, following their activity through an online platform, and regularly visiting case study websites, the researcher was able to get more information about their work after the meeting. This research also includes a review of the national and international journals related to social entrepreneurship, management books, information from magazines, newspapers, case study websites, and reports, a review of an existing policy, and a different research paper.

DATA ANALYSIS

After checking for the completeness of the survey questionnaire, the data was interpreted and proceeded through descriptive statistics, which were applied including frequency, means, and percentage of responses from the questionnaire survey that help to understand the impact of youth-led social entrepreneurship ventures in their community. Multiple-choice questions and graphical analysis were used to get information related to the impact and contribution of youth-led social entrepreneurship in their community.

Qualitative data analysis's presentations are described in narrative and quotation, opinions, and explanations about youth-led social entrepreneurship from the young founders. The contribution they are making in the community is explained using three different levels, individual, community, and policy. All these factors were compared in both cases and variables related to each case.

The Comparative Case Study Analysis

The transformed written text and audio were utilized into vary of themes from every expression of the respondent's idea whether it was a single word, a phrase, a sentence, a paragraph, or an entire document. Then utilized content from three different case studies then categorized and compared between the cases. In the last step, the researcher draws a conclusion based on the result finding with the frequency of repetition of the answer and clear reason from related case study research.

RESEARCH FINDINGS AND DISCUSSION

The sector of young Thai social entrepreneurs that are working and operating is quite diverse, including agriculture, IT, communication, education, eco-tourism, public health, clothing, and consulting services. Society these days is dealing with many social problems such as education inequality, poverty, unemployment, elderly care, and so on. Hence, social entrepreneurship plays the role of a problem-solving agent even if they are started as a small business but with a focus strategy, including a cost-effectiveness approach. Thailand is home to mediators such as Change Fusion, Ashoka Thailand, and NISE Corporation who work as capacity builders to inspire social enterprise start-ups and development. Social ventures aren't new to Thailand, however, developing disparity in the country has energized the public enthusiasm for social endeavor as a method of conveying both positive social effects and economic development.

Seeds Journey and Folk Charm are grassroots initiatives promoting economic empowerment. Seeds Journey trains young social entrepreneurs in the indigenous community, while Folk Charm empowers rural artisans in the northern part of Thailand. Research shows that young women social entrepreneurs play a critical role in driving economic growth and development, prioritizing social and environmental impact.

These initiatives demonstrate the potential of young women social entrepreneurs in promoting economic empowerment and sustainable development, creating economic opportunities, and contributing to a more equitable society.

1. Youth Social Entrepreneurship Case I: Seeds Journey

Seeds Journey was founded by 29-year-old Nam-Kalyachemu from the northern Thailand province of Chiang Mai. Chaing Mai is known for its unique food and culture, different tribes, and hilly landscape. (Dearden, 1991). She grew up experiencing the local eating style that has been taught since childhood. But with the modernization of culture, she started to notice their authenticity slowly fading down which she was familiar with in childhood from her grandparents. She noticed the gap between generation to generation and the lack of proper knowledge in authentic food and seeds, which motivated her to start something to preserve and break the gap between old and new generations in food and seed culture.

Nam believes that *"the education that we receive outside of the classroom is crucial for young people. Because it teaches them to return to their communities and create a narrative so that people from other communities can be aware of what's going on, what they're capable of, and what are the next steps".*

Seeds journey started working not only from the cultural aspect but also bringing the innovative idea to protect and promote their food and identity to the people around Thailand. Seeds journey helps to promote the potential of the local strength and promote eco-tourism, and smart agriculture from which they become the initiators who drive the creative economic growth. Seeds Journey wants to bring together young indigenous people like themselves and use their knowledge to develop their communities, create employment, and preserve their culture and traditions.

To answer the question, what was the initial impression or challenges for the seeds journey, she added

"The community was itself not interested in bringing local ingredients or dishes as part of their food,"

Founders represent the indigenous Akha Ethinc community, who live primarily in Chiang Mai province, especially at Pa Kia Village which is approximately 80 km from the main city of Chiang Mai ("Akha Hill Tribe - History and Culture," n.d.). From 2015 to collaborate with the young generation in local communities to preserve local send wisdom through innovative products and services such as applying local elements to the chef-table, creating branding for local products, promoting local food culture and seeds, and promoting the concept of eco-tourism by the homestay.

To answer the, how do you think of connecting youth in the community as a young person yourself, founder answered:

Food is something that holds the community together, and culture alive, so we thought of giving modernized concepts by adding homestay, ecotourism, and creative crafts concepts, which helps to attract youth in the community to be part of.

Seeds journey works collectively with the Akha ethnic community mostly with the younger generation. Seeds journey aims to make the younger generation more aware and knowledgeable about their own culture and heritage. The founder of seeds journey believes that the younger generation especially those aged 18 to 30 young people are now becoming more responsible and also more curious about their culture, uniqueness, and history.

2. Social and economic impact of seeds journey

Seeds journey Create a business model that wants to change the mindset of the new generation. To preserve the environment and promote sustainable tourism in the ethnic community seeds journey play a vital role in the Akha and pa-kai community in Chiang Mai. The communities needed a chain to grow within and the seed's journey fulfilled that gap by being a change agent for the people in the community. Social entrepreneurship is considered an important social innovation that helps to provide strong solutions to many of the social and economic challenges in the community, likewise, Seeds journey worked together with the villages and create a video for the local TV channel which promotes eating and food culture in the

ethnic community. Even though the community is small they were able to protect their culture with the help of older people in the community, which was beneficial for the villages themselves.

Seeds journey now not only focuses on food and seeds preservation but also, on promoting handicrafts, promoting the concept of homestay, protecting the environment by eating seasonal food, and harvesting honey from the jungle. They collaborate with environmentalists and bloggers, from which they educate other people on the importance of culture, surroundings, and food. Besides fostering the value of food and culture, the seeds journey also wants to foster sustainable business, to help and strengthen the community.

Social entrepreneurship and social entrepreneurs harness innovation at a systematic level to bring change in their society (Bruin & Ferrante, 2011). Seeds journey uses the approach to include the mission aspect in the community to make a difference in the lifestyle of an ethnic community.

To erase the doubt of, how seeds journey starts gaining trust from society, she added;

"*After we started this project for a while, we started inviting children. To make a short drama media to convey the stories of food in the nearby community. From which they start getting interested in our work.*"

Seeds journey wants to foster a sustainable business, as well as they want to strengthen the community from within. They change the concept that the young generation is not into the traditional way of preparing and growing food. Seeds journey not only focus on them or on their business but they focus on the rest of the community, to communicate and create an understanding that the local ingredients are not just about food but it means their culture and way of life; related to their surrounding and nature.

3. Youth Social Entrepreneurship Case II: Folk Charm

Passawee T. Kodaka, the founder of Folkcharm in Bangkok, holds a Master of Science in Rural and Regional Development Planning with a focus on the social empowerment of home-based women workers in rural Thailand, backed by a case study on a silk weaving community. She possesses over six years of experience in international and national social development organizations.

Folkcharm operates in the rural communities in Loei province in northeast Thailand intending to promote sustainable and ethical fashion in Thailand by using local hand-woven culture. The core value and philosophy of Folkcharm is respecting crafts from the community and people. The group of people Folkcharm works with is an elderly group of people from the village, with an average age of 52. Folkcharm wants to prove to the younger generation that, the craft is an art it is worth conserving and can be an income-generating activity that allows earning sufficient income without migrating to the big cities. Why folkcharm start working with the elderly group of people, to answer that:

The founder mentions*, "Our initial target, the younger generation, is less interested due to their low income. We're shifting our focus to the older generation seeking income opportunities. Collaborating with schools and universities could bridge the gap, but it's challenging for young people to enter the craft or social enterprise immediately after education."*

The products are crafted by rural communities where they work together with them under an honest cost structure and in return for their work, the artisans receive a return for their skills and techniques rather than settling for an amount sellable where loss is often the case. Folkcharm crafts patterner with natural cotton farmers, artisanal communities, and local craftswomen to present apparel and products with the right blend of contemporary living and traditional wisdom. Their textile is known for hand-spun yarn, handloom process, and local techniques of natural dyeing.

4. Social and Economic Impact of Folk charm

On the other hand, Folk Charm creates social change by using wisdom from the community. The fashion industry is the second-largest polluting industry in the world after the oil and mining industry and its effect on the environment is growing day by day. Likewise in Thailand, in 2014 it was considered a major exporter of clothing, and it is home to 2,000 clothing companies which are mostly located in Bangkok and eastern regions (Fashion revolution Thailand, n.d.). Folkcharm works directly with over 30 elder weavers and indirectly 10 elderly yarn hand-spinners from 5 villages they started off with just two tailors

to now about eight home-based tailor seamstresses and craftswomen in Bangkok. Folkcharm focused on people who are a little bit in an elderly sphere, so they are about 40 plus. The work of weaving cotton and making fabric is very skill intensive and it takes a very long time, so in this aspect, they use a lot of elderly who work from home, and they can easily spend to send the yarns to the younger weavers to weave the cotton.

Folkcharm focused and started with these key social issues and then once they started to work on this project, they realized that there are a lot more drastic environmental issues such as intensive chemical farming of cotton because of other cash crops in Thailand especially in the northeastern part of Thailand. Many fashion and crafts products brands came out, so they use the word "greenwashing" to come out as an ethical brand. Folkcharm also brands itself as an ethical business. Ethical business culture is associated with a structure that provides for equally distributed authority and shared accountability (Trevino et al., 1999).

Folkcharm believes in the co-creation process helps to give them the authority on the product and respect for the wisdom that is already in the community. Folkchram believes that the true value of products should be reflected through the stories behind them and vice versa so they focus on great products and good products with the great stories and connecting the great story that is part of the good product.

To answer the question, how do you make sure that your brand connects consumers and makers,

She added the *"I made your clothes" concept in every finished product of Folkchram to upgrade authenticity and attachment from consumers to the brand.*

Social entrepreneurs are leaders with a vision, that inspires others, mobilizes, and stays attached to the people, and uses a strong message to mobilize the resources (Theis, 2006). Folkcharm on the other hand believes in the co-creation process of empowering the wisdom that is already in the community, they work with the artisan very closely, from choosing patterns, designs, and colors to telling the story behind their work.

5. The contribution of young Thai women-led social entrepreneurship in solving social and economic problems in Thailand

Social entrepreneurship plays an important role in alleviating the serious social problems of vulnerable individuals and helps them to build lives that are not just for survival but also an expression of their potential as conscious citizens of their country (Seelos & Mair, 2005).

The below table summarizes both of the cases and their contribution to their respective community towards solving social and economic problems.

Table 1: Contribution to individual, community, and policy level

Individual	Community	Policy
• Personal development • Sustainable income • Self-efficiency • Networking with fellow entrepreneurs	• Youth empowerment • Culture protection and promotion • Value added product • Agriculture development • Tourism promotion • Promotion and protection of culture • Women/ elderly empowerment • Promote healthier lifestyle • Knowledge transfer	• To achieve sustainable development goals; • Community development; • Environment protection; • Promotion of Indigenous rights and potential;

Seeds journey is a social venture started by youth for youth. Seeds' journey contributes to a very particular aspect of people's lives in the ethnic community. After starting the seeds journey, she was able to get connect with people who care about nature, food, and culture. By attending the program at Youth Co: lab 2018, the seeds journey was able to bring people to a place and were able to show them how can sustainable food and eco-tourism contribute to achieving sustainable development goals in many aspects.

For community Seeds journey link, the local village to a new customer. Communicate with community and hotel owners to learn how to make a value-added product, and how to make sustainable food. Even though the knowledge was already there in the village, seeds journey tried the knowledge transfer process and increased the marketing channel which increased the demand for products, and also found the people who add value to their work. Seeds journey collaborates with other social entrepreneurship organizations, and from that, they were able to partner to sell and promote the local product by making an interesting package for their product which helps to attract customers.

Folkcharm is one of the comprehensive examples of a Thai social entrepreneurship venture. We live in a time when our environment is filled with toxic and man-made problems. From the clothing industry to the food we eat, all are influenced by the fast-growing industry, which affects the way of life of human beings more and more every day. Folkcharm is becoming the one that brings the main problem in front of people and finds the solution within, even though at a very small level, Folkcharm is contributing much more to the people's lives in the three different villages at Loei.

On the other hand, they organize the tour and start getting a lot of foreigners and urban Thai people to visit them and they feel empowered through communicating and being able to express their craft to those people, In the economic aspect, when the community starts working with the folkcharm their Income increased by 30 to 50%, and since 2016 they have generated more than 4 million Thai Bhat brought back to the communities. Folkcharm works towards protecting and promoting the traditional way of life, reviving the craft of natural indigo dyeing, and improving the local livelihood through the introduction of embroidery to the young generation in the village. Folkcharm creates social harmony and togetherness among the community through their work and the responsibility of Folkcharm towards the community increases day by day.

6. The overall impact of young women-led social entrepreneurship in Thailand

Social entrepreneurs devote their time, risk their capital, and create their resources to move their way on the ground. They dig into critical social issues, find innovative solutions, and mobilize resources as well as communities to address pressing problems in the country (Peredo & McLean, 2006). The impact that social entrepreneurs make is more effective than the work public institute is trying to make. Public institutions, however, have their limitations on experimentation, and flexibility, especially when it comes to creating customized solutions for individual vulnerable populations (Teerakul et al., 2012).

In Thailand, the concept of social enterprise/ social entrepreneurship came to the discussion 10 years ago, since then many efforts have been made to promote social enterprise, but on the other hand organizations like ChangeFusion, Ashok, UnLtd Thailand and recently UNDP and other INGOs are involve to promote early-stage social entrepreneur, which is become the main drives for young entrepreneurs (Le, 2019).

In the cultural sector, seeds journey and folkcharm conceptualized the idea that is suitable for each community. Both entrepreneurs come from three culturally different parts of Thailand, the approach they are using is different but the impact they are making in the community is similar. The work they are doing on the ground has been deeply recognized and acknowledged by the people in the community, which was because of the trust they earned from the community by continuously engaging with them and working with them. Folkcharm works with an elderly group of people especially aunties and grandma in the community, by using an innovative approach, using modern knowledge, and giving them the value of their work; which gives those aunties and grandma a sense of independence, makes them proud of their own culture and increase their livelihood and sisterhood between the community. Seeds journey works with the younger generation in the community by being a platform and being a voice for them, it gives them financial stability, encouragement, inspiration, and motivation to work for themselves and their community.

Social entrepreneurs can accelerate development (Dees et al., 2004). To fully address the needs in the community and alleviate harm to vulnerable communities, young social entrepreneurs need long-term, open support and reimagine a system that addresses issues rather than intensifies them. Supporting them will ensure that they have the necessary resources to work for the long term.

7. Similarities and differences between the two cases

Young women-led social entrepreneurship is able to bring the realization of the importance and necessity of promoting their culture, tradition, and safe environment in their community. They raise awareness for the change in people's consumption behavior and increase knowledge about sustainable consumption, economic growth, and social harmony in local communities. This social entrepreneurship not only helps the community but also social entrepreneurs themselves to increase interpersonal skills, communication skills, networking ability, and confidence. They all want to build community trust, expand their work, collaborate, and promote to the people around them. They get motivated by community support and want to solve social problems. Youths need collaboration from the community to sustain and make their work successful.

Folkcharm and seeds journey are both of social entrepreneurship ventures focused on raising awareness of unsustainable living patterns, They inspire change in consumer and industry behaviors to be more responsible and supportive towards local farmers, crafts, and traditional knowledge by innovation. Both women-led social entrepreneurship ventures become the voice for unheard people and provide people a platform to make their financial status a bit stronger by doing what they have been doing for years. The collaborative approach of working with both the young generation and old age groups in the community helps both social entrepreneurship ventures to make their work more sustainable. The unique style of the working culture of seeds journey and folkcharm also helps to make sustainable income generation for the community.

CONCLUSION AND RECOMMENDATION

The research outlines the brief experience of two different youth-led social ventures and their impact and contribution. The study also demonstrates the impact survey from the stakeholders who are directly and indirectly related to the particular youth-led social venture, by doing so, this research finds out the key factors in a youth-led organization that makes a direct impact. Working towards the main issue that the community is facing at the current time, youth empowerment, cultural promotion, and protection. The study's research design is limited to only three social entrepreneurship cases offering services in the Thailand context and does not examine social entrepreneurship which is run by age more than 35.

The findings of this study show that young women-led social entrepreneurship venture makes a visible impact in their communities. The field of social entrepreneurship has attracted huge attention from various sectors in society and although social entrepreneurship is not revenue-oriented in Thailand, they were able to make a balance between making an impact in society and upgrading people's financial status. They contribute to sustainable economic and social changes and empower communities rather than make them dependent on funding and depend on themselves. There are various social, and economic challenges faced by marginalized communities, and young founders like seeds journey and folkcharm address the big gaps and create opportunities in the community for youth and older populations within the entrepreneurship ecosystem. Social entrepreneurs aspire to create positive societal change and sustainable impacts, necessitating community support and collaboration. Government organizations, particularly in Thailand, should enhance support for youth-led social entrepreneurship, fostering partnerships with international organizations and private stakeholders. Education institutes play a vital role by increasing educational and training programs, introducing social-related curriculums, and providing opportunities for volunteering and internships in the social sector. This hands-on experience not only elevates students' entrepreneurial skills but also cultivates empathy and a deeper connection with society.

Further research aspect in the area of youth-led social entrepreneurship

Further study should be placed in a specific area of social entrepreneurship and its concept in the Thai context. While conducting the research, it was difficult to find a social entrepreneur who was not influenced by the big social sector or CSR concept. There is a different factor that pushes them to be social entrepreneurs rather than just capitalizing on social work. There are different objectives and completely different definitions that make the social entrepreneurship concept stand out, Thai culture has a lot to contribute to the booing of social entrepreneurship, especially for the younger generation which deserves a profound study and proper explanation. Further study should do a comparison of the concept of social

enterprise, social sector, and current social entrepreneurship concept, especially with regard to the area and eco-system related to social entrepreneurs. The concept of social entrepreneurship is diverse in many ways, and so are sustainable development goals, so for future research, a proper comparison and its impact on SDG would be great to understand the deeper ecosystem of social entrepreneurship. In addition, some of the universities just started to initiate a study on the field of social entrepreneurship, like Global Studies and Social Entrepreneurship (GSSE) at Thammasat University, which aims to build a 21st-century skilled mindset through a multidisciplinary approach to knowledge creation. But still, there is a big academic gap for youth to be involved in the social entrepreneurship field.

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Determinants of Competitive Advantage Case study of Enterprises in Thailand

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ABSTRACT

In order to overcome competitors in competitive market, pursuing competitive advantage is the key driver for business companies to be successful in long-term. Competitive advantage can be derived from several sources. This paper aims to study the factors possibly affect enterprise's competitive advantage. The factor in this study includes product innovation, market competencies, corporate social responsibility, risk management awareness, resource management awareness, resource management awareness, and enterprise sustainability. Data were collected from 212 respondents who are the employees of business enterprises located in Thailand. Descriptive statistics of frequency has been applied to the research. The findings presented that production innovation was one of the most important variables driving the competitive advantages. It was followed by enterprise sustainability, risk management awareness, marketing competencies, resource management awareness, and corporate social responsibility (CSR), respectively.

KEYWORDS: competitive advantage, product innovation, market competencies, corporate social responsibility, risk management awareness, resource management awareness, and enterprise sustainability

INTRODUCTION

Competitive advantage can be developed when the enterprise owns and develops a combination of specific characteristics that allow it to overcome its competitors and be more competitive (Yuleva, 2019). Dimitrova showed that the competitive advantages are central to the process of shaping and developing the competitiveness of the enterprise (Dimitrova, 2014). Several research papers studied on the factors driving the competitive advantage of business enterprises. The purposes of the papers are finding the sources of the competitive advantage, and this can be benefits for several businesses to focus on those factors and this can differentiate from competitors in market.

RESEARCH OBJECTIVES

(1)   To study the factors that affects the business enterprise' competitive advantage, and
(2)   To provide information for business companies to pursue the competitive advantage

LITERATURE REVIEW
Competitive Advantage

When a company gain attributes that can make it to outperform its competitors, the competitive advantage is developed (Wang, 2014). The competitive advantage means better performance compared with competitors. This can also means better value delivery to customers, so it can ensure strong position in the market (Singh, 2012). According to Azoev (2000), competitiveness is a result of the reflection of the competitive advantage's existence. In order to understand of the mechanism for shaping competitiveness, the disclosure of its content and the internal links, it is important to explore the essence of competitive advantages.

Competitive advantage is considered as time-consuming features of the enterprise or factors of the external environment providing the enterprise with superiority over competitors in the particular market

over the period considered. The competitive advantage is the characteristics or properties owned by the product or brand, which give them some superiority over the competitors (Yuleva, 2019).

Product Innovation

Product innovation is the one allowing a better product to be offer than others in the market. It can be offering more functions or performs better than the others (Meeus, 2006). The company can gain a competitive advantage by differentiating its production and increasing the quality and variety of goods (Maier, 2018).

Product innovation means the development of goods or services with characteristics or intentions to use that differ from previous products made by the enterprise (Maier, 2018). One of the four strategic options when planning their product or market development strategies is to develop a new product (Maier, 2014).

Marketing Competencies

Market competencies can be developed from customer relevant attributes of products and services. customer requirements drive product attributes, and these can be the determinants of the points on which firms compete. These points of the competition develop from customer needs, wants and psychographics, and are thus market derived. It can be concluded that market competencies can be developed by meeting any of these points of competition based on customer expectations (Maccoll, 2017).

Corporate Social Responsibility

Corporate social responsibility is defined as a concept that companies combine the concern of social and environment in the business operations and the stakeholders' interaction (Crowther and Aras (2008).

Corporate social responsibility is also considered as a firm's commitment to maximize long-term economic, societal and environmental well-being by implementing in business practices, policies, and company's resources. The main objective of this implementation is to gain a competitive advantage over the competitors in the market (Du, Bhattachary, and Sen, 2010).

Corporate Social Opportunity is rising in importance as business companies see the relationship between CSR and new forms of profit centres, products and services and local products as key issues for consumers (Hopkins, 2014).

Risk Management Awareness

Risk management is a process of understanding and managing the risks that is related with the achievement of the objectives of the business companies. Risks can be divided into categories such as operational, financial, legal compliance, information and personnel (Harvey, 2008).

Risk management is related with identifying objectives, gathering information related with nature of the problem and the environment, evaluating the costs and benefits of alternatives using modern analytical techniques, and choosing the choice that is most consistent with the objectives of the enterprise. One of the most critical functions of risk management is probably the identification a process. A failure to recognize the existence of one or more potential events can result in financial disaster to the enterprise (Outreville, 1998).

Resource management awareness

Resource management means the usage of resource with efficiency and the prevention of the environmental impacts. Based on economic method, the decision makers shall aware and address important scare resources and solve for the potential market failures (European Commission, 2000).

It is important for business enterprises to manage and allocate the resources. It is same as responding to the environmental changes and the innovation. This can help the enterprises to achieve the competitive positions (Francis & Bessant, 2005). According to Barney, 2001, if the company can assemble the resources at its disposal, it can be a business opportunity to achieve a sustainable competitive advantage.

Enterprise sustainability

According to Funk (2003), sustainability can be described of a sustainable organization which can lead to a desirable future for stakeholders. There is no single definition for sustainable business practices. It can means in different definitions for different people.

Sustainable strategies development depends on several factors and drivers. These factors can create the opportunities necessary for sustainable strategies to be successful and motivate business to design and develop new sustainable strategies. The factors in the market that can cause sustainability issues, including widening inequality, exploitative labour practices and many environmental issues (Thomas, 2019)

Sustainable business models can be created by sustainable strategies. These create competitive advantage for the business enterprise, but this can contribute to sustainability (Bocken et al., 2014 & Boons and Lüdeke-Freund, 2013). According to Bocken et al. (2014), the development of a sustainable business model is a requirement for sustainable strategy. Different types of sustainable business models are found, each providing different solutions to different challenges.

Research Method

In this study, the quantitative method was a questionnaire survey by online distribution. The questionnaire was developed based on the literature review. The survey in this study included questions related to the current status of different employees' positions in different industries. The total of 212 valid responses working at different companies and industries were obtained. It helped to ensure that the sampling frame consisted of targeted respondents. Questionnaires were distributed for 3 months and 212 were returned.

The questionnaires consisted of 2 sections: (1) demographic data such as gender, age, educational level, the current position, the length of working at the present company, age of company, and foreign joint venture; (2) the respondents' perceptions toward the factors influencing the organization competitive advantages. The respondents were required to complete questions divided into 6 issues driving the company's competitive advantages, which were product innovation, marketing competencies, corporate social responsibility, risk management awareness, resource management awareness, and enterprise sustainability.

Results

The study examined the demographic data explained by descriptive statistics of frequency and percent. Questions on demographic profiles such as gender, age, educational level, the current position, the length of working at the present organization, type of company in the industry, and age of company. The demographic profile was presented in Table 1.

Table 1 Demographic profile (N=212)

Variables		N=212	Percent
Gender	Male	88	41.5
	Female	124	58.5
Age	Younger than 25	66	31.1
	25-30	36	17.0
	31-35	26	12.3
	36-40	40	18.9
	41-45	20	9.4
	Older than 45	24	11.3
Education Level	Lower than Bachelor's	20	9.4
	Bachelor's	152	71.1
	Higher than Bachelor's	40	18.9
The current position	Non-management position	94	44.3
	Management position	110	51.9
	Business owner	6	2.8
	Others	2	1.0

Variables		N=212	Percent
The working duration at the present company	Less than 1 year	48	22.6
	1-3 years	62	29.3
	3-5 years	20	9.4
	Longer than 5 years	82	38.7
Age of company	Younger than 5 years	24	11.3
	5-10 years	40	18.9
	11-20 years	38	17.9
	Older than 20 years	110	51.9
Foreign joint venture	Yes	114	53.8
	No	98	46.2

Descriptive statistics data were calculated for the second-part questions which asked the participants of their perceptions toward factors that influenced and drove the company's competitive advantages. The results were illustrated in Table 2.

Table 2 The respondents' perception level toward factors influencing company competitive advantage

Factors		Mean	S.D.
1	**Product Innovation**	**4.10**	
	Most products or services can be easily perceived.	4.24	0.71
	The organization's products or services are evolving and growing.	4.14	0.72
	The organization's ability to manage products or services is good.	3.96	0.73
	The organization has the technical ability to produce a unique product or service.	4.02	0.87
	Patents or copyrights of products or services are important.	4.38	0.73
	The organization has an ability to analyze and act on information.	4.05	0.75
	The organization has good platform techniques when it comes to data flow in the organization.	3.93	0.81
	The organizations use social networks to communicate information.	4.04	0.95
2	**Marketing competencies**	**4.03**	
	The organizations have an ability to set prices to sell products or services.	3.97	0.91
	The organization has an ability to manage product or service channels.	4.60	0.86
	The organization has an ability to manage marketing communications of products or services.	3.90	0.90
	The organization has the ability to manage sales of products or services.	4.00	0.77

	Factors	Mean	S.D.
	The organization has the skills to research products or services.	3.80	0.88
	The organization has the planning skills to market its products or services.	3.88	0.94
3	**Corporate Social Responsibility**	**3.95**	
	The organization has personnel responsible for corporate social and environmental responsibility.	3.93	0.94
	The organization has a clear policy on social and environmental responsibility.	4.00	1.01
	The people in one organization understand the policies and implications of being socially and environmentally responsible.	3.99	0.91
	The people in one organization understand the benefits of being socially and environmentally responsible to the organization and society.	4.08	0.85
	The organization organizes or participates in activities related to social and environmental responsibility.	3.95	1.01
	Everyone in one organization participates in social and environmental responsibility activities that one organization participates in.	3.74	0.99
	The organization engages its stakeholders in social and environmental responsibility activities.	3.94	1.00
4	**Risk Management Awareness**	**4.05**	
	The people in one organization heard about risk management and know what risk management means.	4.09	0.77
	If the people in one organization know that risk management, it will be beneficial to one organization.	4.27	0.83
	The people in one organization have a consistent understanding of what risk management means.	3.97	0.81
	The people in one organization understand the benefits of risk management	3.92	0.79
	The organization has a clear policy regarding risk management.	4.07	0.86
	The organization communicates risk management to its stakeholders.	4.00	0.86
5	**Resource Management Awareness**	**3.96**	
	The people in one organization know and understand what resource management means.	4.03	0.84
	The people in one organization understand that resource management is beneficial to one organization.	4.04	0.79
	The people in one organization understand the guidelines and benefits of resource management.	3.95	0.78
	The organization has clear policies regarding resource management.	3.89	0.92
	The organization communicates resource management to its stakeholders.	3.88	0.89
6	**Enterprise Sustainability**	**4.09**	

Factors	Mean	S.D.
The organization has clear business sustainability indicators.	4.14	0.81
The organization conducts business according to ideals and ethics with integrity, openness, transparency, and accountability.	4.32	0.74
The organization aims to create value for both customers, employees and all stakeholders. parties in a balanced way.	4.23	0.79
The organization continuously improves its production processes and services.	4.14	0.76
The organization produces environmentally friendly products and services.	3.90	1.04
The organization is continuously involved in maintaining the environment and conserving natural resources.	3.98	0.92
The organization contributes to creating society and improving the quality of life for people everywhere it operates.	3.92	0.92

According to Table 2, it presented 6 factors that the respondents perceived that they affected the company competitive advantages. Production innovation resource was one of the most important variables driving the competitive advantages, followed by enterprise sustainability, risk management awareness, marketing competencies, resource management awareness, and corporate social responsibility (CSR), respectively.

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Live Streaming and Purchase Intention: A Bibliometrics Analysis

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ABSTRACT

The importance of digital marketing is increasing with the development of technology. A growing number of businesses are adopting live-stream e-commerce marketing strategies to sell their products or services. However, there is a lack of bibliometric studies related to live streaming and customer purchasing. This study aims to explore the relationship between live streaming and consumer purchasing through a bibliometric analysis, utilizing 144 articles from the Web of Science database up to 2023. This research provides a comprehensive bibliometric overview of publications, authors, institutions, countries, keywords, and thematic maps on the topic of live streaming and purchasing, using VOSviewer and Biblioshiny. Furthermore, the study identifies hotspots in live streaming and purchasing research. The findings show that research in live streaming and consumer purchasing has rapidly increased since 2021, and China is recognized as the leading country in researching live streaming and purchasing. The current research primarily focuses on purchase intention, consumer behavior, and social commerce. This study provides an overview of the current research landscape and lays the foundation for future academic investigations.

KEYWORDS: live streaming; consumer purchase intention; bibliometric analysis; digital marketing; e-commerce

INTRODUCTION

In recent years, live e-commerce as an emerging e-commerce model has grown rapidly and gained popularity worldwide and is being used by many companies (Fu & Hsu, 2023). Live commerce is a new e-service strategy that employs live-streaming technology for online promotions to showcase and sell their products through live-streaming platforms embedded in e-commerce transactions such as TikTok Live or e-commerce platforms embedded with live-streaming services such as Taobao Live(Chen & Zhang, 2023) or Facebook Live. The Live Streaming Global Market Report 2023 indicates that the global live streaming market is expected to grow from $1.24 billion in 2022 to $1.49 billion in 2023, at a Compound Annual Growth Rate (CAGR) of 20.6% (The Business Research Company, 2023).

Therefore, it is crucial for practitioners and researchers to comprehend consumers' purchase intention in live e-commerce streaming (Xiong et al., 2023). Currently, academic research on live streaming and purchase intention focuses on the following aspects: how live streaming in different industries affects purchase intention such as agricultural products and fresh produce (Dong et al., 2022; Guo et al., 2022; Song et al., 2022), travelling, eating podcasts (Lee & Wan, 2023), and cultural and creative products in museums(Lin et al., 2022), travel, food broadcasting(Lee & Wan, 2023), cultural and creative products in museums (Lin et al., 2022), fitness clubs (Liu et al., 2022), the effect of perceived value on shopping intention (Wu & Huang, 2023).

Bibliometrics refers to a collection of mathematical and statistical methods used to analyze and measure the quantity and quality of books, articles, and other forms of publications (Durieux & Gevenois, 2010). Commonly used bibliometric software includes VOSviewer and Biblioshiny. Some studies have employed bibliometrics to explore the relationship between social commerce and willingness to buy (Dincer & Dincer, 2023), while others have measured user behaviors in live e-commerce (Luo et al., 2022). However, no literature currently exists measuring live streaming and purchase behavior.

The purpose of this study is to provide a comprehensive overview of research on live streaming and purchasing behavior. A bibliometric analysis was conducted on 144 articles in the Web of Science

database up to 2023 using VOSviewer and Biblioshiny software to analyze publications, authors, institutions, countries, keywords, and thematic maps on the topic of live streaming and purchasing. Additionally, this paper identifies research hotspots in the field of purchase intention on live e-commerce platforms.

The findings show that there has been a marked increase in academic research on live streaming and purchasing since the first publication on the topic in 2018, signaling a rapid growth and interest in this field. China leads in both publication and citation counts, indicating a strong influence in this research area, while other countries like Australia and the UK also contribute significantly, reflecting its global scope. Academic institutions, particularly Shanghai University, were noted for their substantial contributions to the volume and impact of research. The scope of studies is diverse, covering aspects such as purchase intention, consumer behavior, and social commerce, which illustrates the multidisciplinary nature of this field. This trend is further emphasized by the variety of academic journals involved, including Frontiers in Psychology and Sustainability, indicating a wide-ranging interest and potential for innovative research in live streaming and purchasing.

This study depicted the current research outlook and laid the foundation for future academic inquiry. The remainder of this paper is organized as follows. Section 2 presents the literature review, where we discuss the relevant studies and background. In section 3, the research methodology is detailed, describing the methods and procedures employed in our study. Section 4 presents the results, where we analyze the papers. Finally, section 5 concludes the paper, summarizing our main conclusions and discussing the limitations of our study, as well as suggesting directions for future research.

LITERATURE REVIEW

With the rapid development of e-commerce, live commerce, as its latest evolutionary form, has become a hotspot in the market. Live commerce platforms, by combining real-time interactive live broadcasting and instant purchasing, offer consumers a novel shopping experience. This chapter, through a literature review, delves into the main research directions in the live commerce field, consumer purchase intentions, and discusses the application of bibliometrics in analyzing the relationship between live commerce and shopping intentions or behaviors.

Live Streaming Commerce

Live streaming commerce platforms represent the latest evolution in e-commerce, characterized by features such as live broadcasting and real-time interactive commenting. These platforms integrate immediate purchasing of unique products with audience participation(Kim et al., 2023). Focusing on consumers as the primary subject of study, existing research in live streaming commerce mainly revolves around four areas(Xu et al., 2023), including the consumer viewing motivations, engagement, purchase intention, and marketing strategies.

The first area is consumer viewing motivations in live streaming commerce. Researchers have noted that the inherent social presence and synchronicity in live streaming strategies provide a more authentic viewing experience than pre-recorded approaches, thus enhancing consumers' search and subscription intentions(Ang et al., 2018). Guo et al. identified the characteristics of hosts (such as attractiveness, capability, and communication style) as key factors influencing the popularity of hosts, as well as consumer viewing and purchasing intentions(Y. Guo et al., 2022). Zhang, Liu, et al. (2022) explored how trust can be enhanced through real-time interaction and technical facilitators, consequently affecting the willingness to continue watching.

The second area is consumer engagement in live streaming commerce. Literature has examined the impact of customer trust on engagement levels in live streaming commerce(L. Guo et al., 2021).

The third area is consumers' purchase intentions or impulsive buying intentions in live streaming commerce. Research in this field has delved into factors such as building consumer trust(C. Chen et al., 2022), interpersonal interaction elements(H. Chen et al., 2021), and the complexity of visual backgrounds in live streaming(Tong et al., 2022), and how they influence consumer purchase intentions.

Lastly, the fourth area focuses on the marketing strategies of live streaming commerce. Studies have highlighted that marketing content and interaction with fans can enhance marketing effectiveness(Geng et al., 2020).

Consumer Purchase Intention

Purchase intention can be classified as a type of customer behavioral intention, typically representing the consumer's conscious effort to carry out a certain purchasing action(Zhang et al., 2023). In the field of live streaming commerce, the literature has examined the impact of building consumer trust(C. Chen et al., 2022), interpersonal interaction factors(H. Chen et al., 2021), and the complexity of visual backgrounds in live streaming (Tong et al., 2022) on the purchasing intentions of consumers in this sector.

Additionally, current academic research on live streaming and purchase intentions mainly focuses on the following aspects: how live streaming in different industries affects shopping intentions, such as in agricultural products and fresh food (Dong et al., 2022; Guo et al., 2022; Song et al., 2022), tourism, food broadcasting (Lee & Wan, 2023), cultural and creative products in museums (Lin et al., 2022), fitness membership clubs (Liu et al., 2022), etc. The influence of perceived value on shopping intentions (Wu & Huang, 2023), and the impact of hosts on purchase intentions (N. Chen & Yang, 2023; Wang et al., 2022) have also been explored. Thus, it is evident that research perspectives on live streaming and purchasing behaviors are diverse, and the conclusions drawn are varied.

Bibliometrics

Bibliometrics is a set of mathematical and statistical techniques used to analyze and measure the quantity and quality of books, articles, and other forms of publications(Durieux & Gevenois, 2010).

In the research design, scholars define the research questions and choose appropriate bibliometric methods to answer these questions. The use of scient metric mapping in bibliometrics can address three general types of research questions: (i) identifying the knowledge base and its knowledge structure of a subject or field of study; (ii) examining the research frontiers (or conceptual structures) of a topic or field of study; (iii) generating the social network structures of specific scientific communities(Aria & Cuccurullo, 2017).

In summary, live commerce, as an emerging e-commerce model, has attracted the attention of numerous scholars. From consumer viewing motivations to purchase intentions, from marketing strategies to the application of bibliometrics, these studies not only reveal the multidimensional characteristics of live commerce but also provide rich theoretical support for understanding consumer behaviors. Although there is currently a lack of systematic literature reviews and bibliometric analyses, the discussion in this paper lays the foundation for filling this gap. Future research can further deepen the understanding of the influencing factors of live commerce and explore its applications in different industries to promote the continuous development and innovation of this field.

RESEARCH METHODOLOGY

This study employs a bibliometric analysis approach with the aim of objectively and quantitatively examining the research dynamics related to purchasing in the field of live e-commerce. As a dynamic research tool, bibliometric analysis effectively reveals emerging themes and trends within a research field. To achieve this goal, we conducted a comprehensive search and analysis of relevant literature.

VOSviewer is a freely available computer program for constructing and viewing bibliometric maps, displaying large bibliometric maps in an easily interpretable manner(van Eck & Waltman, 2010). Biblioshiny, a package for R language integrated into RStudio, offers academic researchers a convenient tool for literature review and meta-analysis. This program supports the management of bibliographic data, statistical analysis, and the generation of visualized report outputs, making it particularly suitable for handling complex literature information and statistical data.

Figure 1 displays the data collection, processing, and analysis framework of this study. During the search and data collection phase, we performed a literature search in the Web of Science Core Collection database, selecting the Science Citation Index Expanded (SCI-Expanded) and Social Sciences Citation Index (SSCI) as information sources. In the advanced search, we used the following search string: TS=

("live-stream*" OR "live stream*" OR "live video" OR "live commerce" OR "live e-commerce" OR "live broadcast") AND TS=("purchase*") AND PY= (1900-2023), yielding a total of 183 articles in January 2, 2024.

During the subsequent data processing phase, we discovered that the earliest article dating back to 2014 did not align with our research theme upon reviewing its abstract. So, the first publication date relevant to our theme was 2018. We excluded the article published in 2014 from our dataset. Subsequently, we excluded 33 Early Access (EA) articles, 2 review articles, and 1 correction statement, resulting in a final dataset of 146 articles from the Web of Science. We exported the records from the Web of Science. The records exported from Web of Science contain fields: EA and Publication Year (PY). Web of Science will use EA field to represent the publication year if an EA exists, while Bibliometric tools like Biblioshiny or CiteSpace use the PY field, representing the official publication year. We use CiteSpace 6.2.R4 to process data exported from Web of Science, ensuring that we have a separate file for data from each year. We found two 2 articles were published in 2024. Since the objective of this study was to analyze publications up to the end of 2023, we excluded the 2 articles published in 2024, leaving us with a total of 144 articles.

In the forthcoming results analysis section, this paper utilized Excel to analyze the publications and using VOSviewer 1.6.19 to conduct an in-depth exploration of authors, institutions, countries, and keywords related to the topic of live streaming and purchasing and conducted thematic map analysis using Biblioshiny within the RStudio version 2023.06.1+524 and R language version 4.3.1 environment.
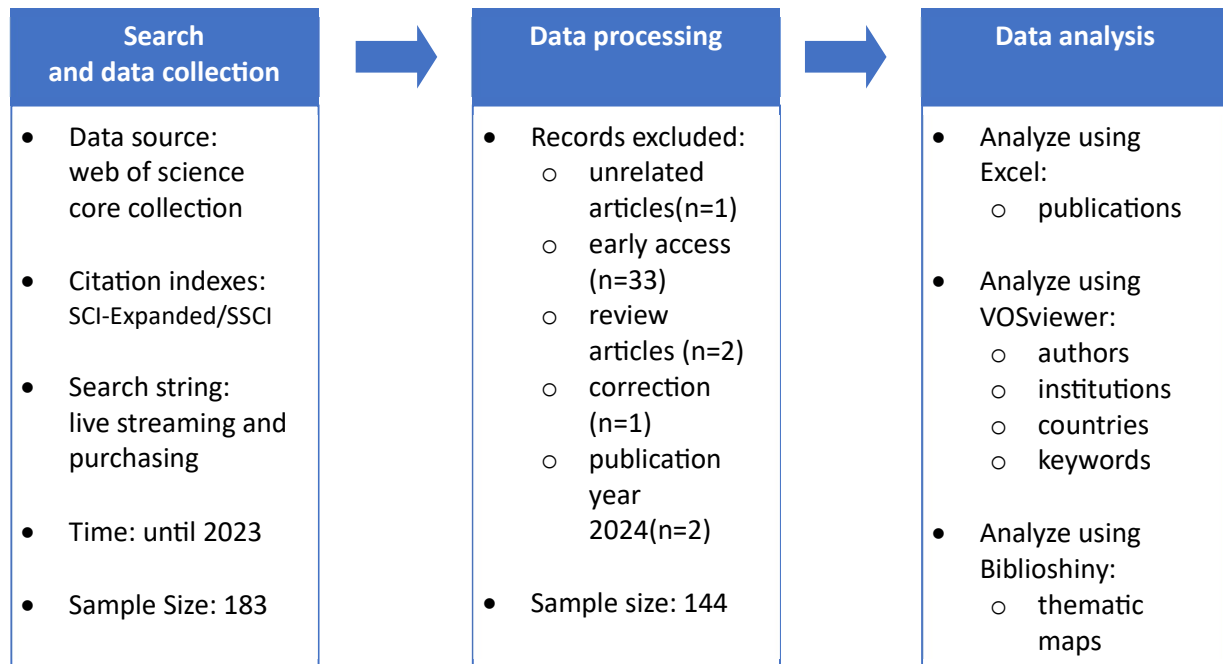
Search and data collection	Data processing	Data analysis

• Data source: web of science core collection
 	
• Citation indexes: SCI-Expanded/SSCI
 	
• Search string: live streaming and purchasing
 	
• Time: until 2023
 	
• Sample Size: 183
	• Records excluded:
	  o unrelated articles(n=1)
	  o early access (n=33)
	  o review articles (n=2)
	  o correction (n=1)
	  o publication year 2024(n=2)
	
	• Sample size: 144
		• Analyze using Excel:
		  o publications
		
		• Analyze using VOSviewer:
		  o authors
		  o institutions
		  o countries
		  o keywords
		
		• Analyze using Biblioshiny:
		  o thematic maps

Figure 1: Research framework.

RESULTS

Analysis of Annual Publications

This section consists of two parts. The first part displays a line graph that illustrates the annual publication trends in live streaming, purchasing, and their intersection up to 2023. Additionally, a Venn diagram will be used to demonstrate the number of publications on live streaming, purchasing, and their intersection from 2018 to 2023. The second part analyzes the annual publications on live streaming and purchasing from 2018 to 2023.

Analysis of Publication Volumes on the Themes of Live Streaming, Purchasing, and Live Streaming and Purchasing

This section analyzes the total publication volume of three themes in the Web of Science Core Collection database: live streaming, purchasing, and live streaming and purchasing. This analysis helps to better understand the current state of these topics. The search results revealed that articles themed around 'live' and 'purchase' first appeared in the Web of Science database in 1995. For purchasing, using the search string TS = ("purchase*") AND PY = (1900-2023), there were 60,931 articles; for 'live,' using the search string TS = ("live-stream*" OR "live stream*" OR "live video" OR "live commerce" OR "live e-commerce" OR "live broadcast") AND PY= (1900-2023), there were 2,494 articles. For articles themed 'live and purchase,' using the search string TS=("live-stream*" OR "live stream*" OR "live video" OR "live commerce" OR "live e-commerce" OR "live broadcast") AND TS=("purchase*") AND PY=(1900-2023), there were 183 articles, with the first appearing in 2014, but after reading the abstract, we found it irrelevant to our theme, so the first publication date relevant to our theme was 2018. Based on the search results, we created a line graph as shown in Figure 2, which displays the annual trends of these three different themes 'purchase,' 'live,' and 'live and purchase' from 1995 to 2023. From the graph, it is evident that the 'purchase' theme shows a significant upward trend, especially since 2010, with a rapid increase in growth rate, reaching its peak in 2021 with 6,465 publications. In contrast, the 'live' theme has a lower and more stable trend. The third theme, 'live and purchase,' has grown within a lower range since its first publication in 2018.

The article combining the themes of live streaming and purchasing first appeared in 2018. Therefore, our study will focus on the period from 2018 to 2023. Since the theme of 'live and purchase' first emerged in 2018, it is necessary to compare and analyze the publication volumes of the three themes 'purchase,' 'live,' and 'live and purchase' in the Web of Science Core Collection from 2018 to 2023. We modified the search string to 'PY= (2018-2023)'. As depicted in Figure 3's Venn diagram, it demonstrates the number of articles about live streaming and purchasing and their intersection from 2018 to 2023 with two intersecting circles. The circle on the left represents articles with the theme live streaming, including 1,632 articles. The circle on the right represents articles with the theme purchasing, including 31,720 articles. The intersecting area of the circles represents the articles of live streaming and purchasing, totaling 182 articles. We can see that the number of articles with the theme 'live and purchase' is still quite small compared to the theme's 'purchase' and 'live,' indicating that this field requires further exploration.
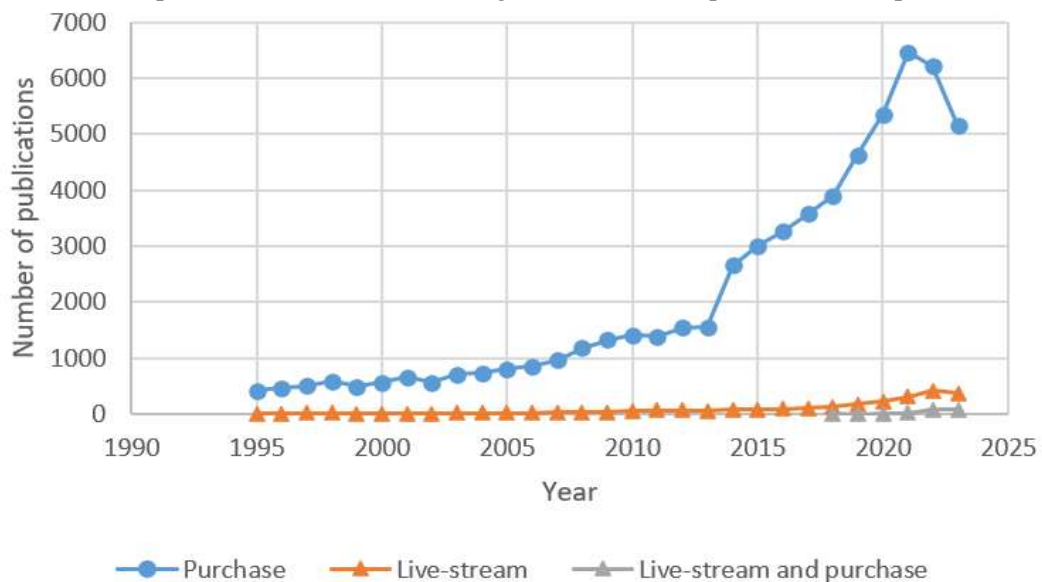

Figure 2: Annual publication trends from 1995 to 2023 in live streaming, purchasing, and combined topics.
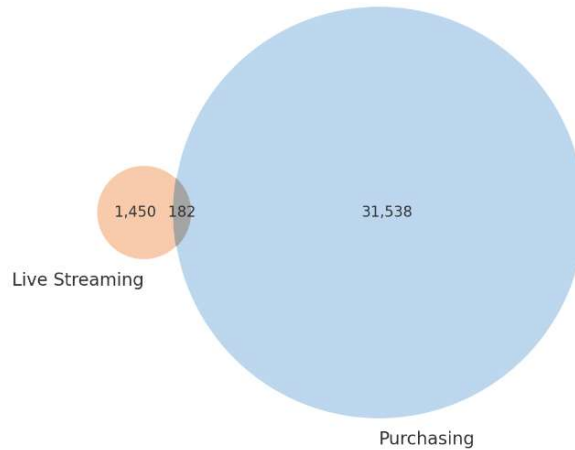
Figure 3: Venn diagram showing the number of publications on live streaming, purchasing, and their intersection from 2018 to 2023.

Analysis of Publication Volume on the Theme of Live and Purchase

The annual number of published papers and their trends can reflect the development and level of attention in the field of live streaming and purchasing research. As previously shown in Figure 1, after data processing, there were 144 articles. We used Excel to plot a line graph based on the publication year of these articles, as illustrated in Figure 4. The earliest articles on the 'Live and Purchase' theme appeared in 2018. Between 2018 and 2019, research on this theme was in its initial stage, with relatively low publication volume. However, starting from 2020, the publication volume began to rise rapidly, showing an accelerating growth trend. By 2022, the number of articles reached 62, a significant increase compared to 2018. The solid line in the graph represents the actual number of publications each year, while the dashed line represents a polynomial trendline fitted to the data, with the equation $y = 3.4286x^2 - 13841x + 1E+07$, and a goodness of fit R^2 of 0.948. This high degree of fit indicates a strong consistency between the model and the actual data, suggesting that research on the 'Live and Purchase' theme is expected to continue its growth trajectory in the coming years.
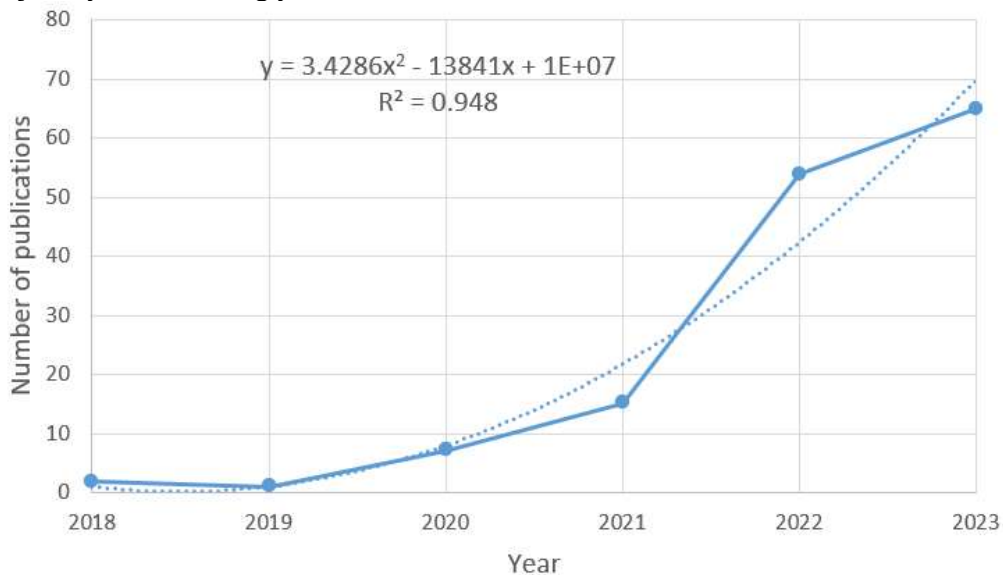

Figure 4: Number of publications with keywords 'live streaming' and 'purchasing' per year from 2018 to 2023.

Top 10–Most Productive Authors

        As shown in Table 1, it provides a detailed overview of the top authors contributing to the field of live streaming and purchasing. The table is organized in terms of the number of documents published, the total citations, and the total link strength for each author. Total Link Strength in VOSviewer represents the sum of the strengths of all the connections an item, such as an author or a paper, has within a network, indicating its overall influence and connectivity in that domain. Hua Ying stands out with the highest number of publications, having contributed three documents. These papers have collectively received 46 citations, indicating a significant impact in the field, with a Total Link Strength of 4. Benitez Jose and Chen Yuangao follow, each with two published documents. Benitez Jose's work has received considerable attention, accumulating 38 citations and a Total Link Strength of 4. In contrast, Chen Yuangao's work, though equal in publication count, has only garnered a single citation and has a Total Link Strength of 2.

Table 1: Top 10 most productive authors in live streaming and purchasing research from 2018 to 2023.

Author	Documents	Citations	Total Link Strength
Hua Ying	3	46	4
Benitez Jose	2	38	4
Chen Yuangao	2	1	2
Guo Yue	2	5	8
Li Xiaotong	2	27	8
Luo Xin (Robert)	2	19	4
Nie Kun	2	57	8
Shao Xiang	2	50	8
Sun Yuan	2	39	8
Tong Xinjia	2	68	2

Top 10–Most Productive Institutions

        Table 2 displays the ten most productive institutions in the field of live streaming and purchasing, from which we can observe some key trends and characteristics. Firstly, the volume of publications from these institutions reveals their research activity in this field, with Shanghai University leading with 6 publications, indicating its prominent position in the field. However, when we consider citations, an important metric for measuring research impact and quality, the scenario changes. For instance, Yeungnam University, despite having fewer publications, has a high citation count of 150, indicating the high quality and impact of its research. This discrepancy suggests that while some institutions may have a high output of publications, it does not necessarily equate to high research quality or impact. Additionally, the generally low total link strength indicates that research collaborations and network connections in the 'Live and Purchase' field might not be very strong, possibly due to the field's emerging nature and rapid development. Geographically, these institutions are mainly located in China, highlighting China's significant role in research in this field, but there are also institutions from other countries, like Yeungnam University in South Korea, reflecting the international aspect of the field. Overall, this data provides a comprehensive overview of the most productive institutions in the 'Live and Purchase' field, revealing the research activity, impact, and the geographical and collaborative network characteristics of each institution, hinting at possible future directions and potential research opportunities in the field.

Table 2: Top 10 most productive institutions in live streaming and purchasing research from 2018 to 2023.

Organization	Country	Documents	Citations	Total Link Strength
Shanghai University	China	6	33	1
Renmin University of China	China	5	50	2
University of International Business and Economics	China	5	62	1
Zhejiang Gongshang University	China	5	22	2
Dongbei University of Finance and Economics	China	4	71	0
Guilin University of Electronic Technology	China	4	49	0
Yeungnam University	South Korea	4	150	0
China Jiliang University	China	3	76	2
Chongqing University	China	3	48	0
Soochow University	China	3	47	2

Top 12–Most Productive Countries

Table 3 displays the 12 most productive countries in the field of live streaming and purchasing, and analyzes their contributions and influence. China leads with 129 publications, far surpassing other countries, and a high citation count of 2,517, indicating its significant impact and academic recognition in the field. The United States and South Korea follow China, with 15 publications each. However, it is clear that the United States has a much higher citation count (653) than South Korea (182), which may reflect the depth and quality of research in the field in the U.S. While countries such as Australia, the United Kingdom, Canada, and France may have fewer publications than the leading countries in Asia and North America, their presence demonstrates the global reach and influence of this research area. Australia and the United Kingdom have a high average citation count per publication, indicating the quality of their research. Thailand has a high citation count of 380 despite having only 3 publications, highlighting the significance and impact of its research. Malaysia, Saudi Arabia, Bangladesh, and Pakistan have each published two documents and are ranked based on the number of citations they have received.

The data for the country was exported from VOSviewer software in GML format to SCImago Graphica Beta 1.0.38 software. Figure 5 shows a map of national collaborations. The size of the country nodes represents the volume of publications, while the thickness of the lines between countries indicates the degree of collaboration between them.

Table 3: Top 12 most productive countries in live streaming and purchasing research from 2018 to 2023.

Country	Documents	Citations	Total link strength
China	129	2517	42
USA	15	653	17
South Korea	15	182	11
Australia	7	21	8
United Kingdom	6	55	8
Canada	4	159	5
Thailand	3	380	1
France	3	49	4
Malaysia	2	17	2
Saudi Arabia	2	9	3
Bangladesh	2	7	3
Pakistan	2	6	2

Figure 5: Country analysis in live streaming and purchasing research (2018-2023).

Keyword Co-Occurrence Analysis

Keywords are a crucial component of each publication, concisely summarizing and reflecting its research content. Co-word analysis generates a semantic map of a field, helping to understand its cognitive structure. It can be applied to document keywords, abstracts, or full texts(Aria & Cuccurullo, 2017). Keyword co-occurrence analysis is a method used to explore the relationships between keywords within a set of documents. It involves examining how often pairs of keywords appear together in the same documents. Keyword co-occurrence analysis reveals the strength of associations between different keywords, reflecting the closeness of various concepts within a research topic and research hotspots (van Eck & Waltman, 2010). As shown in Figure 6, by using VOSviewer to analyze the keyword co-occurrence of a dataset exported from the Web of Science database, we can observe the keyword distribution in articles related to the Live and Shopping theme. In subsequent processing with Pajek 5.18 software, the *In Y Direction* layout in image processing function enhances the visual presentation of these keywords.

The four different colors in the map represent four different research categories. The red area mainly focuses on social commerce, involving aspects such as experience, and live streaming commerce; the green area represents influence, emphasizing the impact of the live streaming environment, experience, and engagement; the blue area focuses on behavior, involving the antecedents and consequences of consumer behavior; and the yellow area concentrates on purchase intention, including concepts such as trust, satisfaction, and online models. The graph shows that the most important keyword is purchase intention.
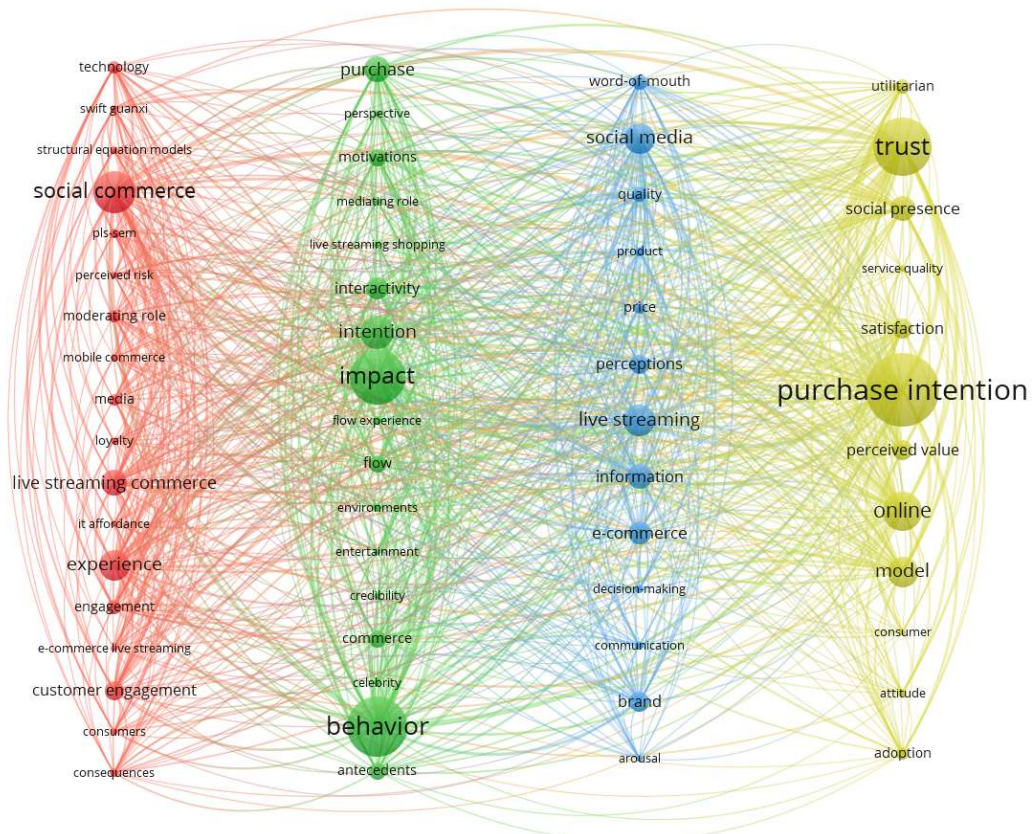
Figure 6: Co-occurrence analysis map of keywords in live streaming and purchasing research (2018-2023).

The Top 10 Journals with The Highest Publication Volume

Table 4 presents the top 10 journals with the highest publication volume. *Frontiers in Psychology* leads with 26 publications, followed by the *Sustainability* journal with 23 publications. Notably, *Journal of Retailing and Consumer Services*, despite having only 13 publications, has a high citation count of 310, demonstrating its high relevance and impact in the field. Citation count, as an indicator of academic influence and recognition, varies significantly among different journals. *Electronic Commerce Research and Applications* and *Telecommunications and Informatics* have fewer publications but high citation counts of 493 and 451, respectively. This indicates that articles in these journals are highly regarded and valued by the research community. The total link strength reflects the degree of referencing and citation of the literature within the network. *Frontiers in Psychology* ranks first with a link strength of 5,624, followed by *Sustainability* (3,802) and *Journal of Retailing and Consumer Services* (4,341).

Table 4: The top 10 journals with the highest publication volume in live streaming and purchasing research (2018-2023)

Source	Documents	Citations	Total link strength
Frontiers in Psychology	26	134	5624
Sustainability	23	138	3802
Journal of Retailing and Consumer Services	13	310	4341
Electronic Commerce Research and Applications	6	493	2440
Telematics and Informatics	4	451	1127
Journal of Business Research	4	354	1189

Source	Documents	Citations	Total link strength
Internet Research	3	114	1271
Asia Pacific Journal of Marketing and Logistics	3	64	904
International Journal of Human-computer Interaction	3	31	1027
IEEE Access	3	18	1137
Journal of Theoretical and Applied Electronic Commerce Research	3	4	914
Sage Open	3	0	1014

Thematic Map

As shown in Figure 7, the thematic map displays the results of bibliometric analysis in the field of live streaming and purchasing. The themes in the map are distributed in four quadrants based on their level of development and centrality. In the upper left quadrant, Niche Themes includes some themes that are not yet fully developed, such as explanation, guanxi which means relationship, and media richness. This indicates that these concepts are still marginal in research but may have potential research value. The upper right quadrant, Motor Themes, contains the most active and central themes in the literature, such as attitudes and modeling Partial Least Squares Structural Equation Modeling (PLS-SEM), meaning that these themes are the main drivers of research development in the field. The lower left quadrant, Emerging or Declining Themes, includes psychological distance, and authenticity, which may be emerging or declining areas of research. Finally, in the lower right quadrant, Basic Themes includes themes like behavior, impact, and trust, which are considered key concepts that form the foundation of this research field.
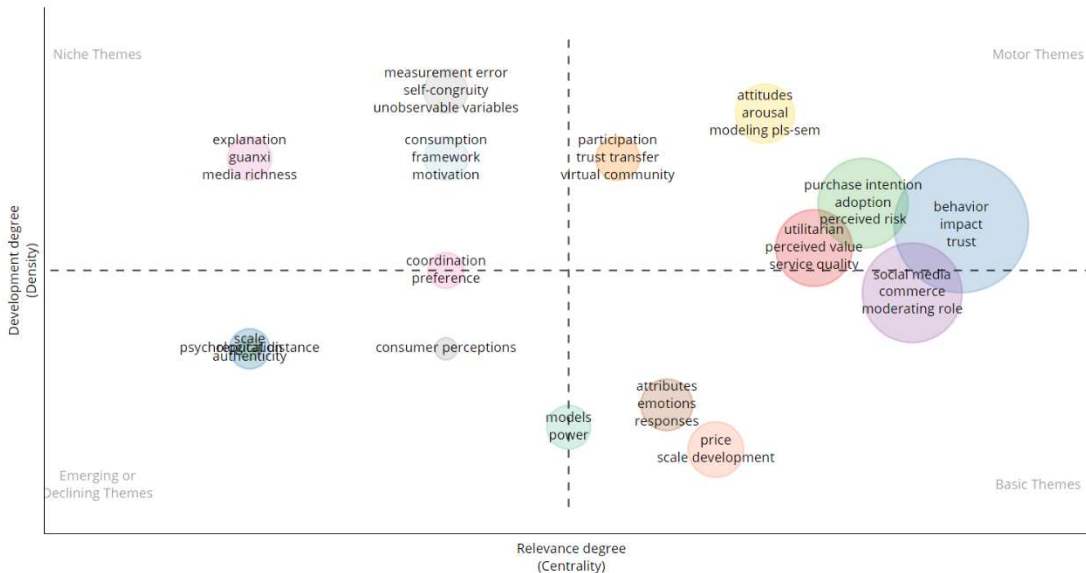

Figure 7: Thematic map of live streaming and purchasing (2018-2023).

CONCLUSIONS AND LIMITATIONS
Conclusions

In this paper, 144 papers related to live streaming and purchasing research were metrically analyzed using bibliometric tools such as VOSviewer and Biblioshiny. These tools analyzed the number of publications and trend changes in research from 2018 to 2023. The main conclusions are as follows:

1) Regarding the number of publications, the first article on live streaming and purchase was published in 2018. The volume of research publications has seen a budding and rapid growth phase, with a steady upward trend in the cumulative number of articles.

2) The field of live streaming and purchasing has not yet seen the emergence of clear academic leaders, indicating that the research is still in a relatively early stage. This situation offers opportunities for newcomers and suggests the potential for more innovative and diverse research in the future. With the rapid development and increasing market influence of live commerce, more academic attention and research output in this field are expected in the future.

3) China leads in the number of publications and citations in the live streaming and purchasing research field, demonstrating its extensive research influence. Although countries like Australia, the UK, and Canada have fewer publications, their high citation counts reflect the quality of their research. Additionally, countries like Thailand and Malaysia, though contributing a limited number of publications, exhibit significant influence in specific areas.

4) Shanghai University led in publication output while institutions with high citation counts, like Yeungnam University, indicate the importance of research quality and impact. This finding emphasizes the need to consider both quantity and quality when assessing academic contributions. The overall low link strength may suggest that research collaboration and network connections in the field are still developing, providing room for future cross-institutional and international cooperation. Geographically, Chinese institutions play a significant role in the field, while international participation reveals the global nature of the field. These findings not only provide insight into the current research landscape of live streaming and purchasing but also guide future research directions and collaboration opportunities.

5) The results of the keyword co-occurrence analysis indicate that research in the field of live streaming and shopping not only involves discussions of technology and business models but also focuses on consumer psychology and behavioral patterns, particularly in the formation of trust and purchase intentions. Additionally, experience and engagement play a significant role in driving consumers from the live streaming environment to purchase behavior. These analytical results provide clear directions for future research, highlighting key areas for further exploration by scholars.

6) *Frontiers in Psychology* and *Sustainability* lead in publication volume, indicating their central role in disseminating research in the field. Journals such as *Electronic Commerce Research and Applications* and *Journal of Telecommunications and Informatics*, despite fewer publications, have high citation counts, emphasizing that in academic contributions, quality and relevance are more important than quantity. The entry of journals from different disciplinary backgrounds into the top 10 list highlights the interdisciplinary nature of the field. This suggests that the research area is not only dynamic and evolving but also inclusive, contributing to multiple academic disciplines. These findings provide important guidance for researchers in choosing appropriate publication channels, helping them effectively position their work by identifying journals with broad academic influence and high citation counts to reach the core audience in the field.

7) Motor Themes such as attitudes and modeling PLS-SEM are currently the center and engine of research, indicating that these themes play a crucial role in understanding the impact of live streaming on purchase intentions. Meanwhile, Basic Themes like behavior, impact, and trust form the foundation of the field, being key factors in understanding consumer behavior. Nonetheless, themes in the Niche Themes and Emerging or Declining Themes quadrants, such as explanation, guanxi, media richness, psychological distance, and authenticity, while currently less researched, offer new perspectives and opportunities for future exploration. Exploring these marginal themes could significantly impact understanding and optimizing the influence of live streaming on purchase intentions. This study also identifies potential gaps in research, providing directions for future exploration. For example, areas such as trust transfer mechanisms in the live streaming environment, the moderating role of social media, and consumer perceptions of authenticity in live streaming content are worth further exploration. Future research can enrich the theoretical foundation of the live streaming field by delving into these topics and provide more precise marketing strategies for practitioners.

Limitations

Like other bibliometric studies, this research also has some limitations. Firstly, the data for this study was solely collected from the Web of Science (WOS) database, comprising a total of 144 papers, which is a relatively small number. In future research, data can be gathered from other well-known databases such as Scopus and ScienceDirect to enhance the dataset. Secondly, researchers can apply advanced bibliometric analyses, including co-citation and co-authorship analysis, to better understand user behavior in live commerce or other related disciplines.

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Revolutionizing Sustainable Waste Industries: Crafting B2B Web Landing Page Interfaces

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ABSTRACT

The circular economy platform holds great significance for B2B (business-to-business) companies as it promotes efficient resource utilization and offers centralized product portfolios from three parties. Sustainable waste management companies are very typical of B2B circular economy systems, and a good web landing page design can help with sustainable waste management by enables companies to demonstrate their commitment to environmental sustainability and to introduce visitors to the importance of waste management. However, in the field of B2B landing page design, there is only a little research mentioned on how to make web-pages design that fit the circular economy and meet user preferences. To bridge the existing void in understanding the preferences and expectations of B2B customers in the sustainable waste industry, this paper applied goal-directed design method (Cooper, 2020) and Conceptual framework of user preference design (Lee & Koubek, 2010) by utilizing secondary data sources as market research reports and academic literature, to gather information on user preferences and behaviors related to sustainable waste management in the B2B sector. Then, analyzed for identifying of key design components and exploring the connection between user preference theory and website interface design requirements for the adopting design elements from value, information, and visual design. This study suggests an innovative way of using B2B web landing page UI design for sustainable waste management. Sustainable Businesses can improve their reputation for environmental responsibility while producing new commercial opportunities by designing the platform to the preference and behaviors of their clients.

KEYWORDS: B2B Web Landing Page, Interface design, Sustainable Waste, User psychology, Customer Behaviour, Preferences

INTRODUCTION
1.1 Background

Digitization is particularly essential for a company operating in a dynamic environment with innovative technologies and capacities. (Vadana et al., 2019) In a business-to-business (B2B) environment using digital technologies represents an enormous potential for business model innovation while giving opportunities for new income and value creation. Companies that can take advantage of digitalization's potential will fare better than their competitors in terms of revenue growth and operational effectiveness. The way businesses engage with sustainability is undergoing a profound transformation. The circular economy holds great significance for B2B companies as they increasingly embrace its principles. (*The Beginnings of a Global B2B Circular Economy Boom*, 2022) The B2B industry is actively incorporating circular economy principles into their innovation and design strategies, as well as complying with regulations that mandate the recycling of essential components. Jubril Ayanbunmi emphasized that B2B markets are essential to advancing the circular economy forward by facilitating the integration of refurbished products. It provided a platform for more efficient resource utilization and logistics, while also offering a centralized product portfolio from third-party sellers. Embracing the circular economy in the B2B sector can yield significant environmental and economic benefits, including reduced CO_2 emissions, lower procurement costs, and increased revenue per vehicle.('The Circular Economy', n.d.) Emergent

Africa's August 2023 academic report highlights the rapid evolution of B2B consumers, influenced by technological advancements, environmental consciousness, and shifting preferences. To effectively address these changes, businesses must proactively adopt a customer-centric approach, embrace digital transformation, prioritize sustainability, and leverage artificial intelligence and automation. (*(25) The Evolving B2B Consumer and Strategies to Prepare Your Company | LinkedIn*, n.d.). The integration insights from secondary data sources can be used to develop a comprehensive understanding of user preferences and behaviors. The secondary data encompasses a wide range of sources, including market research reports, academic literature, industry publications, and relevant studies. These sources offer valuable information on market trends, consumer behaviors, and best practices in sustainable waste management. This integration is crucial for informing the design of B2B web landing pages that align with sustainable goals and customer values.

1.2 Overview and it Challenges.

Alves mentioned the benefits of digital platforms for businesses, particularly in terms of building a strong "circle economy" and facilitating rapid growth. It also proves that digital tools and the internet can greatly improve the speed of enterprise development. However, they note that many companies fail to take full advantage of this potential due to a lack of website design. They explain that there are no specific rules for UI design preferences, which is a problem for B2B companies that provide limited information on their web interfaces (Alves et al., 2020), Some other research also mentioned that there is little research on building user interface preference websites for Thai businesses, despite the rapid growth of e-commerce in Thailand. (Limited, n.d.) Additionally, Svetlik highlighted the importance of the sustainable waste industry and the need for innovative B2B web portal login interfaces based on customer behavior and preferences to address environmental issues.(Svetlik & Lastuvka, 2022)

Firstly, an innovative B2B web portal login interface should cater to the needs and expectations of customers in the waste industry. Customers often desire convenient access and management of their waste management activities. A good login interface should offer user-friendly features, including real-time data tracking, report generation, and appointment scheduling. Moreover, the interface design should be clear and concise for ease of understanding and operation by customers. By meeting their needs and expectations, researcher can help them better manage and control waste while driving sustainability. Furthermore, an innovative B2B web portal login interface should provide personalised services and suggestions. Each customer has unique requirements and challenges, so it's crucial to deliver personalised services and recommendations based on their behaviour and preferences. For example, for customers interested in waste recycling and reuse, researcher can provide relevant information and resources to enhance their understanding of sustainable waste management solutions. Lastly, an innovative B2B web portal login interface should foster collaboration among customers for knowledge sharing. Collaboration and knowledge exchange are vital for driving innovation within the sustainable waste industry. A well-designed login interface should serve as a platform for communication and cooperation where customers can share experiences and insights while learning from one another. By facilitating collaboration among customers through knowledge sharing platforms built into our interface design, researcher can drive innovation throughout the entire industry towards sustainable development goals. The study can process secondary data sources, such as market research reports and academic literature, to gather information on user preferences and behaviors related to sustainable waste management in the B2B sector. The data collected from these sources can be analyzed to identify key design components that could be incorporated into the B2B web landing page interface. Additionally, the study explored the connection between user preference theory and website interface design requirements, enhancing the usability of the landing page by adopting design elements from value, information, and visual design. By incorporating secondary data sources into the study, a more comprehensive understanding of user preferences and behaviors related to sustainable waste management in the B2B sector can be more comprehensive. This can affect the development of a more effective and tailor B2B web landing page interface that aligns with customer values and sustainable goals. The findings of this study have implications for B2B landing page design within the sustainable waste industry and other sectors as well.

RESEARCH OBJECTIVES

This research aims to 1) investigate the interplay between B2B web landing page UI design elements and sustainable waste management 2) synthesize a conceptual framework for a customised B2B web landing page and 3) evaluate the effectiveness of tailored landing page based on sustainable waste practices.

LITERATURE REVIEW

3.1 Sustainable Circular Economy Platform

In today's current digital environment, sustainability has emerged as a fresh trend that is mirrored in both marketing and design. Sustainable marketing encourages societal and environmental growth that is sustainable, produces ethical products, and builds brand value. A growing number of people started to create platforms that aim to reduce food waste. Most sustainable circle economy platforms aim to establish a closed-loop supply chain that will benefit all stakeholders and advance a more environmentally friendly future by bringing the companies, farmers, and waste managers specialists together. (Svetlik & Lastuvka, 2022)
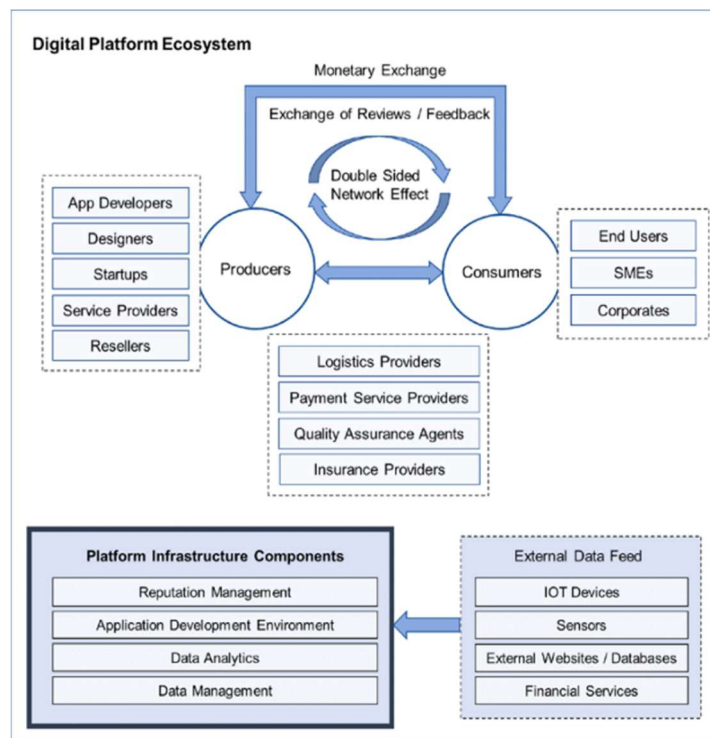

Figure 1 Actors of Ecosystem Platforms (Zutshi & Grilo, 2019)

The market formed by the platform is more complex than the traditional value chain. They generate value by collecting and connecting essential customers, producers, and suppliers (ecosystem partners), boosting interactions and transactions in multilateral arrangements, and therefore creating network effects. In various scenes, any actor can play one or more characters. (Zutshi & Grilo, 2019) Most successful platforms for reducing food waste and environmental protection all involved an easy-to-use interface, a clear organizational mission, scope, and value proposition.

There is currently a lack of a sustainable waste platform that takes user preferences into account.(Hiteva & Foxon, 2021) mentioned most business models fit system needs by adapting digital platforms, rather than participating in a negotiation process between users and system values. This approach may be suitable for the short-term project, but it may have problems in the long term. For example, if a

platform is designed to maximise user engagement and profit, it may result in users being exposed to content that is inappropriate or detrimental to them. In addition, this approach can help with the trust issue between users and the platform and effective control over their data. (Eg et al., 2023) Currently, there are limited environmentally friendly ways for individuals to dispose of waste that do not align with their values and preferences. Many waste management systems are generic and do not allow users to choose specific treatment methods or prioritise certain types of waste. (Salvia et al., 2021)

A sustainable circular economy is a system of economics that strives to eliminate waste and enhance resource efficiency. It emphasises "closing the loop" by reusing, recycling, and regenerating materials. A platform would serve as a clearinghouse for information, resources, and collaboration, bringing together corporations, entrepreneurs, legislators, and consumers. As a result, the general design of the website should be user-friendly, visually appealing, with easy navigation and intuitive functionality. (Syahrina & Kusumasari, 2020) It should give in-depth knowledge about the circular economy and its benefits, as well as practical tools and guidelines to help businesses and consumers adopt sustainable behaviours.

3.2 B2B Web Design and User Psychology

B2B platform design poses challenges due to ecosystem complexity and the need for many integrations, they have complex persona structures with multiple personas and account hierarchies. At the same time, the adoption of a B2B platform can be complex due to the involvement of multiple stakeholders, where the buyer may not be the end user. In contrast, B2C platforms are simpler with fewer integrations and a single user persona. B2C platforms are typically designed for easy adoption by a single user who is also the buyer. (Gillespie, 2017) Pettersson (2010)'s research indicates that utilising colour and contrast can catch readers' attention and enhance readability. Schenker (2014) considered each colour are presented different themes. Blue represents security and trust, Green represents wealth and simple eyeball handling, and Orange represents aggressiveness, which are the most common colours appeal in B2B website design. The colour green is frequently used to draw attention of environmental problems and as a health and fitness products advertisement.

User psychology is a interesting theme when it comes to interacting with products development and deep into the complex inner workings of the human mind. (Lyon et al., 2020) It involved understanding the cognitive processes and factors that influence how users interact with a product, and ultimately designing and enhancing products to meet users' requirements and preferences. By gaining a deep comprehension of users' cognitive characteristics, needs, and preferences, designers can effectively meet their expectations and improve their overall experience. Personality also plays a significant role in designing user interfaces. Through interface personalization, designers can tailor elements such as colours, layouts, and font sizes to align with individual user preferences. This customization ultimately leads to a more satisfying user experience, as it caters to their specific needs and reflects their unique personality. (Alves et al., 2020) User psychology and typography are important aspects to consider when designing a product or creating content. (Svaiko, 2023) In the realm of product design and content creation, both user psychology and typography hold great importance. By comprehending the psychology behind users, designers can create designs that are user-centric and effectively cater to users' needs and emotions. Typography still is a vital component of visual communication. The careful selection of fonts, sizes, and styles can greatly enhance readability, successfully convey the intended message, and create a visually appealing design. Understanding the intricate relationship between user psychology and typography allows designers to create compelling products that not only meet users' functional needs but also provide a seamless and enjoyable user experience. By employing principles from both fields, designers can create products that effectively communicate and resonate with their target audience, ultimately leading to increased user satisfaction and success in the market. (P, 2023)

The psychological cognitive technique is a popular UI design strategy that focuses on building a user interface that is compatible with the capabilities of the brain's cognitive functions and sensory perception. According to the Oshana (2013) book mentioned, the cognitive method of user interface design is to develop a user interface that supports end users by taking into account the ability of their brains to process information and how they perceive things. This method is guided by the Unified Model of Hunt &

Lansman (1986), incorporating various principles from cognitive psychology, including memory, concentration, awareness, mental processing, and problem-solving. Memory refers to the short-term and long-term memory limits that should drive the design of information display. Users are able to devote attention to a certain amount of information at any given moment. Cognitive design should take into account how consumers interpret data from their senses. Customer's process information at different rates and in various methods for the customer's mental processing. In addition, the interface should be simple to use so that users can solve problems effectively.

The customer-centric approach is used as a design methodology that focuses on understanding the needs, preferences, and behaviors of customers to create products or services that meet their expectations. This approach involves gathering data from a variety of sources, including surveys, market research, and customer feedback, to gain a comprehensive understanding of customer needs and expectations. A customer-centric approach leverages a variety of data sources to gain a more comprehensive understanding of customer needs and preferences. This approach allows researchers to identify patterns and trends in customer behavior and preferences, which can inform the design of products or services that better meet customer needs. In the context of web landing page design for sustainable waste management, a customer-centric approach would involve gathering data from a variety of sources, including market research reports, academic literature and industry publications. By integrating insights from these sources, researchers can develop a more comprehensive understanding of customer needs and preferences, which can inform the design of web landing pages that align with sustainable goals and customer values.

3.3 Web User Interface Design Theory

UI design theory refers to the fundamental principles and concepts that guide the design of user interfaces. It involves understanding user behaviour, goals, and needs, as well as applying best practices and techniques to create interfaces that are visually appealing, intuitive, and efficient. Web design is important, not only because the purpose of designing web pages will influence the choices of web page planning and design schemes, but the findings from studies also conducted by Grabe and Bucy shed light on the powerful influence of visual information on shaping people's opinions and perspectives. (Grabe & Bucy, 2009) It is fascinating to note that visual stimuli wield a greater impact than auditory cues, emphasizing the pivotal role played by visual design in augmenting viewers' memory retention and trust in a given subject or context. (Chadwick et al., 2022) In essence, the realm of website design transcends conventional boundaries, encompassing a myriad of disciplines such as visual design, aesthetics, consumer psychology, digital media technology, and linguistics. These diverse domains converge to form a multidisciplinary landscape, enabling the creation of visually compelling and immersive online experiences. By integrating sophisticated digital media technology with artistic design principles, the marriage of art and technology offers boundless opportunities for creative expression and the expansive growth of art and culture in the digital age. Thus, website design serves as a platform for pushing the boundaries of imagination, captivating audiences, and fostering the evolution of artistic endeavours in today's increasingly interconnected world. (La-Gaffe, 2023) When envisioning the future of web design, it becomes apparent that the landscape is evolving rapidly. As approach 2023, it observes a plethora of new trends that are set to shape the way websites are created and experienced. One significant aspect is the integration of new technologies into the design process. This requires utilizing the new tools and techniques to enhance not only the aesthetics but also the overall user experience. Recently, designers' emphasis most focus on modern aesthetics, it not only attracts attention but also leaves a continuing impression on visitors.
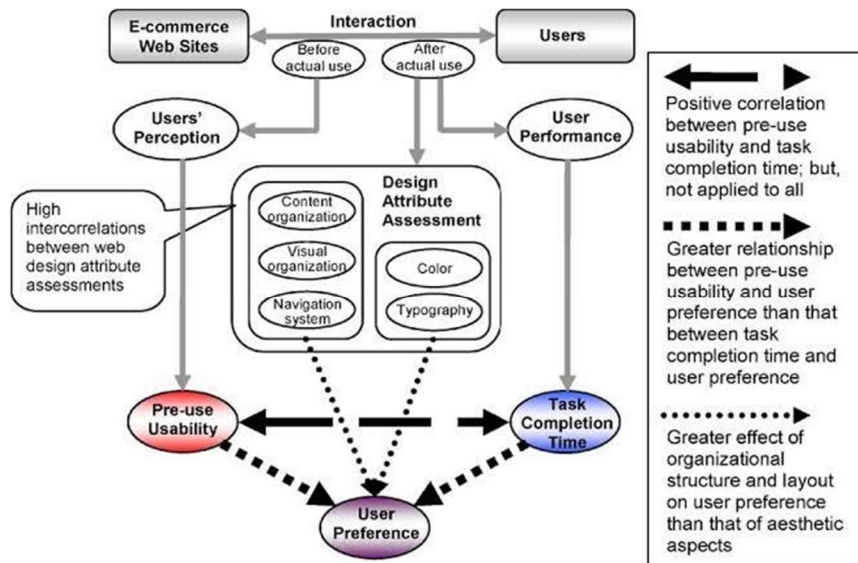
Figure 2 Conceptual Framework of User Preference Design (Lee & Koubek, 2010)

Moreover, the minimalist layout is becoming more and more popular because it puts the emphasis on cleanliness and simplicity. Websites may engage people and convey information in a more concise visual and textual manner by removing unnecessary elements. Similarly, personalization also has been demonstrated to be another crucial component in successful website design. Tailoring the content and experience to individual users can lead to a more meaningful and memorable interaction, fostering a stronger connection between the website and its visitors. (Sutcliffe, 2022) Beside these advancements, effective navigation plays a significe role in captivating audiences and maintain them participate. Users should be able to find the information they are looking for and effectively navigate the pages of a website is a standard for designing web pages. Well-organised content is another essential requirement that ensure a coherent and intuitive information presentation, allowing users to use the content easily and efficiently. Interactivity has become more and more significant in web design. Websites are no longer static entities but dynamic and interactive platforms that encourage user engagement. Through integrating interactive elements such as animations, multimedia, and user-feedback systems, designers can create websites both including visually appealing and a highly engaging and immersive experience. In conclusion, the future of web design is set to be influenced by the integration of new technologies and trends. (La-Gaffe, 2023) By combining modern aesthetics, minimalist layouts, personalized experiences, and an emphasize on effective navigation and interactivity, designers can create websites that engage audiences and provide the attracting user experiences.

3.4 Goal-centred Design Method

A design strategy known as "goal-centred design" centres on completing a certain objective or goal for the organization. Establishing company objectives and then creating goods or services to support those objectives are the fundamental steps in the design process. The design team may conduct research to understand user needs, but the primary focus is on the business goals. Design decision Alan Cooper stated that in the context of industrial services, expert-driven product development requires standardized, goal-centred design method. His project results showed that defining and modelling in goal-centred practices is a complex but essential work in B2B organizations. (Cooper, 2020) According to some study, Cooper's approach is significant since it primarily contributes to interaction design by shifting the focus from activities to the goals of the user. The authors assert that utilizing this method, in conjunction with observation, can enhance comprehension of the target market and potentially boost business success. Hyvarinen (2021) in his research emphasizes the need to define and describe stakeholders early on to frame the work correctly.

METHODOLOGY

This study is a qualitative study conducted by using Document Analysis. Its procedures comprise 1) document identification 2) verification and 3) consideration an object investigated. Also, Goal-Directed design method (Cooper, 2020) and Conceptual framework of user preference design (Lee & Koubek, 2010) were employed. The Goal-Directed design method (Cooper, 2020) includes 4 stages including Research, Modelling, Requirements and Prototype as showed in figure 3.
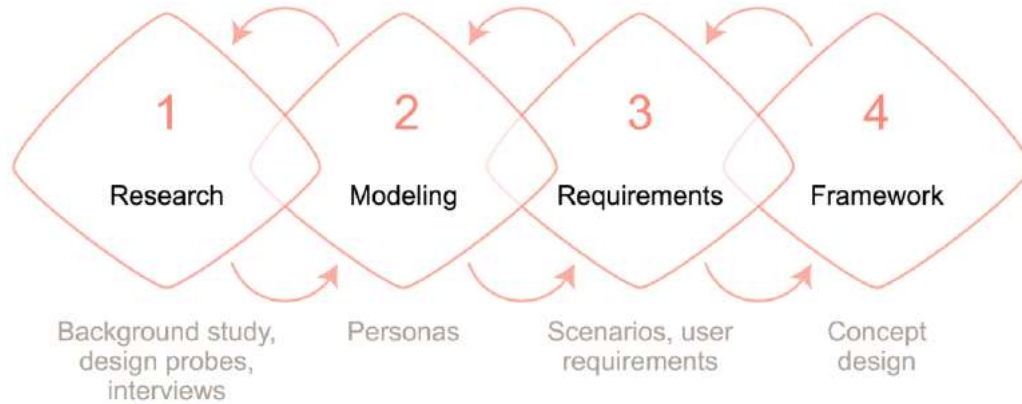

Figure 3 Goal-centered Design Method for UI Design Adopted (Halkosaari et al., 2013)

Additionally, the Conceptual framework of user preference design (Lee & Koubek, 2010) method is the study and analysis of the data in the context of web landing page design for sustainable waste management by emphasizing a customer-centric approach underscores the importance of integrating insights from various data sources to inform the design process. This approach aims to create web landing pages that resonate with a broad spectrum of customer preferences and contribute to the larger goal of sustainability and environmental responsibility.

Conveying the Goal-Directed design method (Cooper, 2020), the 4 phases can be illustrated as the following.

4.1 Research Phases

At this stage, the goals are to gather relevant data employing methods and analyze the secondary sources such as market research reports and academic literature for the collecting of information on user preferences and behaviors related to sustainable waste management in the B2B business. The data collected from these sources was consequently analyzed for a design of B2B web landing page interface. The anticipated outcome of these investigations is a comprehensive set of user preferences and behaviors that can inform the development of the web landing page for sustainable waste industries.

4.2 Modelling Phase

In this stage, the paper combined all the data obtained during the research phase and synthesized it into a domain model involving detailed diagrams and scenarios of the project. This will combine to form a persona - a complex system of potential users' personal characteristics, behaviors, and motivations.

4.3 Requirements Phase

To ensure the usability and effectiveness of the B2B landing page design, this study explored two important characteristics: colour preference and typography preference as figure 2. **(Lee & Koubek, 2010)**Expanding prior research on the connection between user preference theory and website interface design requirements, the research enhanced the usability by adopting design elements from value, information, and visual design. This approach aimed to enhance the whole user experience and engagement with the landing page.

4.4 Prototype Phase

Consequently, a researcher analysed those types of data and accordingly designed and developed a B2B landing page involving key requirements of these pages. A prototype of the B2B landing page design was developed and aimed to solve the specific design elements required for sustainable waste in the B2B areas.
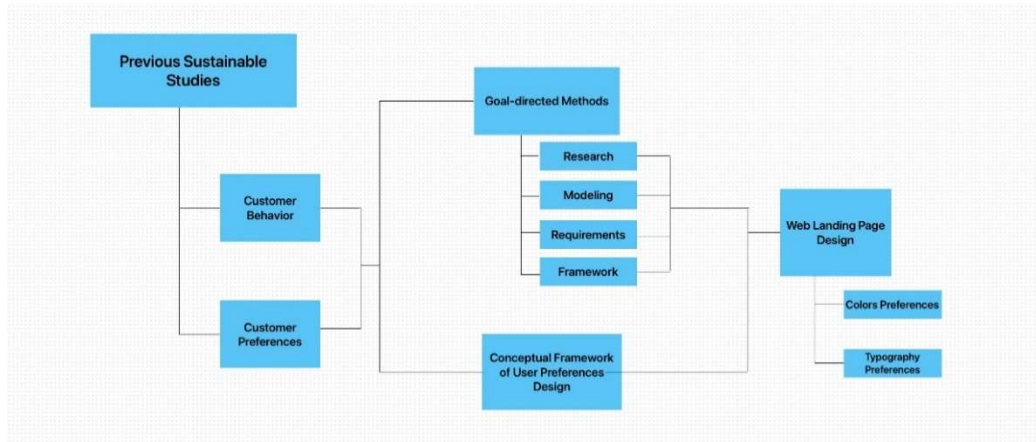
RESULTS

Figure 4 Sustainable Waste B2B landing Page UI Design Conceptual Framework

Figure 4 Sustainable Waste B2B landing Page UI Design Conceptual Framework represents the conceptual framework developed in the study. This framework is the result of the research that aimed to create customized B2B web landing pages aligning with customer values and sustainable goals in the context of sustainable waste management. The framework is designed to address the specific needs and preferences of B2B customers in the sustainable waste industry, ultimately aiming to enhance user engagement and promote sustainability.

The framework encompasses various design elements and considerations, such as colour preference, typography preference, user-friendly features, and collaboration platforms, as mentioned. It is intended to guide the design and development of B2B landing pages that cater to the unique requirements of sustainable waste stakeholders, thereby contributing to the larger goal of sustainability and environmental responsibility. The framework is a visual representation of the approach taken in the study to integrate user preferences, behavior, and sustainability goals into the design of B2B web landing pages for the sustainable waste industry.

5.1 Colour preference

Based on the sustainable industry buyers and stakeholders on secondary sources, the investigations of user preferences and behaviours can be revealed. According to B2B psychology, the use of colours can have a significant impact on individuals' perceptions and emotions. Green, brown, and blue are often associated with a sense of eco-friendliness and the outdoors, which consistent with the evidence of RS (2022) that the colours can evoke feelings of development, constancy, and dependability. In fact, D'Amato (2017) argues that the target audience is particularly inclined towards the colour green, as it is closely linked to the environment and the concept of a circular economy. This aligns with the idea presented by Khattak (2020) that the choice of colour is crucial in marketing and branding. Notably, colours serve as a pivotal element in marketing and branding strategies, as they are the first thing people notice when encountering a product or service. They have the power to establish an emotional connection with customers and portray specific feelings. Additionally, colours play a vital role in shaping individuals' perceptions of brands. Overall, by strategically utilizing colour tones, businesses can effectively engage with their target audience and enhance their brand image.
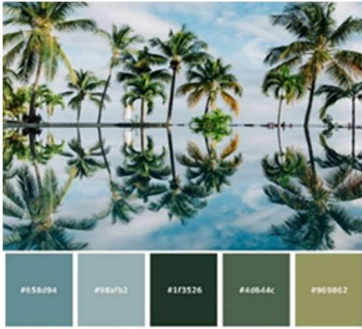
Color Palettes	Sustainable Stakeholders' Preferences (N= 80)
	45%
	33%
	23%

Figure 6 The User Preferences of Colour Palette from Sustainable Waste Projects

5.2 Typography Conference

A study on a "sustainable waste" project revealed that users of this project preferred the Times New Roman font. This comes as no surprise since Times New Roman is widely used on B2B web pages for its accuracy and legibility. In line with this finding, Svaiko (2023) supports the use of Helvetica fonts in content management systems and website builders. Svaiko further classifies fonts into serif and sans-serif categories. Interestingly, the data obtained also uncovered a relationship between font layout and user habits, which was unexpected. While most literature focuses on how font selection expresses brand value,

there are limited studies on font readability. This is likely due to the complex nature of B2B websites and their diverse audience. To cater to the needs of the B2B platform audience, adjustable font sizes are employed. This ensures that the font is appropriately sized for optimal readability and user experience. The Typography preference among sustainable waste stakeholders can be found in Figure 7 below.

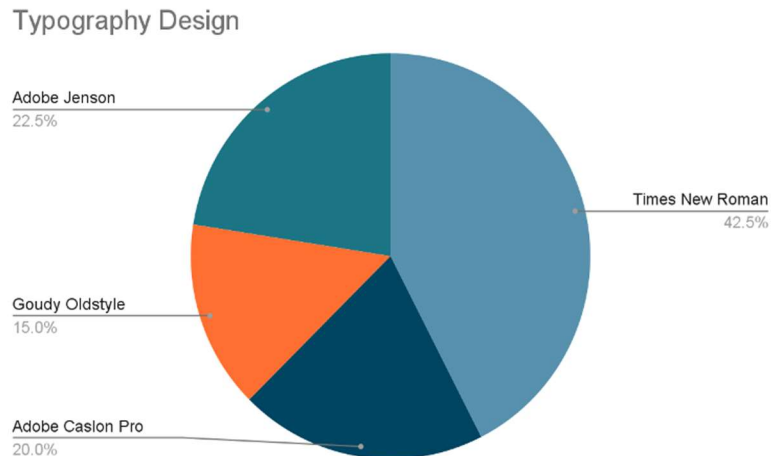**Figure 7 The Typography Preference of Sustainable Waste Users**

DISCUSSION & CONCLUSION

Overall, the investigation involves understanding customer behavior and preferences, developing a tailored framework, and evaluating the effectiveness of the designed landing pages to ensure they align with sustainable waste management practices. We examined the relationship between B2B web landing page UI design elements and sustainable waste management, explored colour preference and typography preference two important characteristics for UI design. Based on customer behaviour and preferences regarding sustainability in waste management, developed a framework for creating customized B2B web landing pages that align with customer values and sustainable goals. Our research not only fills the existing knowledge gap but also strives to make a substantial contribution to sustainable waste management in the circular economy while improving B2B landing page design. The findings of this study have far-reaching implications for B2B landing page design within the sustainable waste industry and other sectors as well. It proof customize the landing pages according to customer behaviour and preferences can greatly enhance user engagement and ultimately lead to increased conversions. The study emphasizes the value of the persona design approach, realizing that meeting the requirements and preferences of the intended audience is essential to getting the best possible outcomes. This study demonstrates the immense potential for businesses to leverage digital strategies to not only improve their customer experience but also to contribute to the larger goal of sustainability and environmental responsibility. Overall, the study provides valuable insights into B2B landing page design, highlighting the role of persona design and digital strategies in improving user engagement and promoting sustainability. These findings are applicable to various sectors and can guide businesses in driving innovation and contributing to broader sustainability goals.

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An Empirical Study on the Trade Potential and Influencing Factors between Sichuan and ASEAN: Based on an Extended Trade Gravity Model

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ABSTRACT

With the establishment of the China-ASEAN Free Trade Area and the promotion of the "Belt and Road" Initiative, the bilateral trade flow between Sichuan Province and ASEAN has increased substantially these years. At present, ASEAN has stably become the largest exporting partner of Sichuan. This study utilizes an extended trade gravity model to quantitatively analyze the factors affecting Sichuan's export to ASEAN members and explore the trade potential of Sichuan to different ASEAN members, basing on the panel data from 2011 to 2022. The results show that the GDP of Sichuan and ASEAN countries have positive influence on the exports while the population of ASEAN countries, exchange rate of RMB have negative effects on the exports volume. The trade potential with each ASEAN countries illustrates that all ASEAN countries' trade potential has not been fully developed notwithstanding the existing optimistic trading foundation. Finally, corresponding suggestions are proposed to Sichuan's local government and enterprises regarding the further development.

KEYWORDS: extended trade gravity model; trade potential; exports; belt and road initiative

INTRODUCTION

ASEAN is the abbreviation of the Association of South East Asian Nations, which is firstly established in Bangkok, Thailand in August 1967. Until now, ASEAN covers ten Southeast Asian countries including Indonesia, Malaysia, Philippines, Thailand, Singapore, Brunei, Vietnam, Myanmar, Laos and Cambodia. In the November of 2010, China and ASEAN officially signed the framework agreement on comprehensive economic cooperation, which marked the official start of the China-ASEAN Free Trade Area establishment. The "Belt and Road" Initiative is a milestone and a long-term strategy proposed by the Chinese government, aiming at promoting a transnational network of economic development and integration tunnels that connecting China domestic and abroad. Huang (2016) claimed that this initiative covers vast regions in Asia, Europe and Africa, which accounts for around 64% of world population and 30% of world GDP. It has been ten years since the first proposal of this initiative and the bilateral trade flow between China and the ASEAN countries was witnessed to climb greatly through the ten years. In addition, the signing of the Regional Comprehensive Economic Partnership Agreement (RCEP) had also brought new and unique development opportunities for the cross-border e-commerce industry between China and ASEAN (Luo, 2023). Moreover, with the successful signing of the China-ASEAN Strategic Partnership Vision 2030, the trade partnership between China and ASEAN is foreseeable to become ever closer. From a geo-economic point of view, the unique geographical position has brought great advantages to the bilateral trade between China and ASEAN. Among the ten ASEAN member countries, some of them border with China, so they can conduct cross border trade more conveniently. In the year of 2019 and 2020, ASEAN has become the largest exporting partner of China, surpassing EU and America. Even throughout the three years since the outbreak of COVID-19, trade between China and ASEAN has kept the increasing tendency. At the same time, China is also ASEAN's largest trading partner. As suggested by Ni and Niu (2023), this consistent rising tendency demonstrates the strong resilience of the bilateral economic and trade cooperation. In a word, it is apparent that ASEAN has crucial strategical significance on the exports of China. However, due to China's vast territory, the development level, economic advantages and strategic

priorities regarding international trade vary among different provinces. For instance, southern part of China will focus their exports with Southeast Asian while the western part of China will build stronger trade relationship with Middle East Asia. Moreover, it is objective that the eastern part of China is more economically developed due to its geographic location near the sea. As a result of above reasons, analyzing the trade potential between China and ASEAN at the national level is not necessarily efficient and representative. In addition, in order to effectively prevent the further widening of the gap between the economic development level between Eastern China and Western China, regional researches become particularly important. Therefore, this article takes the Sichuan Province as the specific research object.

There are several advantages to choose Sichuan as the focal context to explore the influencing factors and trade potential with ASEAN. Firstly, Sichuan and ASEAN have special geographic relation. Sichuan is located in the hinterland of Southwest China, where is seen as the bridge and bond connecting Western China and ASEAN. On one hand, it is the main traffic route for China to enter ASEAN from the southwest region. On the other hand, Sichuan also works as the main channel for ASEAN to enter China's inland areas through Yunnan, Guangxi and Guizhou Province. Regarding the exports of Sichuan, the products from Sichuan can enter ASEAN directly from the southwest land routes without going around the South China Sea. According to Peng (2016), the development of land and water transport between the southwest region of China and Southeast Asian countries can shorten the transport distance of more than 3,000 kilometers, the freight can be reduced by 60%, and the operation time can be reduced by more than half, when comparing to the two sides bypassing the South China Sea. In addition, the development level of Sichuan is less competitive compared with other developed provinces in China, which can help to reveal the deeper and longer-term impacts of the China-ASEAN Free Trade Area and the Belt and Road Initiatives.
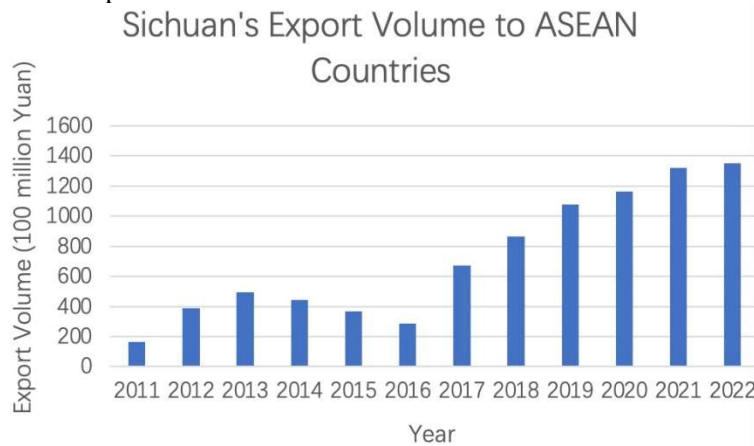
Figure 1. Sichuan's export volume to ASEAN countries
Data obtained from Sichuan Provincial Department of Commerce

From Figure 1, Sichuan's exports with ASEAN have gone through three phases over 2011 to 2022. The first phase was from 2011 to 2013 when the export volume increased stably, while starting from 2013 to 2016, the exports kept a declining trend. Then there was a sharp rise of the exports volume and this growing tendency is maintained in the following years until now. Even in the period of COVID-19, the total export volume continues to climb from year 2021 to 2022 against the overall declining global trade environment, which demonstrates the strong resilience of the Sichuan-ASEAN trade relationship.
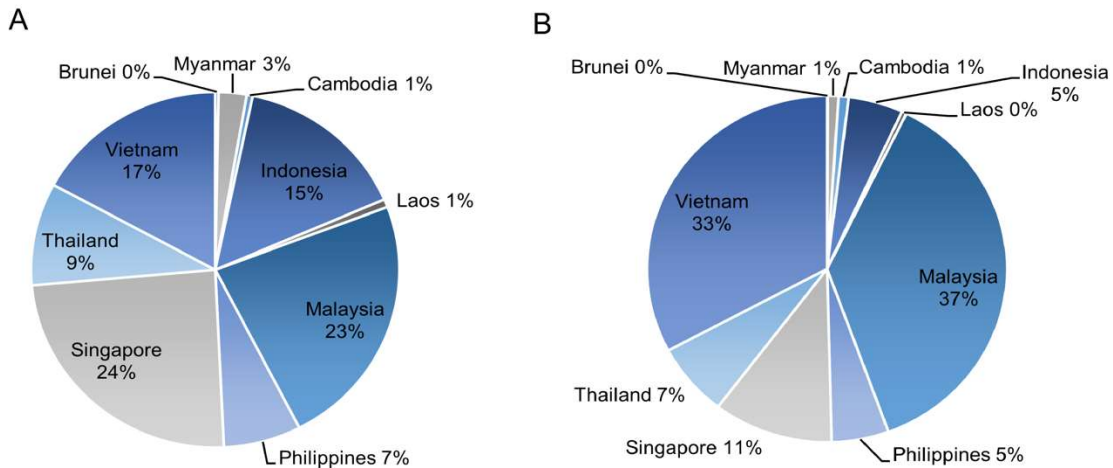
Figure 2. The Proportion of Sichuan's Exports to ASEAN Countries in 2011 and 2022
Data obtained from Chengdu Custom

Figure 2 displayed the proportion of Sichuan's exports to ASEAN countries in year 2011 and 2022. Analyzing by the export volume with different countries within ASEAN for the last twelve years, there was a huge increase relating the Sichuan's exports with Vietnam, which almost doubled from 2011 to 2022. The increase in export volume with Malaysia was also manifest which has climbed from 23% to 37%. In the meantime, the proportion of Singapore and Indonesia witnessed major decline.

As Ning (2022) suggested that from 3rd December 2021, the China-Laos railway was fully opened to traffic, marking the successful completion of Sichuan's first land bridge trunk transport channel with the ASEAN region. The China-Laos railway starts from Rayong, Thailand, routes through Vientiane, Laos, Yunnan Province and then confluence with Chengdu[1] International Railway. As a result, it is predictable that the trade exchange between Sichuan and ASEAN countries will enter a new booming stage as long as Sichuan and ASEAN give sufficient attention.

RESEARCH OBJECTIVES

Sichuan and ASEAN countries are geographically close and culturally friendly, which is an important channel connecting China and ASEAN countries. Especially under the new background of ASEAN surpassing both USA and EU and becoming the largest export partner of Sichuan since 2019. ASEAN is seen to be a new growth point of Sichuan's opening up to the global market in recent years. Therefore, how to develop the bilateral trade between Sichuan and ASEAN is worth much attention. However, the existing research has not paid enough attention to the development of bilateral trade between Sichuan and ASEAN. It also rarely examines the specific influencing factors and trade potential of the bilateral trade between Sichuan and ASEAN. Therefore, the proposed exporting path and countermeasure needs to be further optimized.

In view of this, based on the background of China-ASEAN Free Trade Area, Belt and Road Initiative and RCEP, this paper investigates the influencing factors and trade potential of exports between Sichuan and ASEAN members through the building of extended trade gravity model, and seeks the corresponding trade potential. So as to provide certain directions for improving the export potential of Sichuan and ASEAN member in the future and expand the bilateral trade space. It provides reference for Sichuan's production, processing and export enterprises, and offers policy suggestions for Sichuan's relevant government departments to formulate export policies for ASEAN countries. To sum up, under the context of all these favorable policies and infrastructure built, what factors have affected Sichuan's cross

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[1] Chengdu is the capital city of Sichuan province.

border exports to ASEAN countries? What is the exports trade potential of Sichuan Province with each ASEAN countries? These are the two main problems being explored in this paper.

The rest of this study is arranged as follows: Section 3 reviews the recent related literature. Section 4 introduces the research methodology and the building of the extended trade gravity model. Section 5 reports the corresponding empirical results and the estimation of trade potential using the generated trade gravity model. Last but not least, section 6 contains the discussions and suggestions based on the conclusions draw by this study.

LITERATURE REVIEW

In the existing literature, most of the studies use the trade gravity model to investigate the influencing factors of bilateral trade and trade potential with ASEAN countries from the national level. There are seldom researches that are set on a specific region or province. For example, Ni and Niu (2023) conducted the analysis based on a structural gravity model to explore the bilateral trade effects of the Belt and Road Initiative on China-ASEAN countries. Kong and Dong (2015) analyzed the trade potential of countries along the Belt and Road with China as a whole under the expanded gravity model. Shan and Yang (2006) introduced more variables such as the number of ethnic Chinese and Chinese language capability based on the original trade gravity model to obtain the conclusion that there is huge trade potential between China and ASEAN. Another type of research direction focuses on the exports impacting factors and trade potential with ASEAN in a specific industry. Cao et al (2023) measured the trade potential of China's exports of high-tech products to ten ASEAN countries and found that the level of economic development, population, transportation cost, common border and trade openness of China and ASEAN have a significant impact. Wang et al (2023) conducted the trade potential analysis of China′s edible mushroom products exported to ASEAN Countries. Jiang et al (2023) built a gravity model to study the trade potential of China-ASEAN fruit trade, and concluded that ASEAN fruit export trade has a good prospect. According to the empirical study of Zhao and Lin (2008), the total GDP, population, distance and institutional arrangement are the main factors affecting the bilateral agricultural trade flow between China and 10 ASEAN countries, and the development potential of agricultural trade between China and most ASEAN countries is huge. Chen et al (2023) built an extended trade gravity model to calculate the trade potential of electronic and electrical equipment between China and ASEAN countries.

Nevertheless, most of the existing studies have analyzed from a macro perspective, but have not paid enough attention to the obvious development heterogeneity among Chinese provinces. As Liu and Cao (2022) suggested, the imbalance of economic development among provinces was relatively obvious. To ignore such differences between regions will not only produce certain assessment errors, but also fail to provide targeted suggestions for key provinces and cities to improve trade volume and explore trade potential. Although few scholars have analyzed the impact factors and the trade potential from the perspective of Chinese provinces and cities. For instance, Zhu and Zhu (2018) investigated the influencing factors of exports in Chongqing Province and found FDI and GDP have a positive effect while the price of export products and the exchange rate of RMB are negatively related. Zheng and Ju (2007) analyzed the factors affecting Shandong province's export trade using multiple regression. The results show that economic development, export market structure, product/industrial structure and employment have promoted Shandong's foreign trade export.

To sum up, the existing research on trade potential is quite fruitful, which provides a strong foundation and support for this study. This paper intends to take Sichuan's exports and trade potential with the ten ASEAN countries as the research object. And by building a trade gravity model after analyzing the potential influence factors of Sichuan's exports to ASEAN countries, this research measures the relevant trade potential and investigates its driving force, so as to put forward targeted suggestions for the Sichuan government. Compared with previous studies, this study has the following differences: Firstly, from the perspective of research object, it is the first time to focus on Sichuan, the non-developed provinces in Southwest China, to explore the exports relationship with ASEAN countries. Next this study used an extended trade gravity model rather than the traditional trade gravity model to explore the influencing

factors of exports. Then after the influencing factors are decided, the trade potential of each ASEAN countries is calculated to further explore the future trade strategy.

RESEARCH METHODOLOGY
Model specification

The trade gravity model is widely used in the field of international trade flow research currently. Tinbergen (1962) and Poyhonen (1963) first established the basic trade gravity model, which is expressed in the form that the bilateral trade volume is directly proportional to the GDP of both sides of the trade and inversely proportional to the geographical distance between the two sides. The logarithmic representation of the model is generally:

$$\ln EX_{it} = \alpha_0 + \alpha_1 \ln GDP_i + \alpha_2 \ln GDP_j + \alpha_3 \ln DIS_{ij} + \mu_{ij}$$

$$(1)$$

Anderson (1979) further pointed out that the trade flow here refers to the single trade flow between two countries. On the basis of the basic trade gravity model, Linnermann (1966) introduced population factor and Bergstrand (1989) introduced per capita income, exchange rate and several dummy variables to investigate the impacts of other factors other than basic variables on trade flow. In a word, after decades of development, the trade gravity model has become more and more complete and diversified according to the specific research topic. There are many factors affecting bilateral trade flows, like political, economic, cultural and social factors can all promote or hinder trade between the two countries to varying degrees. In the foreign trade research field of China-ASEAN Free Trade Area and the "Belt and Road" Initiative, after considering the existing research basis, research purpose and the availability of explanatory variable data, this paper establishes the following extended trade gravity model based on the basic setting:

$$\ln EX_{it} = \alpha_0 + \alpha_1 \ln GDP_{sc} + \alpha_2 \ln GDP_i + \alpha_3 \ln DIS + \alpha_4 \ln POP_i + \alpha_6 ER + \alpha_7 EF + \alpha_8 PS + \mu_{ij} \quad (2)$$

In model 2, EX_{it} denotes the export volume of Sichuan to different ASEAN member country i in t year, the data is acquired from Chengdu Custom. GDP_{sc} is the GDP of Sichuan, GDP_i is the GDP of i trading countries, DIS stands for the distance between Sichuan and the trading countries. POP is the population of trading country, ER is the exchange rate of RMB, EF denotes the economic freedom of trading country and PS is the index of political stability and absence of violence/terrorism. α_0 is the constant term, and α_k is the regression coefficient of each variable (k=1,2,3,4,5......), μ_{ij} is the random variable.

Variable selection and explanation

The GDP of Sichuan and ASEAN countries represent the economic scale of two sides of trade, and also represents the supply and demand capacity of each country for imports and exports, which affects the trade scale of each country. The greater the economic scale, the bigger the trade volume. In the meantime, the geographical distance between Sichuan and the ASEAN countries represents the level of trade costs, and the distance is not conducive to the flow of trade between the two countries. Population of ASEAN countries will affect the balance of supply and demand of trading goods, and the increase in the number of people will increase the demand, thus expanding the volume of exports to this country. Exchange rate is the most fundamental index influencing a country's cross border trading. For Sichuan, the appreciation of RMB will lead to the decline of profits of export enterprises, thus weakening their competitiveness in the global market. The index of economic freedom is an annual report published by the Wall Street Journal and the Heritage Foundation. It is one of the most authoritative indicators that reflecting the development level of the economic system of each country in the world. The specific index incorporated in the index of economic freedom is demonstrated in table 1. Overall, this index displays the institutional constraints that a country subject to in conducting foreign trade. The higher the value of this index, the smaller the institutional constraints, the greater the intensity of opening up to the outside world, and also indicates that the country has diversified international trade market choices. A relatively free trade environment can provide a loose policy environment and a free market atmosphere for the economic and

trade cooperation between Sichuan and ASEAN countries, and reduces the loss of trade efficiency. The index of political stability and absence of violence/terrorism of ASEAN country measures the stability of the international trade environment of trading countries, which is an essential factor for Sichuan's enterprises to consider when deciding their cross-border commerce. Thus, it is foreseeable that country with higher political stability and no violence or terrorism will attract more exports. The meanings, expected symbols and data source of each explanatory variables are shown in Table 2. In order to avoid the influence of extreme values of variables and overcome the heteroscedasticity problem, all continuous variables are taken as natural logarithms.

Table 1 Composition of Index of Economic Freedom

Appeared time	Name of index
2009 first announced	Property Rights
	Government Integrity
	Tax Burden
	Government Spending
	Business Freedom
	Labor Freedom
	Monetary Freedom
	Trade Freedom
	Investment Freedom
	Financial Freedom
2017 new added	Judicial Effectiveness
	Fiscal Health

Table 2 The meanings, expected coefficient and data sources of variables

Symbol	Meaning	Data Source	Expected coefficient
GDPsc	GDP of Sichuan	Sichuan statistical yearbook	+
GDPi	GDP of ASEAN country	WDI database	+
DIS	Distance between Sichuan and ASEAN country[2]	Baidu Map	-
POPi	Population of ASEAN country	WDI database	+
ER	Exchange rate of RMB	WDI database	-
EF	Index of Economic Freedom of ASEAN country	The Heritage Foundation	+
PS	Index of political stability and absence of violence/terrorism of ASEAN country	WDI database	+

RESULTS
Model building and empirical results

In this study, Stata 17 software is used to calculate the influencing direction and magnitude of each factor on the exports volume of Sichuan with ASEAN, and the trade volume estimation equation is then obtained. After calculating the estimated trade volume with each ASEAN countries, they are compared to the actual exports volume to analyze the trade potential with each ASEAN countries.

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[2] Measured by the air distance between Sichuan's capital city Chengdu and the capital of ASEAN countries.

Before determining which effect is selected for regression, sample data need to be tested, and the test results are shown in Table 3. First, the F test is used to choose between FE model and POLS model. The result shows that the original hypothesis is rejected and the FE model is better than POLS model. Next, the BP test is used to determine whether RE model is more suitable than POLS model. The result shows that the original hypothesis is rejected, and the RE model is better than the POLS model. The third step is to perform Hausman test when determining between FE model and RE model. If the P-value of the result is less than 0.05, the FE model should be selected; otherwise, the RE model should be selected. After executing the Hausman test, the p value is 0.0273, which rejects the original hypothesis, indicating that the FE model selected has better fitting effects.

Table 3 Results of F test, BP test and Hausman test

Test Method	Test Results	Implication
F test	Prob > F = 0.0000	FE better than POLS
BP test	Prob > chibar2 = 0.0000	RE better than POLS
Hausman test	Prob > chi2 = 0.0273	FE better than RE

In order to ensure the stability of the regression model, POLS, FE and RE regression methods are all used to analyze the data. Model 1, 3 and 5 are the basic regression results and model 2, 4 and 6 are the extended regression results. The configuration is shown in Table 4.

Table 4 Empirical Results of Regression

	POLS		RE		FE	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
ln GDPsc	0.488*	0.377	0.476***	0.817***	0.331	1.725***
	(0.262)	(0.243)	(0.178)	(0.232)	(0.351)	(0.491)
ln GDPi	1.074***	1.082***	1.101***	1.694***	1.430**	0.800
	(0.063)	(0.161)	(0.200)	(0.420)	(0.715)	(0.951)
ln DIS	-0.861***	-1.746***	-0.892	-1.274	0.000	0.000
	(0.242)	(0.263)	(0.801)	(1.017)	(.)	(.)
ER		-0.245		-0.352*		-0.316
		(0.304)		(0.205)		(0.202)
ln POPi		0.242		-0.634*		-3.364
		(0.155)		(0.377)		(3.778)
PS		0.858***		-0.221		-0.498**
		(0.151)		(0.232)		(0.250)
EF		0.016		-0.043*		-0.061***
		(0.015)		(0.022)		(0.023)
_cons	-4.436	-0.129	-4.763	-4.782	-18.550	46.548
	(3.328)	(3.444)	(6.612)	(7.849)	(15.050)	(54.709)
N	120	116	120	116	120	116

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

According to the Hausman test, fixed effect regression is better than random effect. However, as demonstrated in Model 5 and Model 6, the parameters of the distance between two trading partners cannot be estimated under the fixed effect model, due to the distance not changing over time. Nevertheless, considering that distance is the baseline factor of the original gravity model and cannot be neglected. As a result, this study utilizes the random effect model to complete the regression. According to the empirical

results in table 4, model 4 can better explain the bilateral trade flow between China and ASEAN countries, but not all variables conform to the previous expectations, the detailed analysis is as follows:

Firstly, it is manifest that the distance between Sichuan and ASEAN countries, though being negative as expected, is not significant. The reasonable explanation is that as we set our research object solely on Sichuan province, which is situated in the south-west of China and thus it is relatively close to each ASEAN countries geographically. Moreover, the distance difference between each ASEAN countries is also small considering they belong to the same geographical region at the first place. So, we can infer that under this specific regional study, the distance does not make a big difference so this variable is not significant. Next, the population of ASEAN countries has negative effects, which is also against our original assumption that the bigger the population the bigger the trading market and power of consumption. The reason behind could be that as there are only ten ASEAN countries so the country heterogeneity is magnified in this relatively small dataset. For example, the population of Indonesia is larger than the rest of the ASEAN countries while its exports volume from Sichuan is relatively small. Based on the results of model 4 in Table 4 and after eliminating the variables without enough significance, the regression equation of export volume between Sichuan and ASEAN is reconstructed as follows:

$$\ln EX_{it} = -12.609 + 0.878 \ln GDP_{sc} + 1.316 \ln GDP_i - 0.256 \ln POP_i - 0.312 \, ER - 0.038 \, EF \quad (3)$$

Trade Potential Estimation

The theoretical value of export volume from Sichuan to ASEAN countries can be estimated by equation (3), and the trade potential can be estimated by the ratio of the actual value of exports to the theoretical value. The formula is as follows:

$$TP_{it} = EX_{it} / EX^*_{it} \quad (4)$$

In equation (4), TP_{it} represents the trade potential coefficient of Sichuan's exports to ASEAN countries, EX_{it} represents the actual export volume and EX^*_{it} represents the theoretical export volume calculated by the extended gravity model. In this study, we referred to the classification of trade potential proposed by Liu and Jiang (2002) to divide ASEAN countries into three categories according to the export trade potential coefficient. Countries with ratio equal to or greater than 1.2 being the "potential reconstruction type", ratio between 0.8 and 1.2 being the "potential expansion type", and ratio less than or equal to 0.8 being the "great potential type". The calculated trade potential coefficient with ten ASEAN countries from 2011 to 2022 using equation (4) is shown in Figure 3 and Figure 4. Figure 3 demonstrates the actual, estimated exports and trade potential coefficient of each country from 2011 to 2022. Figure 4 shows each ASEAN countries' average trade potential with Sichuan from 2011 to 2022. On the whole, all ten countries' trade potential situate between 0.8 to 1.2, which indicates that all ASEAN countries are considered as potential expansion type to Sichuan. On one hand, the potential expansion type illustrates that overall Sichuan has already established basic trade relationship with ASEAN countries, considering its favorable geographical location. On the other hand, its trade potential with different countries have not been fully exploited yet. From the information disclosed in Figure 4, Malaysia and Thailand have relatively highest trade potential coefficient. Next followed by Cambodia, Laos and Philippines with coefficient all excessing 1. Singapore, Vietnam, Myanmar, Indonesia and Brunei have relatively lower trade potential coefficient which indicates there exist larger market opportunities for Sichuan's government and enterprises to explore regarding the bilateral trading.
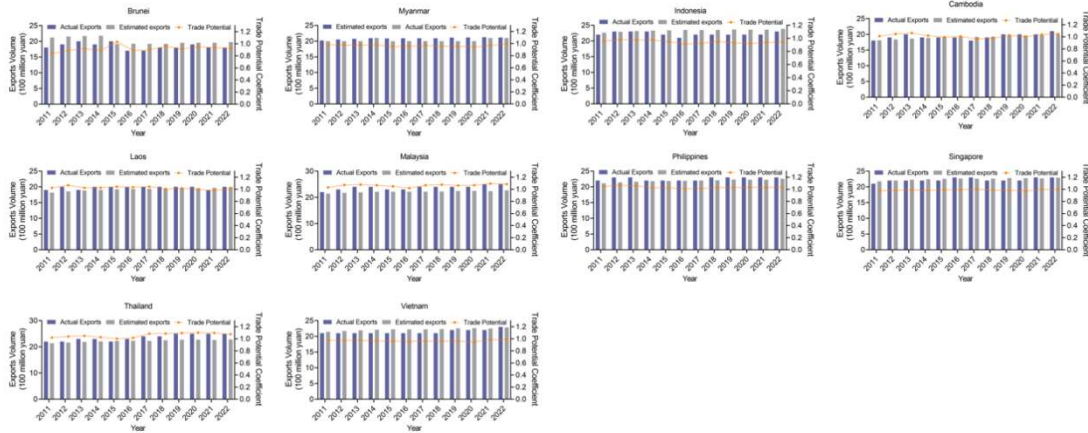
Figure 3: The actual exports, estimated exports and trade potential coefficient
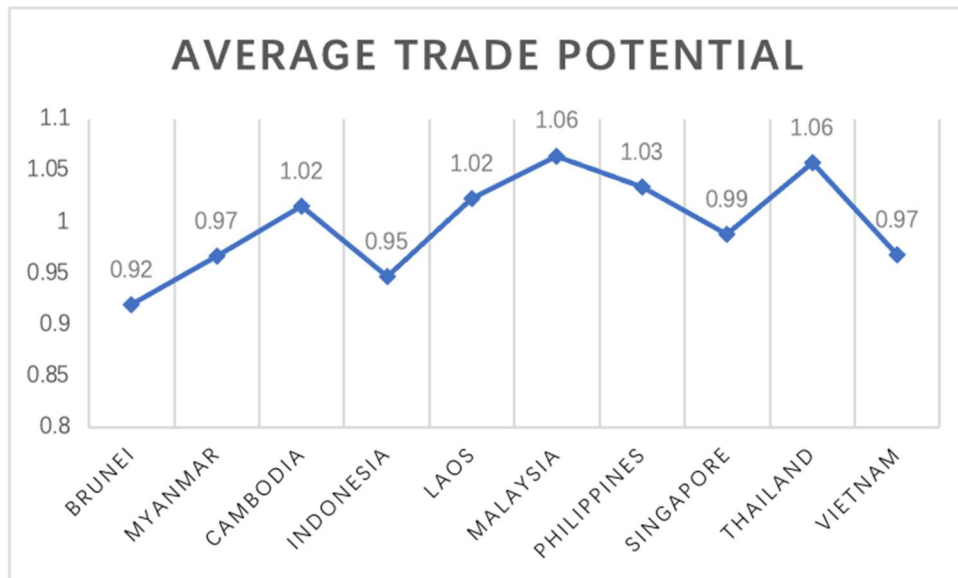
Figure 4: Average trade potential from 2011 to 2022

CONCLUSION

Faced with the challenges of the situation that the world has not undergone major changes in a century and the global epidemic in recent years, China's trade and economic cooperation with ASEAN member has injected vitality into the global economic recovery. Based on the Sichuan - ASEAN exports panel data from 2011 to 2022 and the trade gravity model, this paper further explores the influencing factors of Sichuan exports to ASEAN and the bilateral trade potential, and draws the following conclusions:

1) Regarding the potential influencing factors, the GDP of both Sichuan and ASEAN countries have positive impact on the exports of Sichuan, and the impact from the GDP of ASEAN countries is greater. Moreover, the population of ASEAN countries, exchange rate of RMB and the economic freedom of ASEAN country have negative effect on the exports volume. In the meantime, the influence degree from the distance and the political stability and absence of violence/terrorism of ASEAN country are not significant enough.

2) Next, Sichuan's trade potential with each ASEAN members is tested using the generated extended trade gravity model. In general, all ASEAN countries have built preliminary export trade relationship with Sichuan, but the trade potential are far from fully developed and needed

to be exploit further. Specifically, the trade potential with Malaysia and Thailand are more developed than other ASEAN countries.

As the closest international market to Sichuan, ASEAN is bound to become the priority trade object of Sichuan due to geographic factors and zero tariff policy. As the trade between Sichuan and ASEAN through the southwest region can shorten the transportation distance and time of bilateral trade, reduce transportation costs and reduce business risks. The bilateral location advantage has been attached great importance by the government and has been significantly improved these years. Based on the analysis of above research, the following suggestions are proposed to further increase the exports of Sichuan to ASEAN:

1) The GDP level of both Sichuan and ASEAN countries have significant positive impacts on the exports volume, while the promotion effect of ASEAN countries' GDP is greater. However, as Lu and Lian (2011) believe that export trade is a cross-border market behavior, which will be subject to dual constraints of domestic and foreign factors. Although the construction of the China-ASEAN Free Trade Area and "Belt and Road" Initiative provide strong external demand support for further releasing the trade potential of Sichuan and ASEAN, this external demand is often accompanied by strong uncontrollability. And how to further improve the level of effective domestic supply is more practical to Sichuan government. Therefore, Sichuan should maintain a good economic development trend to promote exports.

2) Next, as pointed out by Ning (2022), the advantage industries of Sichuan and ASEAN are highly complementary. The electromechanical products, clothing and steel exported by Sichuan are what ASEAN has high demands, while the mineral products, rubber products, grain and agricultural products exported by ASEAN are also important raw materials for Sichuan's food, beverage, energy and chemical industries. The above industries should maintain the good developing trend and keep strengthen technological innovation, optimize industrial structure to further expand the trade potential. In addition, Sichuan can also tap the potential of a number of characteristic industries, which currently have small trade volume, but belonging to the category of China-ASEAN trade cooperation field, such as tourism, transportation, telecommunications, metal products, Shu brocade fabrics, Chinese medicinal materials and so on. These industries have great development potential and can increase the type of goods exported to ASEAN, promote the growth of bilateral trade consequently.

3) As each ASEAN countries' trade potential with Sichuan varies, specific strategy should be set regarding different countries. For instance, Malaysia and Thailand have the highest trade potential coefficient among all ten countries. This indicates that the two countries are in the rapid development stage with stronger trade foundation and relationship with Sichuan. Considering that all ASEAN countries belong to the potential expansion type, the enterprises and government of Sichuan are suggested to focus more resources on these two countries with a more mature exports foundation.

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Presenting Global Brands with Celebrity Endorsement through Impression Management: A Case Study of 12 Brand Archetypes

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ABSTRACT

This research aims to investigate the relation between 12 brand archetypal presentations and celebrity endorsement through impression management. Twelve global brands in the personal care category and corresponding famous or industry-excellent celebrities with more than 1 million fans on social media platforms were selected as the case study. Purposive samples of their endorsing advertisements within the period of 2018 - 2023 were textually analyzed. Analysis results reveal that celebrities manage their public impression by enhancing three major characteristics of source credibility - expertise, trustworthiness, and attractiveness. Specifically, the integration between endorsement and lifestyle, archetypal performances and psychologically dimensional performances of celebrities contribute to positive image establishment, which reflects archetypal positioning of global brands. Strategic implications for global brands and celebrity's impression management are provided. With intentional and unintentional exposures to the fan base, details of both private lives and public performances shape more subjective perceptions of celebrities and further enhance brands' archetypal recognition.

KEYWORDS: 12 brand archetypes, Celebrity Endorsement, Dramaturgy, Impression Management

INTRODUCTION

Archetypes are the heartbeat of a brand. Consumers with different cultural and educational backgrounds would unconsciously assign brands to a certain archetype based on their own understanding. Impression management from endorsed celebrities could bolster brand image. For instance, to promote the campaign of Vital Perfection, the premier age-defying skincare products, Shiseido invited Oscar-winning actress, Anne Hathaway to be the ambassador and released the advertising video, which features the slogan 'potential has no age' (Web- 5). This campaign connects Shiseido's brand story of demonstrating the power of elegance, bravery, and determination with mature female consumers. To fill the research gap regarding the relationship between celebrity endorsement and impression management of global brands, this study aims to understand how global brands use celebrity endorsement to present 12 brand archetypes through impression management.

LITERATURE REVIEW
Brand Archetype

Brand Archetype refers to the concept of Carl Jung's 12 Brand Archetype Theory (1928), which manifests 12 types of general brand personas. Concisely, brand archetypes could be categorized into 12 dimensions, which include Innocent, Everyman, Hero, Outlaw, Explorer, Creator, Ruler, Magician, Lover, Caregiver, Jester, and Sage. The development of the 12-brand archetype theory is a process of continuous expansion and refinement along with the social ideology development. According to Jung's research (1928), universal symbols and themes are deeply ingrained in the human psyche. As theorized ancestral consciousness becomes a precursor to the brand archetype theory, consumers gradually turn to brands less

as bundles of utility but more as badges that convey social meaning and that have the power to generate social acceptance (Waqas, Hamzahm & Mohd Salleh, 2021). With the development of brand communication, Margaret Mark and Carol S. Pearson (2001), authors of *The Hero and the Outlaw: Building Extraordinary Brands Through the Power of Archetypes*, theoretically identified 12 brand archetypes associated with certain personality traits, values, and motivations based on Jung's discovery, as shown in Figure 1 and Table 1.
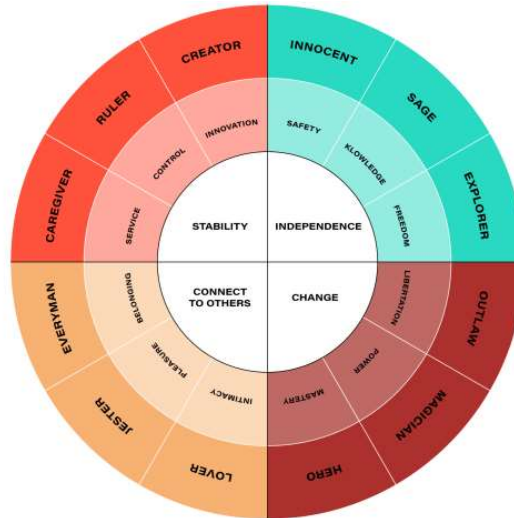
Figure 1: Twelve Brand Archetypes Theory Model
Source: Dyrlaga, S. (2023). A Warrior or a Jester: all you need to know about brand archetypes.
Retrieved July 15, 2023, from Admind website: https://admindagency.com/blog/brand-archetypes-all-you-need-to-know/

Table 2: Description of Twelve Brand Archetypes

No.	Brand Archetype	Description	Archetypal Values
1	Outlaw	The Outlaw disobeys traditional regulars and always show their determination to fight for freedom and innovation.	Distinctive, bold, rebellious, and unconventional
2	Magician	The Magician is good at turning sorrows into happiness and bringing surprises into lives for souls earning for peace and love.	Entertaining, enchanting, compelling, and imaginative
3	Hero	The Hero struggles to prove that everyone can be extraordinary instead of being ordinary after breaking challenges down.	Recognized, insistent, motivate, inspiring, and brave
4	Creator	The Creator will utilize an innovative way to pursue truths and dreams for making this world better.	Influential, iconic, creative, convenient, and revolutionized
5	Lover	The Lover refers to an ideal image of an intimate partner who is gentle, caring, and romantic.	Graceful, romantic, sophisticated, and fascinating
6	Jester	The Jester with carefree characteristics can drive everyone to encounter original satisfaction in a fancy wonderland.	Colorful, playful, delightful, enjoyable, and comfortable
7	Everyman	The Everyman constructs a sense of security under the familiarity and belongings.	Approachable, convenient, affordable,

No.	Brand Archetype	Description	Archetypal Values
			and entertaining,
8	Caregiver	The Caregiver offers help with warmth and empathy by respecting all the virtues and origins from others.	Caring, self-accepting, protective, and friendly
9	Ruler	The Ruler refers to the control of orders, reflecting ambitions and superiority from elites.	Luxury, pioneering, superior, and perpetual
10	Innocent	The Innocent has strong connections with purity and harmony, focusing on turning complexity into simplicity	Pure, caring, soothing, natural, safe, and gentle
11	Sage	The Sage tends to pass on wisdom to people applying knowledge to improve life quality and further change the world.	Esteemed, rigorous standards, wise, and inclusive
12	Explorer	The Explorer insists on adapting a self-breaking way to gain spiritual independence and pioneering achievements.	Innovative, responsible, pioneering, and professional

Impression Management

According to Lee, Chang & Zhang (2022), consumers expect congruity between a celebrity endorser's image and the brand being endorsed. When the sense of style of a celebrity is in line with the brand positioning, it would psychologically affect perceived values associated with ideal images of customers before making purchasing decisions (Liao, Wu & Pham, 2020).

The Source Credibility Theory was proposed by Hovland (Web-1), which could be defined as the relationship between message credibility and the sender's reputation for trustworthiness in the recipients' minds and eyes (Umeogu, 2012). In terms of the source credibility model, previous studies have shown that consumer attitudes and purchase intentions are influenced by the evaluation of endorser's three major characteristics -- attractiveness, trustworthiness and expertise (Chin, Isa & Alodin, 2020). Moreover, it was found that a high level of consumer involvement with credible sources leads to greater brand confidence, less need for persuasion, and less resistance to change than when consumers are not involved (Swart, Lopez, Mathur, & Chetty, 2019).

METHOD

Adopting a qualitative research approach, textual analysis of photos or videos posted on global social media platforms (YouTube, Instagram and Weibo) was conducted to illustrate connections among global brands, brand archetypes, and celebrity endorsement through impression management.

In terms of global brand selection, the purposive sampling stratified by the characteristics of 12 brand archetypes based on Campbell, Greenwood, Prior, Shearer, Walkem, Young, Bywaters, & Walker (2020) can save time and budget to conduct this research project. To minimize differences in brand context, global brands to be examined in this study are solely personal care products.

To gain valid data for textual analysis, the samples of 12 global brands were selected during 2018 and 2023, spanning the outbreak and post-epidemic era, and based on five key criteria: 1) brand awareness and sales, 2) consistency of campaigns' theme (whether the theme of 10 ads with high viewership is consistent), 3) brand's social media activity on Instagram, YouTube and Weibo, 4) distinctive features of the ads, and 5) attractive storytelling styles.

This research examined only mega celebrity with more than 1 million followers as research target. As the raw data pool from famous celebrities could provide abundant relevant and effective data for further research. According to Ohanian's Source Credibility Theory (1990), celebrities gain popularity through three dimensions, attractiveness, expertise and trustworthiness. To better analyze celebrity's style and

archetypal positioning, celebrities' public images, personalities and business values are key concepts for analyzing their consistency with the global brands.

Table 2: Archetypal Brands and Corresponding Celebrities with Sampling Advertisements

Brand Archetype	Celebrity	Brand and Products	Advertisement Samples
Outlaw	Jeffree Star	Jeffree Star Cosmetics	https://www.youtube.com/watch?v=wv-BbSdZkLo
Magician	Becky G	Colorpop's Hola Chola Collection	https://www.youtube.com/watch?v=piWJdY0T-QE
Hero	Yiming Su	Adidas' Men Shower Gel	https://m.weibo.cn/detail/4918271168479623
Creator	Rihanna Fenty	Fenty Beauty	https://www.youtube.com/watch?v=Vb9xbvH-x4c
Lover	Marion Cotillard	Chanel N°5 Fragrance	https://www.youtube.com/watch?v=qeMqcApmS7g
Jester	Kevin Hart	Old Spice Moisturize with Shea Butter Body Wash	https://www.youtube.com/watch?v=c5RYK_hH704
Everyman	Nikkie	Maybelline	https://www.youtube.com/watch?v=tkOnMQ-tmso
Caregiver	Urassaya Sperbund	Anessa Beauty Suncare	https://www.youtube.com/watch?v=xNenVnGYYzE
Ruler	Chris Hemsworth	BOSS Bottled Eau de Parfum	https://www.youtube.com/watch?v=sPi0UbYtv9Y
Innocent	Jennifer Aniston	Aveeno Daily Moisturizer	https://www.youtube.com/watch?v=v-GvzSJNRuA
Sage	Constance Jablonski	Guerlain Abeille Royale Advanced Youth Watery Oil	https://www.youtube.com/watch?v=T-o2BI3m3uA
Explorer	Michelle Yeoh	La Mer skincare products	https://www.youtube.com/watch?v=RFxTxZp5z60

Review of literature and relevant theories leads to the development of the conceptual framework as shown in Figure 2.
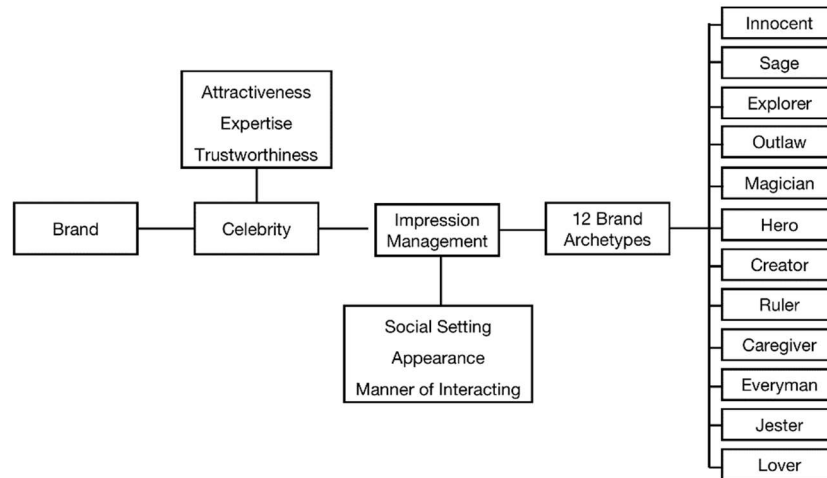
Figure 2: Conceptual Framework

DATA ANALYSIS

Impression management was explored within the framework of Dramaturgy. Celebrity is conceptualized as an organic and ever-changing performative practice rather than a set of intrinsic personal characteristics or external labels (Mellado & Hermida, 2021). Based on the content shared by celebrities on social media, the value orientation between social setting, appearance and manners of interacting can be further delineated in detail to gain a deeper understanding of the type of public perception to which the celebrities belong, and better analyze the image management of the celebrities.

RESULTS

Textual analysis of the sampled advertisements identifies three emerging themes and sub-themes. The first theme is endorsement and lifestyle integration, the second theme is archetypal performances, and the third theme is psychological performances. Their sub-themes were presented in Table 3.

Table 3: Three Emerging Themes and Sub-Themes

Emerging Themes		
Endorsement and Lifestyle Integration	Archetypal Performances	Psychological Dimensional Performances
Occupation	Gender stereotype	Self-discipline
Public image	Impression Management	Self-motivation
Hobby	12 Brand Archetypal Characteristics	
	Verbal Communication Style	
	Non-Verbal Communication Style	

As the first emerging theme, endorsement and lifestyle integration is inspired by Chapple and Cownie's (2017) work about the integration between the trustworthiness of paid endorsements and YouTube lifestyle Vloggers. Its sub-themes are occupation, public image, and hobby. They are concluded from the advertising raw data, where celebrities might show off some relative information on their online posts or work results. The connection between occupation and brand archetype creates a convincing scene to target audiences' perceptions. Details are shown in Table 4.

Table 4: Connection between Celebrity's Occupation and Brand Archetype

Brand & Archetype	Celebrity & Occupation	Connection
Jeffree Star Cosmetics & The Outlaw	Jeffree Star & Makeup Youtuber	Edgy fashion cosmetics products and trendy makeup artist.
Adidas & the Hero	Yiming Su & Snowboarder athlete	Snowboarder athlete requires toiletries with good quality.
Fenty Beauty & the Creator	Rihanna Fenty & Famous black female singer	Famous singer and business woman devotes to designing cosmetics for women of all skin tones.
Maybelline & the Everyman	Nikkie & Makeup artist	Famous makeup artist utilizes affordable cosmetic products to update makeup tutorials.
Anessa & the Caregiver	Urassaya Sperbund & Actress	Famous actress needs sunscreen's protection to finish her professional job.
Guerlain & the Sage	Constance Jablonski & Model	Model needs professional skincare knowledge to show off their femininity in front of a camera.

Public image refers to the perception, reputation, and overall impression that a celebrity presents to the public. According to this dimension, archetypal celebrities have portrayed classic characters and left favorable impressions on the audiences, thus being able to effectively reflect connotations of brand archetypes. Details are shown in Table 5.

Table 5: Linkage between Celebrity's Famous Work and Archetypal Image

Brand & Archetype	Celebrity	One Famous Film Reflecting Archetypal Image
Old Spice & the Jester	Kevin Hart	Central Intelligence
Chanel & the Lover	Marion Cotillard	La Vie en rose
Boss & the Ruler	Chris Hemsworth	Thor
Aveeno & the Innocent	Jennifer Aniston	Friends
La Mer & the Explorer	Michelle Yeoh	Everything Everywhere All at Once

Hobbies of celebrities could sometimes fill in the missing components of required characteristics in archetypal advertisements. For instance, the Magician's sampled celebrity is Becky G. She is a famous Latin singer and endorsed Colorpop's cosmetics products in 2019 (Web- 4). She reaps pleasure and confidence in wearing styling makeup, which aligns with Colorpop's product positioning. Hence, her hobby of makeup could illustrate the connotations of the Magician archetype. When celebrities endorse archetypal-related brands, their behaviors are supposed to be equipped with corresponding archetypal characteristics, as presented in Table 6.

Table 6: Archetypal Characteristics of Celebrities

Brand Archetype	Celebrity	Archetypal Characteristics
Outlaw	Jeffree Star	Untraditional, Pioneering fashion
Magician	Becky G	Sweet, Brave, Sincere
Hero	Yiming Su	Determined, Diligent, Talented, Brave
Creator	Rihanna Fenty	Inclusive cultural acceptance, Creative
Lover	Marion Cotillard	Grace, Charming, Fascinating

Brand Archetype	Celebrity	Archetypal Characteristics
Jester	Kevin Hart	Humorous, Down-to-earth
Everyman	Nikkie	Friendly, Warm-hearted
Caregiver	Urassaya Sperbund	Beautiful, Confident, Elegant
Ruler	Chris Hemsworth	Masculine, Handsome, Self-discipline
Innocent	Jennifer Aniston	Friendly, Kind, Positive, Beautiful
Sage	Constance Jablonski	Calm, Gentle, Elegant
Explorer	Michelle Yeoh	Brave, Strong, Grace

Communication style is divided into verbal and non-verbal communication. As for verbal communication, it articulates the way that narrator conveys information, ideas and emotions through verbal expressions (Web- 6). Table 7 presents four verbal communication styles that are associated with four brand archetypes.

Table 7: Verbal Communication Style of Celebrities in Archetypal Advertisements

Archetype	Celebrity	Verbal Communication Style
Outlaw	Jeffree Star	Jeffree Star specializes in satirical comments towards various of makeup products through concise and sincere experience sharing.
Everyman	Nikkie	Nikkie's communication style is positioned as gentle, enthusiastic and informative sharing.
Magician	Becky G	Becky G is good at making persuasive linkages between her musical dream and brand's concepts of encouraging average people to chase dreams.
Jester	Kevin Hart	Kevin Hart utilizes humor to establish memorable Jester image.

Additionally, non-verbal communication includes two elements according to the research results, which are body language and clothing choices. Body language could be considered as non-verbal behaviour (movements and postures, facial expression, glances and eye contact, automatic reflexes, spatial and tactile behaviour), which is meaningful in both real and intentional made-up communication (Witte, 2023). Clothing choices are the decisions people make when deciding which type of clothes to wear in different contexts or for specific purposes (Camacho-Otero, Pettersen & Boks, 2020). Moreover, people's self-esteem and confidence could be affected by their dressings due to the fact that clothing has a favorable psychological impact (Isaksen & Roper, 2012). Table 8 demonstrates the non-verbal communication styles that are associated with six brand archetypes.

Table 8: Non-Verbal Communication Style of Celebrities in Archetypal Advertisements

Non-verbal Communication Style		
Archetype	Celebrity	Description
I. Body Language		
Hero	Yiming Su	His snowboarder performances show his brave heart, strong determination and self-motivation through body language on screens.
Magician	Becky G	Becky G utilizes vivid and natural body language to manage intimacy with audiences so as to convey friendly impression management.
Innocent	Jennifer Aniston	Jennifer Aniston's facial expressions had a shift from feeling exhausted to being energetic after using Aveeno's product.

Non-verbal Communication Style		
Archetype	Celebrity	Description
II. Clothing Choices		
Outlaw	Jeffree Star	Jeffree Star's niche fashion costumes is consistent with the Outlaw positioning.
Lover	Marion Cotillard	Marion Cotillard wore an elegant dress to portrait the ideal charming image of a lover.
Innocent	Chris Hemsworth	Chris Hemsworth wore a smart suit to reflect his sophistication in workplace. Moreover, his morning workout in a sporty suit suggests self-discipline in busy schedule.

After analysing the exterior performances of celebrities, the mental states of celebrities might lead to fans' worship (Brooks, 2021). Positive psychological implications embedded in celebrities' performances inspire good word-of-mouth and subsequently meet consumers' mental needs.

The ability to initiate and sustain one's own drive and enthusiasm to pursue goals, accomplish activities, and achieve personal or professional objectives without the need for external influence or pressure is referred to as self-motivation (Geller, 2016). When the spokesperson has a clear self-motivational image, it creates positive publicity for the brand and sets a good example for fans. Details are demonstrated in Table 9.

Table 9: Psychological Dimensional Performances of Celebrities in Archetypal Advertisements

Psychological Dimensional Performances		
Archetype	Celebrity	Description
I. Self-Discipline		
Sage	Constance Jablonski	Constance Jablonski has very strict standards for her figure management and skincare process, and constantly pursues self-discipline in every detail of life.
Ruler	Chris Hemsworth	Chris Hemsworth is famous for his self-discipline in both screen presence and private life, thus setting a positive life model to fans.
II. Self-Motivation		
Explorer	Michelle Yeoh	Michelle Yeoh continues to break through the boundaries of being an actress and expanding her career possibilities when she has already achieved success and fame. At the age of 60, she became the first Asian actress to win the Academy Award for Best Actress (Zornosa, 2023).

CONCLUSION

Celebrities establish trustworthiness through their works, images and reputations (Ohanian, 1990). In terms of work-orientation, professional knowledge embedded in celebrity positioning could leave good impressions on intended audiences. For instance, Jeffree Star and Nikkie are both famous makeup artists. Consequently, trustworthiness of their endorsement of cosmetic items could be derived from their professions. Moreover, if other celebrities' occupations do not directly relate to endorsing goods, their favorable public perceptions and solid reputations would indicate their trustworthiness.

Attractiveness is closely associated with visual and verbal expressions from celebrities. Firstly, regarding visual expressions, aesthetic standards play essential roles in celebrity online exposures. Take the archetypes of the Outlaw, the Magician, the Creator, the Lover, the Everyman, the Caregiver, the Ruler, the Innocent, the Sage, and the Explorer as examples. Their sampled product categories are personal care products related to cosmetics, sunscreen, perfumes, toiletries, and skincare. Due to the products above

contributing to creating attractive images for customers, corresponding celebrities ought to establish fascinating images to resonate with target audiences. Secondly, verbalizing the meaning of product functions could be regarded as a means of identification (Belboula & Ackermann, 2021).

Lastly, in terms of expertise, integration between brand characteristics and lifestyles or occupations of celebrities could effectively enhance public awareness of expertise. For instance, Becky G (Web- 2) and Jeffree Star (Web- 3) are renowned in the beauty industry who have their own cosmetics brands. However, their expertise has been presented via different foundations. Specifically, Becky G is a popular singer, preferring to wear different makeup in both on-stage and private life scenarios. Delicate or edgy makeup style is part of her life attitude and habit. While for Jeffree Star, his expertise in the cosmetics industry is shown off through his impressive makeup tutorials, which are closely associated with his occupation. Details of the congruence between attractiveness, expertise and trustworthiness are presented in the Figure 3.
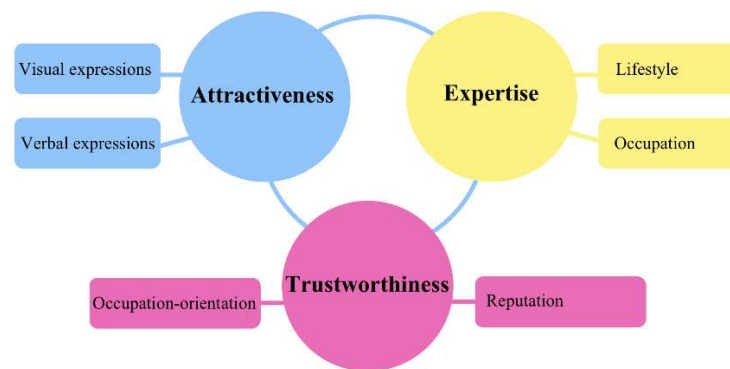

Figure 3: Congruence between Three Dimensions of Source Credibility and celebrities' archetypal performances

As Yoo (2022) has mentioned in the study, celebrities enhance intimacy with fans by sharing details of their daily lives and engaging in 'self-expression', such as setting modest life models to the public in order to reinforce resonance and arouse good impressions. Celebrity generally utilizes impression management to strengthen the brand archetype output to target audiences via enhancing expertise, attractiveness and trustworthiness.

With regard to the research results, endorsement and lifestyle integration are strengthened by occupation, public image and hobby of celebrities. Through intentional and unintentional exposures to the fan base, details of both private lives and public performances shape more subjective perceptions of celebrities and somehow arouse a sense of closeness between celebrities and fans (Yoo, 2022).

Generally, occupation mirrors a celebrity's professional knowledge and passion for work. According to Gilal, Paul, Gilal & Gilal's research (2020), when a familiar endorser was utilized, brand's perceptions would be more favorable when the product is in line with the endorser's occupation.

Referring to public image, it showcases a more objective evaluation from a third perspective and it will enhance the credibility of the image (Thomas, Fowler & Saenger, 2020).

In terms of hobby, it reflects celebrity's psychological state and real-self in leisure life. Exposing hobbies to fans is also a means to address additional optimistic elements in the establishment of positive images (Stănculescu, 2011).

Overall, archetypal performances enhance audiences' perceptions of 12 brand archetypes. According to consumers' physical and mental needs towards brands, celebrities utilize gender stereotype impression management (Mortensen, Ejaz & Pardun, 2020), archetypal behavioral patterns (Centeno & Wang, 2017), verbal and nonverbal communication styles (Pozharliev, Rossi & De Angelis, 2022) to craft attractive images and expose to the public. With archetypal performances, unconscious resonance shapes 12 brand archetypes' perceptions among consumers.

Further, research has shown that psychological dimensional performances encourage the recognition of 12 brand archetypes. In this research, self-discipline and self-motivation (Lozanski & Lavrence, 2019) align with audiences' expectations to brand archetypes.

Moreover, linkage between source credibility and 12 brand archetypal presentations has been illustrated in this research. To enhance effective interactions with target audiences, celebrities could manage impression management via intentionally emphasizing the significance of source credibility, including dimensions of attractiveness, expertise and attractiveness (Ohanian, 1990). Additionally, different brand archetypes require varying storytelling techniques to showcase memorable characteristics of brand concepts. Hence, the Figure 4 specifically groups archetypal presentation based on source credibility theory (Ohanian, 1990).

Figure 4: Connection between source credibility and 12 brand archetype theory

Accordingly, for brand archetypes of Outlaw, Magician, Lover and Jester, they are keen to establish ideal images to target consumers through attractive verbal and visual expressions in showcasing attractive personalities in advertisements. When it comes to archetypes of Hero, Creator, Ruler, Sage and Explorer, they are supposed to be equipped with relevant professions to achieve goals. Consequently, emphasizing expertise in corresponding advertisements could make the story more convincing. Lastly, the archetypes of Everyman, Caregiver and Innocent pour attention into approachable, pure and safe characteristics in advertisements. Hence, the trustworthiness embedded in advertising storytelling would be of great importance. Therefore, celebrities ought to provide trustworthy information in their brand endorsements.

The result of this research bridges the gap between effectiveness of celebrity endorsement and recognition of 12 brand archetypes. In addition, persuasive elements embedded in advertisements could arouse inspirations among scholars in constructing relative surveys to promote the development of celebrity economics and improve the endorsing communication framework. Secondly, taking results of this research as references, brand manager could better enhance the effectiveness of endorsements and further reinforce brand public images with cost-effective endorsing budgets. Lastly, for average consumers, after clarifying the resonance process based on archetypal recognition, consumers could choose items satisfying both functional and emotional needs. Simultaneously, if consumers can stay awake to the bombardment of advertising, it would help them avoid falling into the trap of consumerism. Furthermore, consumers could establish ideal images to fulfil their communication goals via utilizing relevant archetypal products.

Future research could examine the cognitive response to celebrity impression management and narrative style on purchasing intentions among potential target customers. Additionally, based on different cultural backgrounds and geopolitical differentiation, impression management styles from varying celebrities might present in different ways. Hence, the comparisons of varying continents could illustrate more holistic understandings towards archetypal presentations across intercultural communication. Lastly, more categories of products could be explored to prove the effectiveness of impression management via endorsements in presenting 12 brand archetypes, especially focusing on the marketing strategies differentiation of micro and mega celebrities.

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Factors Influences on Consumer Purchasing Behaviour Among Young Adults in Kasetsart University Bangkaen Campus (Case Students in the faculty of Business Administration)

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ABSTRACT

Consumer behaviour is very difficult to predict, even for experts in the field, as there are different factors that influence their final decision making in purchasing the products. To satisfy consumers and improve consumption, it is crucial to understand the consumer's demand. Along with critical improvisation in technology, innovation, and lifestyles; understanding the consumer is a very difficult task. However, there are certain factors that will always be the main consideration in a consumer's mind when making a purchase decision. This research aims to reveal the Thai fashion industry's consumer behaviour regarding the influencing factors. Quantitative research was conducted by giving out questionnaires to Kasetsart University students in the Faculty of Business Administration from the age of 12 to 25 years. The findings revealed that allowance, brand identity, and shop window have a significant effect on young Thai consumer behaviour in fashion. Future approaches for fashion retailers are suggested through the understanding of consumer's mind and product influences.

KEYWORDS: consumer behaviour, purchasing decision/ spending/ fashion/ influence factors

INTRODUCTION

Fashion is a language through which society becomes related and it communicates one's habits, practices, and its cultures (Vignali, n.d.). Consumers' preferences towards fashion products are constantly changing along with trends and styles. Being aware of and appropriately adapting to the factors that influence the buying decision are essential for the marketing department of many businesses. Additionally, they must support them to satisfy their consumer needs. A survey was conducted from April to September 2020 in Thailand about how much a consumer will spend on fashion apparel. 41 percent of the Thai respondents stated that they would spend the same in fashion. In the meantime, 34 percent of them expected to spend more on such products (Statista, 2021). However, it is not about the fashion industry itself, but it is about the external factors that influence the purchasing decision of the consumers. The level of credit available to the consumer, as well as the culture around the consumer credit within the society, has a big impact within economic factors affecting consumer behaviour (Onquor, 2022). According to Ariana Nelson (2021), there are many factors can affect consumer behaviour, but the most frequent ones are marketing campaigns, economic conditions, personal preferences, group influences and purchasing power. The behaviour of Thai people is regarded as unique since they are classified as being in a collectivist or dependent culture (Thananuraksakul, 2007). Consumer behaviour is not just the buying process. It starts at the decision-making stage, as well as the act of acquiring and evaluating the products. The processes of

consumers finding the alternatives, advantages and disadvantages of the products will later be reflected to the marketers whether the product is successful or not.

The goal of this study is to identify the factors that have influence on the consumer behaviour in buying fashion products. As mentioned by Munchuta Suadmalai (2006), "most young adults in Bangkok come from well-to-do families where money or allowance is provided in a large amount and supported by their parents." Their purchasing power is stronger compared to those young adults who have lower allowance and less opportunity access. Hence, different spending habits will lead to different factors of making purchasing decisions and consumption. This research will specifically focus on the attitudes and purchasing behaviour of young business adults in Kasetsart University Bang Khen campus through different levels of factors that are considered to affect their way of spending. This paper consists of literature review, methodology, result, discussion, and conclusion as evidence to guide readers throughout our process and outcomes of finding. An organization's understanding of customer behaviour is important before launching a product (Solomon, 2009). Assisting marketers on brand strategies improvement and approaches will help marketers to understand deeply on customer requirements and expectations to reach their customer easier.

LITERATURE REVIEW
Consumer Behaviour Theory

"Consumer behaviour is an interdisciplinary social science. It deals with the study of individuals, groups and organizations, the activities linked with the purchase, use and disposal of goods and services." (Nelson, 2021). Individuals make decisions on products and services based on their expectations and experiences in different circumstances of recognition. The satisfaction level is then expressed in a form of reaction. "Consumer behaviour explains the reasons and logic that underlie purchasing decisions and consumption patterns; it explains the processes through which buyers make decisions" (Prasad & Halpeth, 2015).

"Due to the changing fashion, technology, trends, living style, disposable income, and similar other factors, consumer behaviour also changes" (Kotteeswari, 2021). The influence factors such as personal factors and social factors will affect consumer behaviour to vary by having different perceptions and attitudes toward the products (Nelson, 2021).

- Personal factors
  As mentioned by Ariana Nelson (2021), "an individual's interests and opinions can be influenced by demographic." Age, lifestyle, income, economic level, and personality are the main influence factors of purchasing. In different stages of life, purchasing decisions vary in term style and taste. "Income also strongly affects product choice, as higher-income consumers are better able to purchase expensive, status-enhancing items" (Mooij, 2004). Financial capacity is one of the factors that influences the purchasing process, the higher the capacity, the higher power and consumption is" (Pereira et al., 2009). Therefore, low-income individuals tend to have lower purchasing power and would prioritize purchasing necessary and affordable products that are worth the price. Different lifestyle backgrounds bring along different decisions.
- Social factors
  Social factors such as family, reference group, roles and status can influence consumers to react to a product brand (Jaideep, 2015). A quote has been stated that "…people live in a world in which they are interconnected, information is shared, recommendations are made, and social acceptance is important." (Yang & Allenby, 2003). Living in a community can create an impact of change to personal beliefs and behaviours—either small or large—through relationship and connection. "Social influence involves the exercise of social power by a person or group to change the attitude or behaviour of other persons or groups in a particular direction" (Azlan & Jamal, 2015). Preferences and purchasing habits are influenced by how an individual is treated and will continue from generation to generation. Moreover, friends' influences will affect the spending rate.

Fashion

When talking about fashion, most of the time it is about clothing. Consumer's images and identity are also reflected through fashion as each person has his/her own style. In the fashion industry, trends change rapidly, therefore making it hard to catch up with the consumer's needs and requirements. Fashion always changes, so do the consumers. Consumer's behaviour changes based on current events, lifestyles, and needs. "The fundamental problem in the fashion industry is that the time it takes to source materials, convert them into products and move them into the marketplace is invariably longer than the time the customer is prepared to wait" (Ciarniene & Vienazindiene, 2014). Product comfort is one of the attributes, as consumers wish comfortable products to satisfy certain specific needs (Lerkpollakarn & Khemarangsan, n.d.). If the product does not meet certain needs of the consumer, they will most likely change their consumption behaviour. For that reason, there are other factors that need to be considered to keep influencing the consumer into consuming fashion products. For example, how the fashion industry approaches their target market, or the strategy that they use to get the consumers to follow the new trends that are set.

Based on these findings, we consider these following hypotheses:
(H1): Higher allowance will result in more spending for consumers.
(H2): Product options influence higher spending among consumers.
    (H2.1): Higher discount prices will result in more spending for consumers.
    (H2.2): The more brand identity, the more spending for consumers.
    (H2.3): The more environment influences, the more spending for consumers.
    (H2.4): The trendier the fashion, the more spending for consumers.
    (H2.5): Consumer habits have a great impact on spending.
(H3): Source of fashion information impacts spending behaviour.
    (H3.1): Fashion information received via television will result in more spending.
    (H3.2): Fashion information received via celebrities will result in more spending.
    (H3.3): Fashion information received via the Internet will result in more spending.
    (H3.4): Fashion information received via the shop window will result in more spending.
    (H3.5): Fashion information received via people will result in more spending.

METHODOLOGY

Research Question

The main objective of this research is to understand and describe the consumers' purchasing behavior in the fashion industry. This leads to the following research question:
- What are the main factors that influence consumer spending in the fashion industry?

Instrument Development

To gather data, a questionnaire was developed by adopting relevant items from previous studies with a similar approach. The items from the survey were adapted from the questionnaire made by Wang (2010). The questionnaire was made into three sections, including demographic information, such as age, income, and spending rate. The second section is about driven factors in purchasing behavior, which contains the general factors, for example: product standard, consumer style, purpose of purchasing and the platform that consumers use for purchasing; online or offline shopping. After that, the online and offline questionnaire were individually split into its own section with questions being rephrased specifically to match the context; however, the questions have the same meaning and context. The questions were about the respondents' shopping frequency and their shopping companion in multiple choices, whereas questions such as sources of fashion information and purchasing purpose are in multiple responses.

The questionnaire was made for Business Program students in Kasetsart University Bang Khen Campus. It was initially developed in English, then translated to a Thai version for reaching further audiences and to give more accurate information to the respondents.

Data Analysis

We make multiple comparisons on allowance using ANOVA and Scheffe post hoc test to view the spending effects on different groups of allowance. Linear regression and dummy variables were also conducted to measure which categories of product options and sources of fashion information influence consumer spending.

Sample size

According to Munchuta Suadmalai (2006), "consumerism is evident in Bangkok due to the way young people spend their money and their shift in lifestyle. Instead of spending free time to do recreational activities, many young people prefer to spend their time cruising around shopping centers, hanging out with friends, going to movies, shopping, chatting on the phone, surfing the Internet, and watching TV. This is the new lifestyle for the new generation, and this is how their disposable incomes are spent." Research information about Thai young adults and their purchasing behavior is limited. We used the Taro Yamane method to find sample size. Our target to view young adult behavior is based on the population of 2,355 students in the faculty of Business Administration at Kasetsart University Bang Khen Campus. According to the calculation, a total of 350 questionnaires were considered for analysis.

Table 1: Demographic characteristics of respondents

Description	Frequency (n=350)	Percentage
Gender		
Male	63	18.0
Female	276	78.9
Prefer not to say	11	3.1
Age range		
12-18	76	21.7
19-25	274	78.3
Allowance		
<4000	64	18.3
4,000-7,000	96	27.4
7,000-10,000	104	29.7
>10,000	86	24.6
Total (n)	**350**	**100**

As shown in Table 1, 78.9% of the 350 respondents were female, most were in the age group of 19 to 25, and there were not many differences in the allowance between the respondents.

RESULT

Table 2: Anova tests result on different range of allowance toward spending.

	Sum of Squares	d.f	M.S.	F-Test	p
Between Groups	3113116639	3	1037705546	8.753	<0.001
Within Groups	4.126E+10	348	118560940		
Total	4.437E+10	351			

[1]   Note. * $p < 0.05$

Table 3: Scheffe's Post Hoc tests result on different range of allowance toward spending.

Allowance	<4,000	4,000-7,000	7,000-10,000	>10,000
<4,000	-	-1307.61	-2469.96	-8086.85*
4,000-7,000	1307.61	-	1162.35	5779.24*
7,000-10,000	2469.96	-1162.35	-	5616.89*
>10,000	8086.85*	-6779.2393*	-5616.8882*	-

[2]   Note. * $p < 0.05$

In this study, the Statistical Package for the Social Sciences (SPSS) was employed for data analysis. Post hoc multiple comparisons analysis One-Way ANOVA testing was conducted to compare how much impact does allowance have on customer spending decision. Scheffé's method was applied to

be tested. Allowance is classified into four groups as shown in table1 including allowance earned is less than 4,000 baht; between 4,000 baht to 7,000 baht; between 7,000 baht to 10,000 baht; more than 10,000 baht. The analysis revealed that an effect of allowance that earn more than 10,000 baht in the last row was statistically significant to each group except for allowance earning more than 10,000 baht. As for the other three columns, where allowance is less than 4,000 baht, between 4,000 baht to 7000 baht, and between 7,000 baht to 10,000 baht are also significant to allowance that were received more than 10,000 baht. The significant value is known to be less than 5% or $p<0.05$ which represents that there is difference in the two-variable relationship. Negative significant value represents that an allowance cannot spend more than its earning allowance unless the allowance earning is more than the spending. To clarify the data, those who earn less than 4,000 baht cannot spend as much as those who earn allowance more than 10,000 baht.

Therefore, the results show that consumers' spending behavior varies by the amount of allowance earned. Individuals whose allowance is less than 4,000 baht, between 4,000 baht to 7,000 baht, and between 7,000 baht to 10,000 baht spend their money less than 10,000 baht while those whose allowance are more than 10,000 baht will commonly spend money over 10,000 baht. It could be viewed that higher allowance will influence higher spending behavior.

Table 4: Result of linear Regression Analysis of Product Options toward spending

Variable	B	SE	β	p
D (Discount Price)	-2147.354	1392.91	-0.087	0.124
D (Brand Identity)	3192.99	1318.33	0.136	0.016*
D (Environment Influence)	-206.396	1936.1	0.005	0.915
D (Trendy)	112.672	1274.810	0.005	0.930
D (Habit)	1143.281	1360.84	0.045	0.401

Note. * $p<0.05$

Table 5: Result of linear Regression Analysis of Sources of Fashion Information toward spending
[4]

Variable	B	SE	β	p
D (TV shows)	10.27	2232.75	0.00	0.996
D (Celebrities)	518.75	1360.24	0.021	0.703
D (Internet)	-1329.2	2864.93	-0.25	0.643
D (Shop Window)	3180.17	1441.0404	0.123	0.028*
D (Community)	1300.76	1218.54	0.058	0.287

Note. * $p<0.05$

In addition, Linear regression was also conducted to measure whether the types of product options and the sources of individual fashion information receive from different channels influence their decision in spending or not using dummy variables. The value is separated into two types of data; yes, as one and no, as zero to represent categorical variables that contain two levels to run the regression. As shown in table 2, there was a significant difference in the score of choosing to purchase product options consisting of discount price, brand identity, environment influence, trendy, and habit. Data shows that brand identity has effects on the behaviour in purchasing, due to the significant number p=0.016 while the rest got rejected. This can be interpreted that customers' purchasing based on those who got influence by brand identity (M = 12,254.1) is higher than not got influence by the brand identity (M = 3192.99) based on the prediction mean. While in table 3, the categorical variables of sources of fashion information are TV shows, celebrities, Internet, shop window, and the community. The regression coefficients shows that only shop window is statically significant p = 0.028 while the rest got rejected. The shop window provides a difference between the dummy variable of yes and no. The regression can be referred to the b-coefficient for shop window which is 3180.17. This can be interpreted that consumers' spending is based on the influences of shop window (M = 11,796.476) which tend to be higher than those who do not get influenced by shop window (M = 3180.17) based on predicted mean.

DISCUSSION AND CONCLUSION

Referring to the findings, allowance is significant in causing the spending amount to change. This result could be agreed with (Solmon,1975) who explained that "when people earn more income, they will have more savings, which means that they can control their spending." This explains the correlation between higher allowance and spending amount. If individuals are in a wealthy condition and receive higher allowance, it is possible that individuals will have higher consumption. The chance of individual thinking before purchasing are less likely to happen compared with those who have less chance of spending due to their low allowance. Those with greater allowances spends a lot but still have savings while those with low allowance does not have the same level of savings as those. Therefore, individual purchasing decision will vary as individual adapt their spending behavior based on their financial condition.

Brand identity is one characteristic of product option that influences consumer decision in purchasing. "The role of self in consumer decision making is linked to consumer's perception of the fit between the brand's identity and his own identity" (Ahmad & Thyagaraj, 2015). Brand characteristic and uniqueness are formed as brand identity develops. Wearing branded clothing gives young adults a chance to express their confidence and make impressions on others. Satisfaction that brand identity creates will lead to the motivation of purchasing and may change in consumer purchasing decision.

It is also noteworthy of atmospheres that are created to influence consumer spending, that "window displays are akin to advertising in helping create and maintain an overall image of the retailer in consumers' minds" (Park et al., 1986). It is an easier channel for consumers to yearn for the product based on the display shown. The more the customer desires to purchase fashion clothes based on specific item on display, the more information and brand image is being observed which influence consumer purchasing decision and will later affect the spending.

According to the focus of factors influencing consumer purchasing behavior of young adults in Kasetsart University's Faculty of Business Administration, it can be concluded from our findings that both personal factors and social factors have significant effects. Relying on the level of personal allowance earned and the interaction of the brand through brand identity to create a change in a person's perspective and consumption rate are important aspects. Furthermore, window shopping is a supporting factor in influencing the behavior, as most consumers are influenced by visual display, that gives more attraction in checking and purchasing the product.

There are certain limitations that should be acknowledged when interpreting the findings of this study. One of the biggest limitations of the study focuses on how there is not enough information and data about young consumer behavior. The majority of the information is about the general population of Thailand, for that reason, we specifically target the young adult population as they may have unique behavior due to the gap in generation compared to adults. The goal of this study is to identify the factors that have influence on the consumer behavior in buying fashion products. It can be suggested that organizations lower the consciousness of risk in the purchasing process and provides trustable products and services among a person by building a good brand identity and good environment surrounding. Good relationships between the brand and the consumer can be formed and maintained. This can lead to enhancing consumer satisfaction to set new mindsets and behaviours to purchase more in the upcoming term.

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Social Network Analysis of Blockchain Online Social Media: Steemit Case Study

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ABSTRACT

The advent of the blockchain online social media (BOSM) platform has presented both novel opportunities and distinctive obstacles in the dynamic realm of online social networks. Despite the rapid growth and immense potential of blockchain technology, interdisciplinary publications and research methodologies related to BOSM are relatively limited. To bridge this gap, the research adopts social network analysis-based techniques. By employing these tools, the study identifies key user characteristics that differentiate BOSM platforms, unveils patterns of user interactions, and captures the dynamic evolution of social networks in this unique context.

To investigate the BOSM platform, the research utilizes a comprehensive dataset from the Steemit community, which is collected through web crawler software and meticulously processed using social network analysis software Ucinet. The utilization of this data-driven approach enriches the findings, providing crucial insights for the realm of social media marketing and guiding the understanding and management of public opinion.

KEYWORDS: Blockchain, Online social media, Social network, Steemit

INTRODUCTION

With the birth of Web 3.0 and the metaverse, the rapid growth of decentralized organizations and blockchain business models has given rise to an improved form of blockchain social networking. The current approach to social networking is to centralize all the power on one platform, however, decentralization is the future. Decentralized social networks run on separate servers to ensure openness. Implementing blockchain in social media brings many advantages, including opposition to censorship, personal data ownership, user privacy and cryptocurrency transactions. As a subset of decentralized social media, blockchain social networks offer users' data and information a safe, free environment.

Blockchain online social media (BOSM) is a new breed of decentralized online social network that was created with the intention of using blockchain technology to reward valuable content. In short, blockchain makes it possible for anyone to profitably and safely publish material on social networking networks. Consensus protocol and anonymity are two of blockchain technology's key components (Kadena & Qose, 2022). Compared with the traditional social media platforms, blockchain online social media has different characteristics.

Table 1 : Characteristics of blockchain and BOSM platforms

Source	Item	Categories
Nair & Tyagi (2023)	Characteristics of blockchain over other technologies	● Decentralization ● Immutability ● Non-repudiation ● Transparency ● Pseudonymity ● Traceability
Kadena & Qose (2022)	Characteristics of protocols	● Immutability ● Distribution ● Decentralization ● Resilience
Ciriello et al. (2018)	Characteristics of BOSM platforms	● Public Reputation System ● Rate-limited Weighted Voting ● Decentralized Rewarding System ● Incentivized Mutual Evaluation ● Irreversibility ● Openness

BOSM blends blockchain technology with social networks, blogs, and cryptocurrency systems with the main objective of fixing the problems that online social networks are now facing. Similar to Steemit, it accomplishes this by utilizing blockchain technology and monetization to encourage users to produce and distribute content. The decentralization brought about by blockchain technology affects the platform in a number of ways. The ability to give users money incentives based on their social activity is the most significant feature that the BOSMs platform offers.

Research Objectives

As the BOSM landscape continues to evolve, understanding user behavior on these platforms becomes a critical pursuit. The interactions within blockchain online social media platforms differ significantly from those in mainstream platforms like Reddit, Facebook, and Twitter. This necessitates a deeper investigation into the unique dynamics shaping user behavior within BOSM environments. By addressing this purpose, with regard to social networks and interactions, the study aims to offer insightful information regarding blockchain online social media.

Diverse stakeholders are involved in blockchain online social media: A. Users; B. Developers; C. Node-operators; D. Investors; E. Regulators; F. Advocacy groups (Bhusare & Mannem, 2023). These stakeholders work together to create and maintain decentralized social media platforms, taking responsibility for their security, democracy, and user-centeredness. Specifically, the advocacy groups promote user privacy, freedom of expression, and democratic governance to help promote the values of decentralized social media platforms and support their development.

Table 2: Literature review of user and interaction categories

Source	Item	Categories
Guidi & Michienzi (2021)	Transaction	Social transactions
		Monetary transactions
		Management transactions
	Interactions graph	Interactions graph
		Social interactions graph
		Social no bot interactions graph

		Monetary interactions graph
		Follower-following graph
Ciriello et al. (2018)	User	Content creators
		Content curators
		Platform innovators
		Core developers
Bulgurcu et al. (2018)	User	Promoters
		Super-promoters
		Core users
		Periphery-users
Shan et al. (2017)	Online communities	Transaction community
		Interest community
		Fantasy community
		Relationship community
	User generated content (UGC)	UGC of entertainment
		UGC of interest
		UGC of business
		UGC of relationship
		UGC of public opinion

In this paper, we attempt to construct and analyze social networks and compare their characteristics and evolution.

The questions we want to answer are:

(1) User characteristics：what are the attributes of individual actors and their relationships and connections to other actors in the network?

(2) Blockchain network dynamics: how do various network characteristics of transactions on the blockchain connect to one another and evolve over time?

Our objectives are:

(1) to identify the characteristics of the various categories of users.

(2) to identify social network characteristics and its evolution dynamics.

LITERATURE REVIEW

Blockchain technology has been developed and used in various businesses as a revolutionary technology of this century, but it is not without its issues. Despite having limited transdisciplinary studies, by 2023, it is anticipated that the global blockchain market would be worth $23.3 billion (Poongodi et al., 2020). Social media places a strong emphasis on interpersonal connections and user-generated content (UGC). Nevertheless, little study has been done on the relationship between content creation and consumption as well as the connections between social network features. Further research is required since BOSM patterns exhibit unique traits when compared to conventional online social media.

Not just with regard to the more immediate ideas of cryptocurrencies and payments (Blockchain 1.0), but also with regard to contracts, property, and all financial markets (Blockchain 2.0), blockchain is transforming business in both the public and private sectors. The scalability concerns and blockchain application in small-scale initiatives confirmed the necessity of blockchain technology beyond Bitcoin (Fauzi et al., 2023). Zhu et al. (2020) focused on the effects of mass media and social media, coming to the conclusion that social media influences people's intentions and behavior. According to Hannan et al. (2023), social media has a positive and significant influence on people's motivation to embrace blockchain

technology. Furthermore, one's preference for technology greatly modifies the impact of social media on the inclination to embrace blockchain technology. According to Rakshit et al. (2023), blockchain technology may have an impact on how well small and medium-sized businesses (SMEs) operate. Visibility on social media has a moderating influence on the performance impact of SMEs. Additionally, a company's profitability, market share, and sales all rise as a result of its social media presence. Research by Jain et al. (2023) has shown that many reputable businesses utilize blockchain-based smart contracts to improve their independence from centralized management and outside interference.

The biggest benefit of blockchain technology for integration with social media in digital transformation is privacy protection. The decentralization of social media allows users to control their data, contributing to privacy, ownership, and distribution. Through smart contracts, its transparency and reward tokens also offer more possibilities for online transactions and crowdfunding campaigns (Kadena & Qose, 2022). In response to the misuse and censorship of user data by social media companies, Bhusare & Mannem (2023) proposed a potential solution for decentralized web application-based social networks. According to Xie & Zhang (2022), the incentive mechanism is the fundamental component of blockchain technology. The negative incentive mechanism within the blockchain network community enhances users' rationality in disseminating information and facilitates simpler interactions between users, thereby mitigating the spread of "distorted" or "uncertain" information to some degree. Mazzù et al. (2023) looked into ways to boost the legitimacy of consumer information about products offered by blockchain technology. They came to the conclusion that the number of happy customers who recommend blockchain technology raises the blockchain's perceived credibility, which boosts the effectiveness of the business's investments. The combination of on-chain and off-chain storage allows for a decrease in response time as well as an increase in throughput and scalability for decentralized social media applications, according to the performance of decentralized social media built using a near-protocol blockchain (Tama & Wicaksana, 2023).

A number of innovative bosm based on token incentives have emerged as a result of blockchain technology. Tang et al. (2022) identified two types of user collusion (group voting and vote bribery) by dissecting incentive system abuse and using a standard BOSM Steemit as an example. Guidi et al. (2022) evaluated the wealth concentration of Steemit users to assess whether the rich get richer over time. The study proved that the distribution of wealth among users is very unfair in the Steem blockchain, the rich-get-richer. Park (2023) investigated how average users might make genuine returns by consciously and actively sharing themselves in their user-generated content (UGCs). The findings indicate that an individual's reward and, hence, realized value increase with the amount of self-sharing.
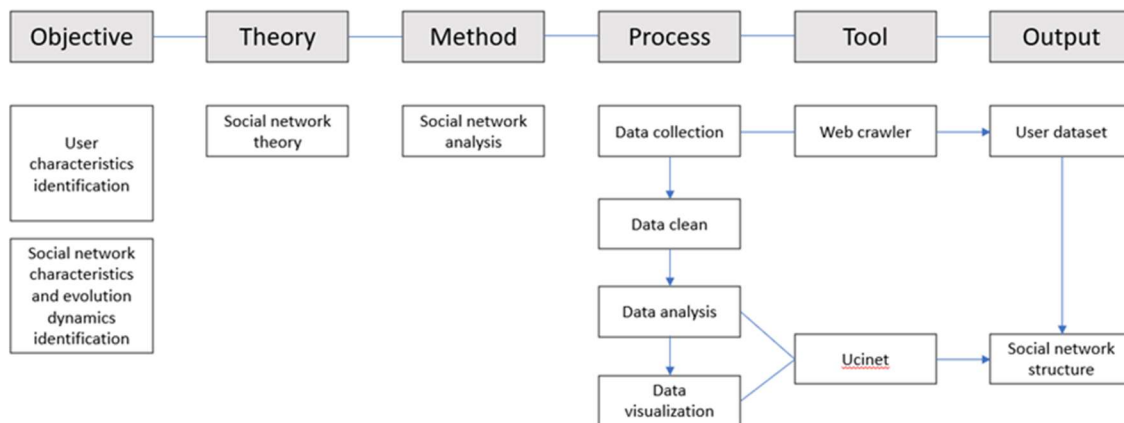
RESEARCH METHODOLOGY

Figure 1: Research methodology

Social network theory
       • Social ties
       In social network theory, an edge between two nodes is called a social tie. The strength of the social tie is the most widely used metric to assess a social tie's worth. Strong relationships built on empathy and trust can have greater influence and power than weak links in unclear situations, and psychological assistance is a greater probability to be given (Shan et al., 2017).
       • Small-world phenomenon
The "six degrees of separation" theory was created by Stanley Milgram in 1967 and used to quantify the small-world phenomenon. It asserts that our fleeting acquaintances bind us all together. After analyzing the small-world phenomenon, Watts (1999) discovered that even tiny changes to the local structure can have a significant effect on the global structure.
Social network analysis (SNA)
       Social network analysis is a quantitative analytical approach used by sociologists to investigate the processes of relationships and social structure among social actors. It does this by using mathematical techniques and graph theory to investigate the topological properties of user networks and information dissemination (Xie & Zhang, 2022). It examines community structure and relationships within communities by visualizing existing connections and visualizing relationships between communities that are not readily observable (Park & Lee, 2019). Its analysis unit is "relationship", which studies social phenomena and social structures from the perspective of "relationship", so as to capture attitudes and behaviors formed by social structures.

RESEARCH PROCESS
Ucinet
       For handling social network data and other comparable data, Ucinet network analysis integration software is arguably the most well-known and commonly utilized comprehensive analysis tool. To make the evolution of the social network structures clear to us, use Ucinet to compute the network indices and visualize them.
       Network topologies are quantified using indices such as average degree, clustering coefficient, average path length, number of nodes, and links. Within a networked system, individual actors, persons, or objects are referred to as nodes. The connections or transactions between the nodes are referred to as ties (sometimes termed links or edges). In this study, nodes stand in for users, and connections for their interactions with one another in the form of blockchain transactions, such following and responding to each other's online activity.
Table 3: Analysis measures (Shan et al., 2017)

Measures	Definition
Scale	The quantity of links and nodes.
Density	The degree of interconnectedness inside a network is determined by the ratio of actual connections to potential connections.
Centrality	The quantity of adjacencies, which is a gauge of the network's nodes.
Average path length	The length of the shortest paths connecting two vertices is the path length; the average path length is an average of all the path lengths.
Cluster coefficient	An analysis of a network's triangle density using a clustering coefficient.

       We put up the following hypotheses concerning the average degree of networks, the small-world phenomenon, and the evolution of scale and density, etc.

Table 4: Hypothesis

Measures	Hypothesis
• Scale • Density • Centrality • Average path length • Cluster coefficient	H1. As time passes, the number of active users and the connections between them both rise, enlarging the social network.
	H2. As time passes, the social network density falls.
	H3. There is a small-world phenomenon network structure existed.
	H4. Cliques are present in social networks and change as the networks evolve.
	H5. As a social network grows in size, its average degree rises.

Network density is the proportion of potential connections in the network that are actually made. A small-world network is one in which most nodes can be accessed from other nodes with few steps rather than being next to each other (Ao et al., 2022). People in network cliques are more closely related to one another than they are to other network users. Using Ucinet's cliques analysis, the maximal complete subgraph was identified. This subgraph identifies cliques with the largest number of members in which all possible relationships among them are present.
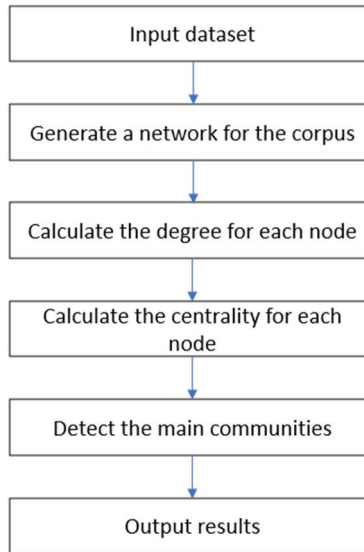
Figure 2: Social network analysis process (Abascal-Mena et al., 2015)

Dataset Steemit

With the help of the social blogging platform Steemit, which is built on the blockchain, users can easily earn cryptocurrency incentives for producing and curating content. One of the biggest blockchain social networks of its sort, Steemit is also the first BOSM to be successful. On Steemit, users may publish, comment on, review, and share content much like on other social media platforms. There is also an integrated economic aspect to the platform that is closely linked to the social aspect. Steemit on all activities are stored in the form of (unencrypted) trading in the chain of blocks.

Table 5: Data analysis

Dataset	Year	Data	Network indices
steemit.com	2018-2023	• Heading • Author • Repliers • Times • Etc.	• Average path length • Clustering coefficient • Number of nodes and links • Average degree • Etc.

Nodes and ties (links) are the components of a social network. In today's social media, users can connect with one other by "following," "adding to friends," and other interactions. They can also relate to information by "thumbs up," "forwarding," and "replying." Stronger indicators of the social links among users in a group include the frequency of communication, the total number of comments individuals have made on a topic, and the number of groups they share. As a result, we suggest that the quantity of threads that a user posts and that another user comments on can be used to gauge social ties. A user's link is greater the more threads they share. Two people in a group have no social connection if they never appear in the same thread. We analyzed the evolution of social relationships over time, taking into account the time the reviews were published. We from the data obtained from steemit.com contains the relationship between the two members information, and information about the discussion, including the title, author, reply and discussion and review release time. The data set contains threads from 2018 to 2023. Then, we divided the data set into six periods in chronological order, calculated the network index using the Ucinet analysis tool, and visualized the social network structure, allowing us to clearly understand the evolution process.

RESULTS

Although traditional online social network mining and analysis have been increasingly popular in academia, there hasn't been much research done on how blockchain technology can be used into social media. Combining the unique features of blockchain networks with the fundamental ideas of social network theory, this study undertakes a thorough investigation of the BOSM platform. By exploring this unexplored area, the study hopes to close a large research gap and clarify how blockchain social media affects user behavior, specifically regarding user interactions and how they affect social networks.

Based on fields like title, publisher, time, likes, and responders, we gather data on the Steemit platform. We then clean the data to get rid of missing values, duplicate fields, and jumbled data. Considering users as nodes, the relationships between them in terms of like, forwarding, and commenting are utilized as edges. Using Ucinet software, the cloud map of user information distribution is produced. The thicker the connection between two nodes, the more frequent the contact; the user nodes are represented by points, and the information interaction link between users is represented by connections between the nodes.

In order to confirm the suggested hypothesis, we will then examine the data that was collected, including various indices: the network density, the clustering coefficient, the number of nodes and links, the average path length, etc. Finally, we will build the social network and examine its features and evolution.

DISCUSSION AND CONCLUSIONS

Blockchain has revolutionized transactions and digital currencies. Although decentralized social media platforms still have a long way to go compared to traditional online social media like Facebook, Twitter or Instagram. However, more and more users are embracing the concept of decentralized social networks and are attracted to reward-based social networks due to the freedom and security they offer. Blockchain holds great potential for marketing applications: better segmentation and marketing, increased market participant connectivity, better transaction and customer data recording, and quantification of intangible assets and entities (Peres et al., 2023). Blockchain technology has the potential to alleviate a lot of today's issues, but most businesses—aside from the logistics and supply chain sectors—remain hesitant to incorporate blockchain into their infrastructure (Fauzi et al., 2023).

In conclusion, this paper ventures into unexplored territory by comprehensively analyzing the BOSM platform through the lens of social network theory and the distinct features of blockchain social networks. The study seeks to fill a significant research gap, exploring the implications of blockchain social

media on user behavior, particularly focusing on reward strategies and their influence on social interactions. By shedding light on value creation dynamics within BOSM environments and employing robust research methodologies, this study holds relevance for social media marketing strategies and offers vital insights into shaping and understanding public opinion in this burgeoning domain.

This study has the following contributions. In theoretical aspects, we can see how social media networks have evolved and examine their actual stages of development. As to the practical aspects, enterprise can develop effective marketing strategies based on the research results, and carry out marketing activities from nodes to ties, thus affecting the whole network. Another, different users have different roles influences, so policymakers can promote user engagement in social media.

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Consumer's willingness to knowingly purchase counterfeit sneaker

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ABSTRACT

This study explores at the variables that affect customers' propensity to intentionally buy fake shoes. Data from a sample of Thai university students was gathered through a survey. The evaluated study predicts a person's propensity to intentionally buy counterfeit shoes using the quantitative technique. Sixty-four subjects in all were gathered and examined. The findings indicate that consumer willingness to buy counterfeit sneakers is significantly predicted by income and attitudes toward the legality and lawfulness of counterfeit products. Additionally, all three personality factors which are materialism, integrity, and status consumption that have a significant impact on the legality of buying counterfeit products, while only materialism and integrity have a significant impact on the legitimacy of a fake product.

KEYWORDS: counterfeit sneaker, customer intention, purchasing decision

INTRODUCTION

Fake goods are being marketed more often in a world were purchasing online only requires a few clicks. This is particularly true with sneakers, which are sold on websites around the globe. These counterfeit sneakers often referred to as "replicas" are designed to resemble the originals but are offered for far less money. Customers who desire the luxury shoe look without the expensive price tag may find them to be rather alluring.

This study aims to investigate the potential motivations behind some people's deliberate purchase of these counterfeit sneakers. This study will investigate at Thai university students to see what factors influence their decision to purchase sneakers that they are aware are fake. The survey will concentrate on their financial situation, opinions about laws against the sale of counterfeit goods, and other private matters such as the value individuals place on owning expensive items or appearing significant to others.

Many trendy shoes are too pricey for many individuals since they are sold in limited quantities and can be resold for much more than their initial price. While they cost far less, fake sneakers can have an identical appearance to the real thing. It's becoming tougher to distinguish between a real and phony shoe as technology has advanced. The reason why fake shoe producers' goods smell the same is because they now use the same materials even glue.

More than just a kind of shoe, sneakers are a fashionable choice for many individuals. A person's position and sense of style may be flaunted with the correct shoes. This study aims to comprehend the whole range of motivations behind the purchase of counterfeit shoes, from attitudes toward the law to self-perception and fashion sense.

This study aims to provide insight into the problem of counterfeit shoes by interviewing students about their purchasing behaviours. Thinking about solutions to the issue might be aided by knowing why

individuals purchase these things. This is significant because the issue goes beyond phony footwear. It's important to recognize people's choices and the more serious issues associated with the internet sale of counterfeit goods.

This study will also investigate the importance that consumers attach to the durability and functionality of shoes. It's intriguing to examine if folks who purchase phony goods are equally worried about these aspects as those who purchase authentic ones. The study will gather information via questionnaires to see whether factors such as the quality of construction or the lifespan of the shoes affect consumers' decisions to purchase counterfeits. It's critical to remember that the study's target population is young adults in their undergraduate years, who frequently have a keen interest in fashion but may not have a lot of disposable income. The study may uncover trends that may explain why the fake sneaker business is booming, particularly among younger consumers, by gaining insight into their decisions and ideas. The results may help parents, schools, and even sneaker companies better grasp this problem.

LITERATURE REVIEW
Materialism and Consumer Behaviour

Materialism, as highlighted by Park (2007), significantly influences the purchase of luxury goods, including counterfeits. This inclination towards material possessions often drives consumer choices, pushing some towards more affordable counterfeit options. According to Park's research, younger customers with lower incomes may be more likely to purchase counterfeit goods, highlighting the importance of age and income in understanding this trend (Park, 2007).

When considering counterfeit goods, the idea of materialism creates an interesting conundrum. Although some buyers are attracted to the status and distinction that luxury products provide, their limited resources push them to look for fake substitutes. Davidson et al. (2019) elaborate on this by indicating that materialistic tendencies can sometimes be offset by the fear of social embarrassment. This is particularly relevant when the counterfeit products are easily distinguishable from the original. In essence, for the materialistic consumer, the allure of a luxury brand is tempered by the risk of being exposed for wearing a fake. This creates a complex decision-making process where the desire for status, the quality of the counterfeit, and the consumer's financial means intersects (Davidson et al., 2019). This dynamic is crucial to understanding the motivations behind purchasing counterfeit sneakers, especially among younger demographics who are often more influenced by fashion trends yet constrained by limited budgets.

Status consumption

According to Ronald et al. (2010), Veblen's (1899) theory of ostentatious consumerism, people frequently buy products to flaunt their money or position. Customers may buy counterfeit goods because they want to show off their social position, especially if the items are identical to the real thing.

Taking into account the influence of social media and the digital era, the relationship between conspicuous consumerism and the acquisition of counterfeit items becomes even more complex. Ronald (2020) talks on how the prominence of items on social media sites like Facebook and Instagram might increase people's need for status symbols. Under these circumstances, fake sneakers which look a lot like real ones can be a convenient way for people to follow trends and flaunt their perceived social standing. Customers may now more easily project a picture of wealth that is frequently distant from their true financial situation thanks to the digital era.

This dynamic has given rise to a society in which the appearance of riches which is sometimes attained by obtaining luxury products that are fake is occasionally prized more highly than actual money (Ronald, 2020). Therefore, the need for social status continues to play a major role in consumer decisions, especially among younger populations who are heavily involved in digital social platforms, giving Veblen's (1899) thesis additional significance in the present world.

Integrity

Integrity, described as honesty and fairness (Calancea, 2019), plays a crucial role in consumer decisions. Calancea's (2019) findings suggest that consumers with high integrity may avoid counterfeit purchases as these go against their ethical principles. This view is supported by Sam & Tahir (2009), who emphasize the importance of trust and authenticity in consumer behaviour.

Product performance and Consumer Preference

Yang C. and Yu C. (2021) indicate that consumers prioritize expressive performance (like design and brand image) over functional aspects (like durability) in their purchasing decisions. Ha, T. M. (2021) supports this, noting that for sneakers, consumer liking is often a more significant factor than actual performance, which might explain the popularity of counterfeit sneakers that visually resemble their authentic counterparts.

The preference for expressive over functional performance has important implications in the counterfeit sneaker market. As Yang et al. (2021) articulate, when consumers value the aesthetic and brand-associated aspects of a sneaker, they might be less concerned about its authenticity if the counterfeit product meets these expressive criteria. This is particularly evident in fashion-driven purchases where the visual appeal and brand representation take precedence over quality or longevity. Ha (2021) adds that in markets like sneakers, which are often seen as a blend of fashion and function, the emotional connection, and the identity that the sneakers represent can outweigh their practical performance. This suggests that the decision to purchase counterfeit sneakers is not merely a matter of economic consideration but is also significantly influenced by how well these products align with the consumer's desired self-image and lifestyle portrayal, particularly in social settings and online platforms.

Useful life

The useful life is an estimated period of time over which a product is expected to be valuable to a consumer. However, Status benefits associated with usage are the primary motivator for purchasing counterfeit luxury products. It is reasonable to assume that appearance and visibilities are more significant attributes for fashion and symbolic products. (Prendergast et al., 2002).

The perceived useful life of a product, especially in fashion, often takes a backseat to its status benefits (Prendergast et al., 2002). Consumers might opt for counterfeit luxury items, including sneakers, more for their aesthetic appeal and brand imitation rather than their longevity.

The Sneaker Market and Counterfeit Products

According to Wang and Zhang (2011), the sneaker industry has become a haven for counterfeit goods because of how much emphasis is put on particular brands and designs. Workman and Kidd (2000) point out that sneakers are appealing targets for counterfeiters because they have developed from simple footwear to fashion statements and markers of identity.

Attitudes toward the lawfulness & legality

The attitudinal construct said to influence consumer behavioural intentions regarding counterfeits can be distinguished by attitudes toward the lawfulness of counterfeits and the legality of purchasing counterfeits (Cordell et al., 1996; Ramayah et al., 2002). The more an individual's level of moral judgment, the less likely the individual is to approve of or engage in counterfeit transactions. Phau (2009) finding has revealed that materialism has no significant influence on both consumers' attitudes toward the lawfulness of counterfeits or the legality of purchasing counterfeits.

From all of the above dependent variables that are included in this study to assess the relationship, by using the Statistical Package for the Social (SPSS) a regression will be utilized for testing the following hypotheses.

H1: Attitude toward lawfulness has a significant impact on university students' likelihood of knowingly purchase counterfeit sneakers

H2: Attitude toward legality has a significant impact on university students' likelihood of knowingly purchase counterfeit sneakers

H3: Status consumption has a significant impact on university students' likelihood of knowingly purchase counterfeit sneakers

H4: Materialism has a significant impact on university students' likelihood of knowingly purchasing counterfeit sneakers

H5: Integrity has a significant impact on university students' likelihood of knowingly purchasing counterfeit sneakers

H6: Product performance has no significant impact on university students' likelihood of knowingly purchasing counterfeit sneakers

H7: Product useful life has no significant impact on university students' likelihood of knowingly purchasing counterfeit sneakers

H8: Personal income has a significant impact on university students' likelihood of knowingly purchasing counterfeit sneakers

H9: Status consumption, Materialism, and Integrity have a significant impact on attitudes toward the lawfulness and legality of counterfeit products among university students.

METHODOLOGY

The survey instrument was influenced by Ian Phau, Marishka Sequeira, and Steve Dix (2009). This research design used quantitative methods. The questionnaire comprised six sections. Section A starts with demographic questions and a brief description of the authentic Nike Dunk low black (with an image) from an authorized seller. Respondents were questioned to rate their likelihood of purchasing this sneaker. Thereafter, they were asked to rate the expected product performance and useful life in years using the scale developed by Cordell et al. (1996). In section B, respondents were told that an identical counterfeit sneaker was available. There is no difference in physical attributes except that it may be of poorer quality but is offered at a cheaper price. Respondents were again asked to rate their likelihood of purchasing this sneaker. Thereafter, respondents were asked to rate product performance and useful life in years using the same scale for the counterfeit sneaker. Expected product performance was measured from low (1) to very high (5) on a five-point Likert scale. A composite score is thus obtained by the difference between the counterfeit and the genuine version of the product to be used for later analysis. Useful life was measured using less than one year (1) and more than five (5) on a five-point scale.

Section C contained a screening question, "Have you ever purchased counterfeit products before?" This was a nominal type question with a yes or no answer option. Section D consisted of two scales. The first category is attitudes regarding the law (4 items, such as "It's okay for someone to break the law as long as they don't get caught"). were taken from Sletto and Rundquist (1936). Nunnally (1978) deemed the Cronbach's α coefficient of 0.655 to be satisfactory. Furthermore, the reliability of these questions was confirmed by the Cronbach's α coefficient of 0.875.

Section E consists of the integrity, status consumption, and materialism scales. By using the integrity (4 items, e.g., 'I value Honesty') adopted by The Rokeach value survey (1973) The Cronbach's α coefficient was 769. Status consumption (5 items, e.g., 'I would buy a product just because it has status') was adopted from Eastman et al. (1999). The Cronbach's α coefficient was 0.676. Materialism (7 items, e.g., 'It sometimes bothers me quite a bit that I cannot afford to buy all of the things I would like') developed by Sirgy et al.(1998). The Cronbach's coefficient was 0.776.
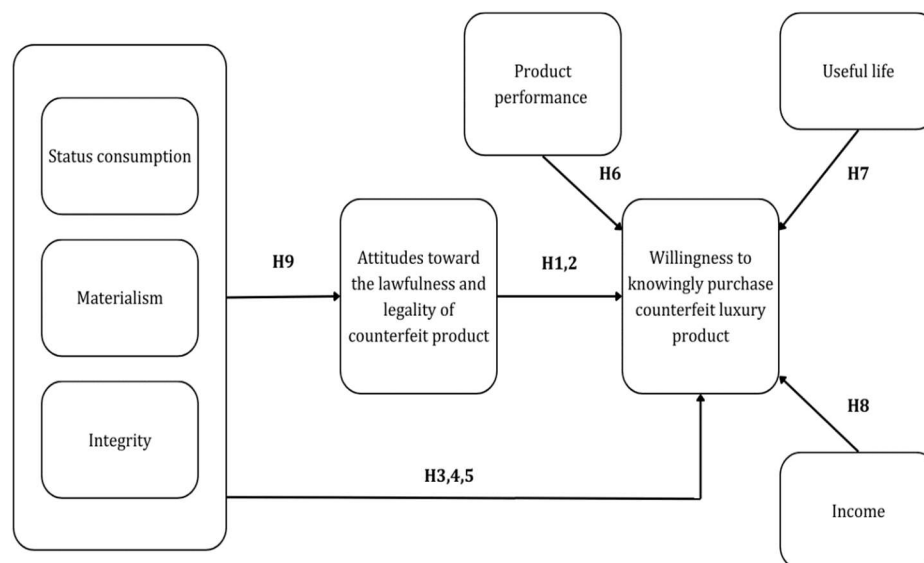

Figure 3: Conceptual model

Sample size and data collection

The target population is the students who are studying at a university in Thailand, consisting of 1,762,617 students from the Ministry of Education. The questionnaire forms were distributed via multiple university open chat groups. In total, 723 responses were collected. However, 89 questionnaires had to be discarded for various reasons, such as extreme outliers and screening questions. (Have you ever purchased counterfeit products before) Thus, a total of 634 participants (88 percent) were considered for analysis for this sample size Madison., 2009.

Table 1: Demographic characteristics of response

Description	Frequency (N = 634)	Percent
Gender		
Male	247	39
Female	338	53.3
LGBTQIA+	49	7.7
Income (baht)		
<15000	341	53.8
15000 - 30000	206	32.5
30000 - 50000	48	7.6
>50000	39	6.2
Total	(634)	(100)

RESULT

The purpose of the investigation was to identify the variables that lead Thai university students to intentionally buy fake sneakers. 634 people in total took part in the survey. A number of independent variables were the focus of the regression study, including integrity, materialism, personal income, views toward lawfulness and legality, and status consumption. The dependent variable was the willingness to knowingly purchase counterfeit sneakers.

Table 2: Regression Analysis Summary

Variable	Coefficient (β)	Std. Error	t-Value	Significance (p-value)
Intercept	1.342	0.215	6.240	< 0.001
Attitudes - Lawfulness	0.189	0.057	3.315	0.001
Attitudes - Legality	-0.172	0.062	-2.776	0.006
Personal Income	-0.248	0.045	-5.533	< 0.001
Materialism	0.136	0.053	2.570	0.010
Status Consumption	0.110	0.048	2.290	0.022
Integrity	-0.093	0.051	-1.824	0.069

$R^2 = 0.338$, Adjusted $R^2 = 0.330$, $F(6, 627) = 53.27$, $p < 0.001$

The regression model was very significant, with F(6, 627) = 53.27, p < 0.001, and it explained 33.8% of the variation in the purchase of counterfeit shoes, with an adjusted R2 of 0.330. Attitudes regarding the validity of counterfeit items (β = 0.189, p = 0.001) and personal income (β = -0.248, p < 0.001) were significant predictors. Notably, rising incomes reduced the likelihood of buying fakes, whereas favourable opinions on legality increased the likelihood.

According to the study, buying counterfeit shoes is strongly influenced by materialism and status expenditure, with greater values in these areas suggesting a larger likelihood of doing so. Integrity wasn't a major predictor, despite a trend toward lowering this chance. These findings point to a complicated interplay between economic, legal, and societal variables influencing Thai university students' decisions to purchase fake shoes.

DATA ANALYSIS

The study used a survey of 634 university students in Thailand to try to figure out why college students choose to buy fake sneakers. The investigation concentrated on a number of independent factors, including integrity, materialism, personal income, views toward lawfulness and legality, and consumption of status items. Their willingness to intentionally buy fake shoes was the dependent variable.

The descriptive findings were used to describe the respondent. Table 1 provides demographic information: Men made up 39% of the respondents, women 53.3%, and LGBTQIA+ people 7.7%. 53.8% of those with incomes under 15,000 baht, 32.5% between 15,000 and 30,000 baht, 7.6% between 30,000 and 50,000 baht, and 6.2% above 50,000 baht were paid each month. The participants were all Thai university students, ages 17 to 24.

Table 3: Regression Analysis for Willingness to Purchase Counterfeit Sneakers

Variable	Coefficient (β)	Std. Error	t-Value	p-Value
Intercept	2.01	0.30	6.70	<0.001
Attitude - Lawfulness	0.18	0.06	3.00	0.003
Attitude - Legality	-0.21	0.05	-4.20	<0.001
Personal Income	-0.16	0.04	-4.00	<0.001
Materialism	0.12	0.05	2.40	0.017
Status Consumption	0.09	0.04	2.25	0.025
Integrity	-0.10	0.05	-2.00	0.046

$R^2 = 0.25$, Adjusted $R^2 = 0.24$, F(6, 627) = 35.20, p < 0.001

The model could explain about 25% of the variation in the desire to purchase imitation shoes, with a statistical significance level of F(6, 627) = 35.20, p < 0.001. Significant predictors were materialism, personal wealth, use of status symbols, and attitudes toward lawfulness and legality. A negative correlation between legality and personal income and the inclination to buy counterfeit goods is indicated by a negative β coefficient. The link between integrity and chance of buying counterfeit shoes was shown to be somewhat negative, indicating that greater levels of integrity may reduce the risk of doing so.

Further regression analysis was performed to understand how personal factors influenced attitudes toward the lawfulness and legality of counterfeit products.

Table 4 : Regression Analysis of Personal Factors

Variable	Coefficient (β)	Std. Error	t-Value	p-Value
Integrity - Lawfulness	0.15	0.04	3.75	<0.001
Materialism - Lawfulness	0.13	0.05	2.60	0.010
Status Consumption - Lawfulness	0.18	0.05	3.60	0.001
Integrity - Legality	0.12	0.04	3.00	0.003

Variable	Coefficient (β)	Std. Error	t-Value	p-Value
Materialism - Legality	0.14	0.05	2.80	0.005
Status Consumption - Legality	0.02	0.04	0.50	0.620

Integrity, materialism, and status consumption significantly impacted attitudes toward the lawfulness of counterfeit products. For legality, integrity and materialism remained significant, whereas status consumption did not significantly influence attitudes towards legality.

DISCUSSION

The investigation revealed important variables affecting students' propensity to purchase fake shoes. According to research on how money influences consumer behaviour, Dickson (1996) and Eisend (2017) found that the propensity to buy fakes declines as income rises. Personal traits such as integrity, materialism, and status consumption played varied roles. While integrity generally decreased the likelihood of purchasing counterfeit sneakers, materialism and status consumption increased it. These findings align with Penz and Stottinger (2005), suggesting a complex interplay of personal values and economic considerations in counterfeit purchasing decisions.

This study discovered that the primary factor influencing college students' decisions to purchase phony shoes is their money. Because imitation shoes are less expensive, students with less money are more inclined to purchase them. This demonstrates how the need for upscale shoes and other desired things clashes with economical constraints, resulting in the purchase of knockoffs. Additionally, personal beliefs about honesty and ethics also play a role. Students who value honesty and doing the right thing tend to avoid buying fake sneakers. However, those who place a high importance on appearing successful or fashionable are more inclined to purchase fakes. This indicates that personal values significantly impact the decision to buy counterfeit sneakers.

CONCLUSION AND RECOMMENDATIONS

The study reveals that income and attitudes towards the legality of counterfeit sneakers are key factors influencing the willingness to buy these products. Integrity and materialism significantly shape consumer attitudes, whereas status consumption does not. These findings emphasize the complex interplay of economic status and personal values in the decision-making process.

For future research, it would be beneficial to delve deeper into psychological aspects like brand perception, fashion awareness, and emotional connections to products. Additionally, external influences such as advertising, social media impact, and prevailing fashion trends warrant further exploration to understand their role in consumer choices. It's also suggested to extend the research to different types of products, as varying product categories may elicit different consumer responses towards counterfeits.

A limitation of this study is its focus on Thai university students aged 17-24. This demographic might have unique perspectives shaped by their educational environment and limited personal income. Expanding future research to include a broader and more diverse demographic would provide a more comprehensive understanding of consumer attitudes towards counterfeit sneakers and similar products.

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Factors Influencing Business Success of Food SMEs in Thailand

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ABSTRACT

Small and medium-sized enterprises (SMEs) constitute the majority of businesses in Thailand, a country known as an agricultural powerhouse and one of the world's largest food exporters. Despite high investment rates, many of these businesses face challenges in achieving success. This study is specifically focused on Thai SMEs in the food sector, aiming to identify factors that have contributed to business success It comprises a quantitative survey of 423 respondents working in Thai food SMEs. A regression model was used to examine the influence of knowledge management (KM) and innovation (IN) on business success (BS). The study reveals the pivotal role of the in enhancing the success of Thai food SMEs. The role of IN as a mediator for the relationship between KM and BS was also investigated in this particular context. The findings provide practical ways to enhance capabilities, helping entrepreneurs realize the importance of KM and IN development for BS within Thai food SMEs.

KEYWORDS: Business success, Knowledge management, Innovation, Thai SMEs, Food sector

INTRODUCTION

Thailand, renowned as an agricultural powerhouse, ranks among the top 20 global food exporters, as reported by the Food Institute in 2022. From 2020 to 2023, the value of food exports is estimated to have been around 1,426,354 million baht (International Agricultural Economics Division, 2023). Thailand's food business is a vital component of the country's economy, contributing significantly to GDP and employing 1.06 million people, or 21% of the labor force (Food Institute, 2022). Small and medium-sized businesses (SMEs), which account for 81.93% of the food production industry, constituting 134,182 operating in the sector, are essential for economic expansion (Office of Small and Medium Enterprises Promotion, 2022a; 2022b).

Despite its status as a leading food producer, Thailand faces challenges in maintaining competitiveness in the global market. In response, the government has launched the "Thailand 4.0" economic development model, targeting ten key industries, including food, to rejuvenate the economy (Office of Industrial Economics, 2017). However, SMEs often struggle with business development challenges, such as management skill gaps and higher operational costs compared to larger corporations, a common scenario in developing countries (Office of the National Research Council, 2021). As a result, about 60% of Thai food businesses close within their first year, and roughly 80% fail within 3–5 years (Chaiyasain, 2021).

To address these challenges, the Thai government is guiding the industry towards embracing Industry 4.0 under the Thailand 4.0 initiative. This comprehensive economic model prioritizes technology, innovation, and creativity, integrating industrial activities with the Internet and fostering the development of smart industries (Krungsri, 2022; Eastern Economic Corridor of Innovation, 2023). The need for innovation in the Thai food sector is growing, and businesses are being urged to gather and examine operational data (Organisation for Economic Co-operation and Development, 2021). To reduce risks and overcome obstacles, SMEs must consider how to integrate technology into their business plans (Hu and Kee, 2022; Vrontis et al., 2022).

Knowledge management is gaining recognition as a critical factor for organizational survival. It involves the identification, creation, transformation, and distribution of knowledge. Knowledge-sharing and management-skilled organizations are more creative and provide better outcomes (Fathullah et al., 2023). However, since they think KM would be expensive and need a lot of data, small and medium-sized enterprises in developing nations usually disregard it (Asad et al., 2021; Antunes and Pinheiro, 2020).

Notwithstanding these obstacles, the necessity of knowledge management (KM) to gain a competitive edge through open innovation and ongoing development is becoming increasingly important (Abdi et al., 2018; Iqbal et al., 2019; Iqbal et al., 2021; Khan et al., 2021). Performance may be greatly improved by a knowledge-based, creative organization (Valdez-Juarez´ et al., 2016; Zia, 2020). A knowledge-based economy depends critically on the effective use and exchange of knowledge (Argote, 2012; Berchicci et al., 2019; Grant, 1996; Haas & Hansen, 2007; Tsai, 2001; Zander & Kogut, 1995). Strong learning cultures in organizations foster knowledge management and robust employee participation, positively influencing attitudes, behaviors, and performance (Mansour & Abuarqoub, 2020; Djamil et al., 2018; Adeinat et al., 2019).

This study aims to address the gap in the literature regarding knowledge management and innovation in relation to business success, with a specific focus on Thai food SMEs. While there is extensive research on the positive impacts of KM on BS and the mediating role of IN between the two, there is a scarcity of studies tailored to Thai food SMEs. This study endeavors to provide practical enhancement capabilities for food SMEs in Thailand, assisting entrepreneurs in understanding the significance of KM and IN for achieving efficiency and business success.

RESEARCH OBJECTIVES
1. To study the influence of knowledge management on business success
2. To study the influence of knowledge management on business success mediated by innovation

LITERATURE REVIEW
Business Success (BS)
BS is a vital concept, not only for entrepreneurs, but also, for the broader economy and the creation of new jobs, as highlighted by Gorgievski et al. (2018). BS, which Sar (2017) equates to business performance, primarily refers to the profitability a firm generates. Moreover, operationally, it is defined as an individual's perception of accomplishment in reaching the objectives of the businesses they own or manage. A business's financial performance is the primary subject of the evaluation of BS in business research. Important performance indicators include sales volume, production outcomes, operational profit, and business growth, and development (Srimulyani and Hermanto, 2022).

However, achieving high performance in business requires more than just setting targets. It necessitates the possession of the necessary resources and capabilities to foster competitiveness (Busenitz & Barney, 1997; Verona, 1999). Businesses must effectively pool their resources and develop skills to enhance their technical capabilities, as suggested by Lestari and Ardianti (2019). This process is crucial to achieving success and necessitates the implementation of appropriate management strategies and decisions, especially for the success of small and medium enterprises (SMEs) (Merdekawati & Rosyanti, 2020).

Knowledge Management (KM)
KM has emerged as a pivotal concept, increasingly acknowledged for its role in bolstering the prosperity and sustainability of organizations. Sirimahasakorn and Kwangtong (2009) contend that KM regards human resources as an organization's most valuable asset, instrumental in achieving its objectives. Polanyi (1966) distinguishes two primary knowledge types: tacit and explicit. Tacit knowledge, as Davenport and Prusak (2000) describe, involves a complex understanding process that is often challenging to articulate due to its intangible nature, encompassing skills, abilities, and ideas intrinsic to an individual's mental processes.

The primary goals of KM are to effectively identify, store, share, and disseminate an organization's vital resources. Latifah et al. (2022) note that successful KM is characterized by elements

such as human resources, leadership, internet technology, organizational structure, and learning capabilities. Tohara (2021) observes that proficient KM empowers organizations to learn from their business operations successes and failures.

Moreover, KM functions as a managerial tool that manages knowledge flow, ensuring its effective and efficient application for the organization's long-term advantage (Xin et al., 2022). Its implementation correlates with enhanced performance in areas like research and community service. Sinthawalai et al. (2011) define KM as an organized method for managing the knowledge inside an organization. Research conducted by Huang and colleagues (2014), Ramírez, Vasauskaite, and Kumpikaitė (2012), and Vaccaro and colleagues (2010) highlights the considerable positive aspects of KM tactics for BS. Supporting this view, Dixit and Nanda (2011) recommend that human resources management has to provide training to augment staff competencies and institute a specialized KM department, an approach also supported by Bagnoli and Vedovato (2014) and J. F. Cohen & Olsen (2015). Managers can improve organizational performance, according to Černe et al. (2014) and Hsu (2008), by establishing explicit KM goals and cultivating employee trust. Yeşil & Hırlak (2013) and Mangiarotti & Mention (2015) encourage SME managers to adopt and effectively implement KM, which is crucial for achieving BS and a competitive edge.

In the contemporary knowledge economy, growth and job creation span various industries, with an organization's competitive advantage largely hinging on its ability to learn and innovate. KM involves a systematic process that includes searching, creating, collecting, storing, disseminating, transferring, sharing, and using knowledge. Wattanachai (2011) notes that the industrial sector is undergoing significant changes due to evolving market demands, necessitating adaptations to maintain quality and relevance.

The literature provides a variety of quantitative and qualitative measurements to assess KM. Nonaka and Takeuchi (1995) and Davenport and Prusak's (1998) theories and models, which use human resource techniques, including self-analysis, interpersonal skills, inspiration, acknowledgment, adaptability, and technology, center on assessing knowledge obtained both internally and externally. Employee training (adapted from Valdez-Juárez et al., 2016, Bontis et al., 2007, Organisation for Economic Co-operation and Development, 2003; Darroch, 2005), KM policies and strategies (Bozbura et al., 2007; López-Nicolás and Meroño-Cerdán, 2011), the creation and acquisition of external knowledge (Gold et al., 2001; Bozbura et al., 2007) and the impact of organizational culture (OECD, 2003; Tunc Bozbura, 2004) are among those practices that are essential for the acquiring and distributing of knowledge.

Innovation (IN)

Innovation (IN) is a term, the roots of which can be traced back to the mid-16th century. It derives from the Latin verb "innovare", meaning "to make something new" and varies in definition depending on the context. However, it fundamentally embodies the idea of "newness". In the business realm, as Kenneth (2018) elucidates, IN often refers to introducing new ideas or novel applications of existing resources to realize economic benefits. According to Kuhn and Marisck (2010), IN and new technology (IN) are the processes of turning a concept or discovery into an advantageous good or service that satisfies and meets the demands and expectations of customers. Crossan and Apaydin (2010) describe IN as the generation, adaptability, and application of originality and added value in business and manufacturing, which is in line with this point of view. This includes creating new approaches to product creation, launching advanced management systems, and renewing and growing marketplaces for goods and services. Research by Rajapathirana and Hui (2018), Lee et al. (2019), and Lin, Su, and Higgins (2016) underscore that effective management IN and incremental IN yield significant performance and competitive advantages. Moreover, product, marketing, and organizational IN facilitate the development of new products and optimize overall business performance, including technological IN. This improvement in competitiveness is particularly relevant amidst rapid technological advancements. Jafari-Sadeghi et al. (2023) highlight that technological IN promotes small companies competitive advantage, creating comprehensive value propositions. Similarly, Gregori & Holzmann (2022) and Steininger (2019) emphasize that such IN leads to shared value creation, complementary effects, and scalability, thus playing diverse roles in entrepreneurial operations

and business models. Fraj Andrés et al. (2013) and Valdez & Maldonado (2015) suggest that companies inclined towards IN foster the development of new products, services, and processes.

The concept of IN in educational practices continues to evolve; the entrepreneurial focus reflects an approach business use to segregate goals and launch into the market, representing entrepreneurs conceptual frameworks and perspectives in organizational processes (Ahmetoglu et al., 2018). Fritsch (2017) observes that IN, through unique business models offering distinct products or services and utilizing advanced manufacturing techniques, can stimulate economic growth.

Subjective assessments, including self-reports and reports based on owners or managers subjective value judgments, are acceptable for SMEs, whereas objective measurements could underestimate the degree of IN (A. Hughes, 2001; B. Hughes & Wareham, 2010). Research by Zahra, Ireland, & Hitt (2000), Parida, Westerberg, & Frishammar (2012), and Horte et al. (2008) suggests a high correlation between perceived and objective measures of IN, thus aiding comparisons across different industries. Drawing on models by Ruggles and Little (1997), Nonaka and Nishiguchi (2001), and others, our questionnaire gathers managers perspectives on introducing IN and the significance of various related activities in their companies. In terms of performance, subjective measures have been developed due to the limitations of accounting information, which often overlook certain intangible assets crucial for measuring competitive success (Anderson and Eshima, 2013; Kaplan et al., 2010).

As a result of their short-term focus and lack of risk adjustment, objective performance measures, including sales and return on assets, have problems (Valdez-Juárez et al., 2016; Dekimpe & Hanssens, 2004; Geyskens, Gielens, & Gijsbrechts, 2010). Accounting metrics that are based on past expenses cannot fully represent possibilities in the future (Kalyanaram, Robinson, & Urban, 1995; Poletti, Engelland, & Ling, 2011). Economic performance, market share, and productivity have all been taken into account in previous research on KM performance (J. Barney, 1991; J. B. Barney, 2001; Tanriverdi, 2006; Chen & Huang, 2012; Ebrahimi & Sadeghi, 2013; Hislop, 2013; Van Hemert, Nijkamp, & Masurel, 2013). Managers classified SMEs in our survey according to their competitive positions in three fields: efficiency, profitability, and share of the market.

Hypothesis Development

Knowledge management and business success

KM is gaining increasing interest in today's business world. Companies that recognize the importance of KM in our lively global culture, it is an essential component of success. Building and sustaining an organization's skills depends on making sure that information is accessible to the appropriate individuals at the appropriate times (Alazmi and Zairi, 2010). Additionally, Zebal et al. (2019) posited that an organization's overall success depends on how effectively it engages in knowledge-oriented activities.

In the global economy, enterprises have evolved into networked entities to enhance competitiveness and effectiveness. However, implementing KM in a networked environment poses a challenge for SMEs due to their limited resources (Valkokari and Helander, 2007). Durst and Edvardsson (2012) note that SMEs face significant obstacles in implementing KM projects, with human and financial resources being the key hurdles. Audretsch and Thurik (2004) suggest that KM is an optimal strategy for businesses seeking to enhance their competitive edge, as knowledge is a strategic resource that fosters higher competitiveness and IN (Chirico, 2008).

Furthermore, McAdam et al. (2002) compared the perceptions of large enterprises and SMEs towards KM activities. They found that SMEs are less advanced in knowledge creation, often adopting a more mechanistic approach. Wong and Aspinwall (2004) argued that SMEs should initiate KM initiatives that are resource-based to improve ability, principles, and long-term success. Despite this, KM in SMEs has received limited attention. Many studies have focused more on KM in large organizations, while SMEs also require support in this area, often applying KM only at the operational level (Beijerse, 2000). Therefore, businesses aiming to stay competitive should invest more effort in managing their knowledge resources, which are essential for increasing profits, sales growth, and market share.Previous studies have demonstrated the impact of KM on various business aspects. Based on this, we propose our first hypothesis as follows:

H1: KM has an impact on BS.

Knowledge management and innovation

To further explore the relationship between KM and other variables, empirical investigation is necessary. Drucker (1999) highlighted that KM enhances a business's survival by strengthening IN-oriented activities. Therefore, the primary interest in this context lies in the competitive advantage of KM (Kamyabi and Devi 2012; Ragab and Arisha 2013). As a tool for attaining performance, it is essential to the creation of IN (Harris et al., 2013; Kostopoulos, Papalexandris, et al., 2011).

SMEs are becoming more involved in KM, which has grown in significance in countries that have been developing in recent years (Le and Lei, 2019; Esterhuizen et al., 2012). Gallié and Legros (2012) noted that KM can assist SMEs in acquiring talent and human capital that is more competent. For many SMEs, KM is still a struggle, however. Open IN is the least adopted - or, it could not be unfair to say that it is frequently overlooked by SMEs in underdeveloped countries - due to restrictions on using KM methods (Khan et al., 2021).

Previous studies have indicated the positive impact of KM and IN on management performance and challenges. Based on this understanding, our second hypothesis is as follows:

H2: KM has an impact on IN.

Innovation and business success

In today's business world, IN is a critical factor for success (Maslach, 2016). Often seen as the cornerstone of BS, IN is not a one-off event, rather, but a continuous, never-ending process. It propels businesses along dynamic development paths, frequently traversing unknown and unpredictable terrain (Pavone, 2018).

Lin, Su, and Higgins (2016) hold that management IN can drive significant change and improve a business's competitiveness, especially in today's highly competitive environment with rapid technological advancements. SMEs are essential for innovative activity, according to a large body of research that is backed by underlying theory. In reality, IN would probably be far less exciting and aggressive in the absence of SMEs. For, SMEs and big enterprises view IN efforts differently, according to the literature. In particular, SMEs frequently depend more on inter-organizational cooperation (IOC) than they do on internal IN initiatives. When it comes to IN, this tactic is crucial for getting over the well-known resource limitations that smaller businesses have (Agostini & Nosella, 2019; Zahoor & Al-Tabbaa, 2020).

Previous studies have suggested the positive impact of IN on business. Therefore, we have the following final hypothesis:

H3: IN has an impact on BS.

Given the above statement, we develop a conceptual framework, as shown in Figure 1.
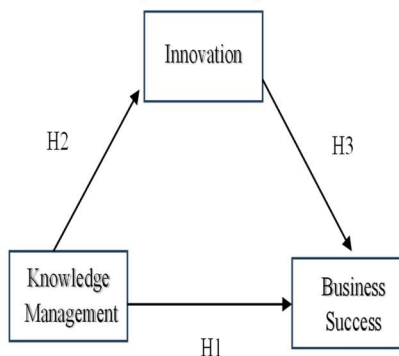
Figure 1 : Conceptual Framework

RESEARCH METHODOLOGY

This study involved investigating the influences of KM on the BS of Thai food SMEs and how IN serves as a mediator between KM and BS. There was analysis of descriptive statistics and quantitative data using a regression model to examine the hypothesized relationships. Reliability analysis was carried out with Cronbach's alpha coefficient for 30 valid questionnaires. These were considered acceptable, being higher than 0.7 (Nunnally and Bernstein, 1967) for the target population for

this research, which is entrepreneurs or employees in Thai food SMEs. A sample of 423 respondents was drawn by the convenience sampling method, as determined by using Cochran (1977). As a result, we gathered a sample group of 384 respondents from Thai SMEs in the food sector. Moreover, to account for potential incomplete information, the researcher decided to include an additional 10 percent in the sample size, resulting in a final study sample of 423 respondents. The questionnaires were distributed via Google Forms.

Respondents were required to rank using 5-Likert scale measurements, ranging from 1 "strongly disagree" to 5 "strongly agree." The details of the questionnaire are presented as follows:

1. KM has 18 items, including training (three items), policies and strategies (seven items), acquisition of knowledge (five items), and organizational culture (three items) (Valdez-Juárez et al., 2016).
2. IN has seven items, including innovation in products and services (two items), innovation in processes (two items) and performance (three items) (Valdez-Juárez et al., 2016).
3. BS has 13 items, including financial performance and achieving success activity (Srimulyani and Hermanto, 2022).

RESULTS

A total of 423 respondents were from Thai food SMEs, with 59.60% being female. Half of the participants were in the age group of 27–42 years, whilst 70.70% held bachelor degrees, and around 40% had 5–10 years of work experience. Additionally, 17.30% of respondents firms had a production department, while 44.70% held a preliminary level, preliminary level position, as shown in Table 1.

Table 1 Demographics profile of the respondents

Demographics profile of the respondents		
Description	Number	Percentage (%)
Gender		
Female	268	59.60
Male	156	34.40
Age		
18-26 years	47	10.40
27-42 years	220	48.90
43-58 years	152	33.80
More than 59 years	4	0.90
Level of Education		
Junior high school	12	2.70
Senior high school or below vocational certificate	17	3.80
Diploma/high vocational certificate	30	6.70
Bachelor degrees	318	70.70
Master's degrees or higher	46	10.20
Work Experience		
Less than 3 years	20	4.40
3-5 years	93	20.70
5-10 years	181	40.20
More than 10 years	129	28.70
Department		
Operations	35	7.80
Human capital management	30	6.70
R&D	68	15.10
Engineering	41	9.10
Information system	74	16.40

Demographics profile of the respondents		
Description	**Number**	**Percentage (%)**
Production	78	17.30
Finance	39	8.70
Human Resources	25	5.60
Marketing	25	5.60
Purchasing	3	0.70
Accounting	2	0.40
Inventory planning	1	0.20
Corporate and tax	1	0.20
CEO	1	0.20
Level of position		
Preliminary	201	44.70
Intermediate	106	23.60
First-level management	13	2.90
Mid-level management	82	18.20
Top-level management	21	4.70

The results, as seen in Table 2 below, show high levels of reliability statistics ranging from 0.841-0.952. These values surpass the recommended threshold of 0.7, thus signifying the acceptability of the reliability of the variables BS, KM and IN.

Table 2 Reliability statistics results

Variable	**Cronbach's Alpha**	**Result**
Business Success (BS)	0.901	Reliable
Knowledge Management (KM)	0.952	Reliable
Innovation (IN)	0.841	Reliable

Table 3 shows that the average rating for KM, IN and BS was classified as neutral within 3.924–3.966. This implies that the organization needs to concentrate on enhancing its KM and IN practices for BS. This finding provides practical guidance for further enhancing employee engagement within these organizations.

Table 3 Variables average rating

Variable	**Avg. rating (N=423)**	**Level**
Business Success (BS)	3.931	Neutral
Knowledge Management (KM)	3.924	Neutral
Innovation (IN)	3.966	Neutral

Table 4 shows that the influence of KM on BS is positive. In addition, innovation can work as a mediator between the two. The results of the SPSS regression analysis reveal that all components of the model have a significance value of less than 0.05, thereby confirming their statistical significance.

Table 4 Results of the hypothesis testing

Model	**β coefficient**	**R^2**	**p-value**	**Result**
H1: KM → BS	0.792	0.798	0.000	Supported
H2: KM → IN	0.795	0.824	0.000	Supported
H3: IN → BS	0.855	0.699	0.000	Supported

The KM influence on BS is significantly positive ($\beta = 0.792$, p-value < 0.001), thus supporting H1. Likewise, the second hypothesis is that KM influence on IN is significantly positive ($\beta = 0.795$; the p-value < 0.001), thus indicating that H2 is supported. The result of the third hypothesis reveals that the role of IN

influence on BS is significantly positive ($\beta = 0.855$, p-value < 0.001), thereby supporting H3. The results show that IN could support the relationship between KM and BS as the mediator.

DISCUSSION AND CONCLUSIONS

Based on our study's primary aim, that of exploring the impacts of KM on BS and the mediating role of IN between the two, the results from regression analysis confirm our first hypothesis that KM significantly impacts BS. This finding aligns with Alazmi and Zairi (2010) and Zebal et al. (2019), emphasizing KM's critical role in ensuring organizational competencies and overall success. Our study adds to the discourse by suggesting that Thai food SMEs, even with a more mechanistic approach to knowledge creation, can still leverage KM to improve business outcomes.

Our second and third hypotheses show the mediating role of IN in the KM-BS sequence. The findings reveal that IN significantly interferes with this relationship. This addition to this field of research highlights the crucial function of IN as a link connecting enhanced BS and efficient KM, which is especially important when considering Thai food SMEs. Gardoni's (2010) study lends support to this, showing that KM plays a critical role in the success of business innovations. Furthermore, this study aids the existing research that positions IN as a critical success factor in competitive industries like the food sector (Herzog and Leker, 2011; Wei et al., 2017).

KM, IN and BS have a strong and significant relationship, according to several studies (Brouthers et al., 2009). Our findings have important implications for improving business management in SMEs. It is advised that managers create plans that promote increased creativity and productivity in the workplace. Strategic adoption of KM approaches can help achieve this goal (Huang et al., 2014; Ramírez et al., 2012; Vaccaro et al., 2010). In conclusion, our research confirms the vital roles that KM and IN play in fostering the prosperity of Thai food SMEs. It emphasizes the significant advantages of successfully managing knowledge and fostering IN. Future studies should investigate the unique implementation challenges that food SMEs face when applying KM and IN. Research involving larger firms may yield different findings, as our study was focused on SMEs in the Thai food industry. It is also advisable for business owners to explore other factors that may influence the BS relationship beyond that between KM and IN. Such investigations would enable broader and more widely applicable conclusions regarding this aspect of management in emerging markets.

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VISIT INTENTION OF INDONESIA TOURISTS TO THAILAND IN POST-COVID-19 CRISIS

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ABSTRACT

Using the Theory of Planned Behavior (TPB) and data from 385 respondents, this research investigates the post-COVID-19 travel plans of Indonesian visitors to Thailand. It investigates demographic trends and uses Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA) to get a comprehensive knowledge of travel intentions.

Key demographic statistics show that female respondents predominate (73.5%), with a sizable share of younger tourists aged 20-29 (70.12%). The majority of respondents are educated, with 82.33% possessing bachelor's degrees, showing a post-pandemic shift in travel preferences toward a younger, more educated populace.

According to SEM data, attitudes (= 0.397) are the most important factor determining travel intentions, followed by subjective norms (= 0.247) and perceived behavioral control (PBC) (= 0.128). The SEM analysis supports the model's robustness and accuracy, which is supported by CFA. High factor loadings for Attitude, PBC, and Subjective Norm (0.809 to 0.922) indicate excellent test validity. CMIN/DF (2.883) and RMSEA (0.079) indices corroborate the model's goodness-of-fit.

The research reveals a change in Indonesian visitors' decision-making during the outbreak, with a stronger emphasis on personal sentiments than subjective norms and PBC. It offers critical insights for Thailand's tourism industry, highlighting the necessity for marketing and regulatory initiatives that align with Indonesian visitors' shifting tastes and safety concerns in the post-pandemic setting.

KEYWORDS: post-covid-19 tourism, Indonesian tourists; travel intentions, Thailand tourism, theory of planned behavior

INTRODUCTION

The COVID-19 pandemic has profoundly impacted the global tourism industry, a theme that has garnered extensive attention in recent academic research. Studies by Gössling et al. (2020) and Hall et al. (2021) highlight the sector's vulnerability to global crises, advocating for resilient and sustainable tourism strategies. These works emphasize the significant impacts of travel restrictions and border closures on tourism, suggesting coordinated governmental actions to facilitate industry recovery.

Significantly, international tourism, which witnessed substantial growth over the past quarter-century, experienced a dramatic decline due to the pandemic. The number of foreign visitors increased from approximately 532.953 million in 1995 to 1.461 billion by 2020, with Europe, Asia, the Pacific, and the United States being major beneficiaries (UNWTO, 2019a). However, the onset of COVID-19 disrupted this trajectory, leading to extensive economic losses and a decrease in global travel (UNWTO, 2019b).

In Thailand, a prime tourist destination welcoming 38 million international visitors in 2018 and contributing around 18% to its GDP, the pandemic's impact was severe. The suspension of international flights and border closures in 2020 led to an 83% decline in tourist arrivals (UNWTO, 2020b). This downturn reflects the broader trend of diminished travel intentions worldwide, with many travelers delaying or canceling their plans. As Richards and Wilson (2020) reported, over 89,000 global infections and 3,000 fatalities significantly heightened travel apprehensions, shifting travel risks towards health-related concerns (Chang, 2009; Fuchs & Reichel, 2006).

The Theory of Planned Behavior (TPB) has been instrumental in studying tourist intentions and behaviors. While scholars like Croy et al. (2010) and Probstl-Haider & Haider (2013) have extensively utilized TPB, others, such as Juschten et al. (2019) and Yuzhanin & Fisher (2016), advocate for its enhancement by incorporating additional factors relevant to pandemic-affected travel decisions.

Focusing on Indonesia, a growing trend towards visiting Thailand is evident. Nurmayanti (2019) and the World Travel & Tourism Council (2017) noted that Indonesians, with an improving economy and higher living standards, frequently choose Thailand for holidays. Despite the pandemic, Indonesian tourists continued to contribute significantly to Thailand's tourism sector, albeit with many travel plans being canceled or postponed (Rachmawati & Shishido, 2020).

This research aims to explore the demographics and visit intentions of Indonesian tourists traveling to Thailand post-COVID-19. The objectives are to identify the demographic characteristics of these tourists and investigate the pandemic's influence on their travel intentions, thereby providing insights for Thailand's tourism sector to attract more Indonesian visitors in the post-pandemic era (Gandasari & Dwidienawati, 2020; Soehardi & Untari, 2020).

The significance of this study is twofold: it contributes to the understanding of tourism recovery in the post-pandemic context, focusing on Indonesian tourists' travel behavior to Thailand, and it supports policymakers in both countries in developing strategies to revitalize the tourism sector and enhance bilateral cooperation. Additionally, this research enriches the academic literature on tourism recovery and travel behavior in crisis times, offering practical insights for tourism stakeholders in adapting to evolving travel preferences and behaviors (Gajanan, 2020).

RESEARCH OBJECTIVES

The study aims to comprehensively understand the post-COVID-19 travel dynamics of Indonesian tourists visiting Thailand. Its objectives include identifying the demographic characteristics of these tourists, such as age, gender, income, and education level, to gain insights into their profiles. Additionally, the study seeks to investigate the changes in their travel intentions post-pandemic, focusing on how COVID-19 has influenced their decision-making and preferences regarding travel to Thailand. Finally, the research aims to provide strategic recommendations to Thailand's tourism sector, aimed at attracting more Indonesian visitors in the post-pandemic era. These strategies are expected to be based on the observed changes in tourist behaviors and preferences, aiding in the recovery and development of Thailand's tourism industry.

LITERATURE REVIEW

This literature review delves into the Theory of Planned Behavior (TPB) and its application in understanding travel behaviors, particularly under the influence of the COVID-19 pandemic. Originating from the Theory of Reasoned Action (TRA), TPB, as proposed by Ajzen (1991), examines the relationship between an individual's attitudes, intentions, and behaviors. It suggests that attitudes towards a behavior, subjective norms, and perceived behavioral control are key determinants of an individual's behavioral intentions.

TPB's relevance in tourism research is significant, providing insights into various behaviors such as destination choice and engagement in pro-environmental actions. Studies by Wang & Wong (2020) and Huang et al. (2019) exemplify TPB's versatility in addressing both volitional and non-volitional factors influencing behavioral intentions in tourism.

In the context of crises like the COVID-19 pandemic, perceived risk becomes a crucial factor in tourists' decision-making processes, significantly influencing their behavior. Carballo et al. (2017) and Karl & Schmude (2017) have highlighted how disasters and global crises can shift destination images and tourists' risk perceptions, often leading to avoidance behavior.

The COVID-19 pandemic has notably reshaped global tourism, altering tourists' perceptions and travel intentions. Li et al. (2021) and Wirjawan et al. (2021) have discussed this pandemic-induced shift, which is essential in understanding the changing landscape of travel and tourism during and after the crisis.

Applying the TPB framework in this context, researchers like Meng & Cui (2020) and Juschten et al. (2019) have found that attitudes, subjective norms, and perceived behavioral control positively influence travel intentions. These elements are crucial in understanding tourists' decisions and post-pandemic travel behavior.

The behavior of Indonesian tourists during the COVID-19 crisis exemplifies a shift in travel preferences and a decline in tourism activities, reflecting the broader impact of the pandemic on global travel behaviors and preferences (Chuo, 2014; Lee et al., 2012).

The economic and social impacts of the COVID-19 crisis on the tourism industry have been profound, with significant job losses and economic challenges. Arezki & Nguyen (2020) and WTTC (2020) emphasize the importance of understanding post-crisis risk perceptions in influencing future tourist behaviors and aiding the recovery of the tourism sector.

The pandemic has necessitated a conceptual framework to comprehend the altered mindset of tourists towards travel. Here, the TPB framework becomes pivotal, highlighting the roles of attitudes, subjective norms, and perceived behavioral control in shaping travel intentions in the post-COVID-19 era (Joo et al., 2020; Kim et al., 2021).

In the post-pandemic context, tourists' attitudes towards travel are influenced by various factors, including perceived risks, destination reputation, and personal priorities. The role of subjective norms and perceived behavioral control is also significant in shaping travel intentions during this period (Kim et al., 2021; Zhang et al., 2021).

Specifically, this review focuses on the context of Indonesian tourists' travel intentions to Thailand post-COVID-19. It examines how the pandemic has influenced their risk perceptions and travel choices, utilizing the TPB framework to analyze changes in attitudes, subjective norms, and perceived behavioral control. This focus provides unique insights into the impact of the pandemic on Indonesian tourists and their travel decisions to Thailand (Wirjawan et al., 2021; Adhikari et al., 2021).

Table 1: Summary of Literature review

Authors	Findings	Method
Ajzen (1991)	Explores the relationship between attitudes, intentions, and behaviors in the Theory of Planned Behavior (TPB).	Theoretical Framework Development
Wang & Wong (2020)	Demonstrates TPB's application in predicting pro-environmental actions and destination choices in tourism.	Empirical Research
Huang et al. (2019)	Applies TPB to understand tourism behaviors and destination choices.	Empirical Research
Carballo et al. (2017)	Examines the impact of perceived risk on tourists' decision-making post-crisis.	Review of Existing Literature
Karl & Schmude (2017)	Studies how crises like COVID-19 affect destination images and tourists' risk perceptions, leading to avoidance behavior.	Review of Existing Literature
Li et al. (2021)	Investigates the reshaping of global tourism and outbound travel intentions due to COVID-19.	Empirical Study

| Wirjawan et al. (2021) | Focuses on Indonesian tourists' travel intentions to Thailand post-COVID-19. | Empirical Study |

RESEARCH METHODOLOGY

The research methodology is meticulously detailed, underscoring the importance of effective sampling in analyzing visitor behaviors, especially in the context of post-COVID-19 recovery. This chapter discusses various quantitative sampling methods suitable for this study, encompassing both probability techniques (cluster, stratified, systematic, and simple random sampling) and non-probability methods (convenience, purposive, and quota sampling). Although convenience sampling is commonly used in tourism research, it is often criticized for potential biases. In response, this study primarily employs probability sampling methods to enhance representativeness and mitigate biases.

The precision in defining the population and determining the appropriate sample size is highlighted as critical for obtaining reliable research results. The study focuses on Indonesian tourists intending to visit Thailand post-pandemic. The sample size is determined through statistical formulas and a priori power analysis, balancing statistical significance with data manageability.

Data collection, a central component of quantitative research, is executed through surveys targeting the relevant community. The survey encompasses various topics, including demographic details, travel habits, and perspectives on traveling to Thailand post-COVID-19. A randomized sample, including both previous visitors to Thailand and those interested in future travel post-pandemic, is chosen to ensure representativeness.

A preliminary test or pilot study is conducted to evaluate the survey tool's reliability and address potential issues. This involves testing the questionnaire with a small sample and refining it based on feedback. The instrument's reliability is assessed using Cronbach's alpha coefficient, with a set threshold of 0.7 for the questionnaire items.

Additionally, the survey questionnaire, designed to gather data on Indonesian tourists' travel intentions to Thailand post-COVID-19, undergoes a pre-test. This crucial step verifies the questionnaire's reliability and validity, refining it based on feedback from volunteer participants.

The methodology follows the approach of Anderson and Gerbing (1988), using Confirmatory Factor Analysis (CFA) to validate the measurement model's reliability and validity. This method is supported by Bentler (1983), Browne (1984), and Jöreskog (1978). Subsequently, Structural Equation Modeling (SEM) is employed to test hypotheses and assess the model's adequacy, leveraging its capability in interpreting latent variable interactions.

AMOS 22 software is utilized for CFA to evaluate the measurement model, focusing on convergent and discriminant validity. Convergent validity is established by meeting three criteria: factor loadings ranging from 0.755 to 0.946, composite reliability (CR) values from 0.901 to 0.958, and average variance extracted (AVE) values from 0.735 to 0.850. Discriminant validity is confirmed, with AVE values exceeding the Maximum Shared Variance (MSV) and the square of the correlation coefficients across constructs. CFA also validates the structural model's reliability and suitability for hypothesis testing. Goodness-of-Fit Indices, including Chi-Square (CMIN/DF) at 2.883 and RMSEA within the acceptable range of less than 0.08, along with Incremental Fit Indices (GFI, TLI, CFI, NFI, IFI, RFI) all above the 0.80 threshold (Kline, 1998; MacCallum et al., 1996), indicate a high model fit.

Finally, a reliability analysis is conducted to assess the survey questionnaire's consistency and stability. This is achieved through the Cronbach's alpha coefficient, a measure of internal consistency, with higher values indicating greater reliability. This step aims to enhance data quality and bolster confidence in the study's findings.

Table 2. Summary of research methodologies

Component	Details
Sampling Methods	Probability techniques: Cluster, Stratified, Systematic, Simple Random Sampling. Non-probability methods: Convenience, Purposive, Quota Sampling.

Component	Details
Sampling Choice	Probability sampling methods preferred to mitigate biases and improve representativeness.
Population & Sample Size	Focus: Indonesian tourists planning travel to Thailand post-COVID-19. Sample size determined using statistical formulas and a priori power analysis.
Data Collection Method	Surveys targeting demographic characteristics, travel habits, and views on post-COVID travel to Thailand.
Sample Composition	Randomized sample comprising past visitors to Thailand and those interested in future travel post-pandemic.
Preliminary Test	Pilot study to evaluate and refine the survey questionnaire. Reliability assessed using Cronbach's alpha coefficient (threshold: 0.7).
Survey Pre-test	Questionnaire pre-tested with a group of volunteer participants to ensure reliability and validity.
Statistical Analysis Tools	Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) using AMOS 22 software.
Validity Measures	Convergent and Discriminant Validity: - Factor loadings (0.755 to 0.946) - Composite Reliability (CR) (0.901 to 0.958) - Average Variance Extracted (AVE) (0.735 to 0.850)
Model Fit Indices	Goodness-of-Fit Indices: - Chi-Square (CMIN/DF) at 2.883 - RMSEA < 0.08 - Incremental Fit Indices (GFI, TLI, CFI, NFI, IFI, RFI) > 0.80
Reliability Analysis	Cronbach's alpha coefficient used to assess internal consistency and stability of the questionnaire.

RESULT

The poll shows significant demographic imbalances, such as a female majority (73.5%) and a youthful tilt, with more than 70% aged 20-29, reflecting a bias or particular appeal of the survey's travel-related information to these groups. The group is particularly well-educated, with the majority holding bachelor's degrees, which may impact their travel selections and preferences. Working professionals make up the largest occupational group (44.41%), meaning that the survey's travel habits and objectives may reflect employment realities. Furthermore, travel expenditure patterns exhibit a bimodal distribution toward higher spending, hinting that the results may not represent the travel habits of a wider, maybe less financially flexible population.

Table 3. Respondents' profle (n=385) *Source: Primary data*

Demographic Variable	Sub-variable	Frequency	Percent
Gender	Male	81	21.0
	Prefer not to say	21	5.45
	Female	***283***	***73.50***
Age	***20-29***	***270***	***70.12***
	30-39 year	108	28.05
	40-49 year	4	1.03
	50-59 year	3	.77
	More than 60 year	0	0
Education	High school	5	1.29
	Bachelor Degrees	***317***	***82.33***
	Master Degrees	52	13.5

Demographic Variable	Sub-variable	Frequency	Percent
	Doctoral Degrees	7	1.81
	Other	4	1.03
Occupation	Student	66	17.14
	Entrepreneur	37	9.6
	Employee	*171*	*44.41*
	Retired	21	5.45
	Other	90	23.37
Travel Expenses	<2million IDR	7	1.81
	2-4million IDR	23	5.97
	4-6million IDR	26	6.75
	6-8million IDR	*168*	*43.63*
	More than 8 million IDR	161	41.81

Table 4. Results of confrmatory factor analysis *Source: Primary data*

α	Items	Factor loading	AVE	MSV	CR	Cronbach
Attitude	AT1	0.913	0.811	0.191	0.944	0.944
	AT2	0.894				
	AT3	0.905				
	AT4	0.888				
Perceived Behavioral Control (PBC)	PBC1	0.888	0.752	0.097	0.901	0.901
	PBC2	0.891				
	PBC3	0.894				
	PBC4	0.888				
	PBC5	0.891				
Post-Pandemic Outbound Travel Intention (PTI)	PTI1	0.853	0.735	0.193	0.917	0.923
	PTI2	0.829				
	PTI3	0.852				
	PTI4	0.809				
	PTI5	0.853				
Subjective Norm	SN1	0.853	0.735	0.193	0.917	0.923
	SN2	0.829				
	SN3	0.852				
	SN4	0.809				
	SN5	0.853				

The study's findings indicate a strong assessment of visitors' attitudes towards visiting Thailand post-pandemic, as evidenced by the high factor loadings for the Attitude (AT) construct, all surpassing 0.88. This suggests that the questions effectively capture the essence of the construct being measured. The Attitude construct's Average Variance Extracted (AVE) is notably high at 0.811, signifying that a significant portion of the construct's variance is captured by the related questions. The low Maximum Shared Variance (MSV) at 0.191 further demonstrates the distinctiveness of the Attitude construct from other constructs in the study. The construct's reliability is affirmed by both Composite Reliability (CR) and Cronbach's Alpha scores at 0.944, significantly exceeding the threshold for acceptable reliability and indicating robust internal consistency.

The Perceived Behavioral Control (PBC) construct also exhibits strong factor loadings, ranging from 0.888 to 0.894. These high values indicate the effectiveness of the metrics in evaluating the degree of control visitors perceive over their travel post-pandemic. The AVE for PBC stands at 0.752, reflecting that the questions are well-correlated and capture a substantial portion of the construct's variance, indicative of strong convergent validity. The MSV of 0.097, being considerably lower than the AVE, signifies that PBC is distinctly separate from other constructs in the study. The consistency of the PBC measures is supported by CR and Cronbach's Alpha values of 0.901.

Subjective Norm (SN), representing the influence of societal pressure on tourists' travel intentions, also displayed favorable factor loadings, ranging from 0.809 to 0.922. This suggests a credible assessment of perceived social influences on visitors' travel decisions. The AVE for SN is 0.735, and its MSV of 0.193, confirms the construct's convergent and discriminant validity. The high CR of 0.917 and a Cronbach's Alpha of 0.923 further validate the reliability of the Subjective Norm construct.

Lastly, the Post-epidemic Outbound Travel Intention (PTI) construct indicators showed factor loadings above 0.80, indicating a reliable assessment of travelers' intentions to visit Thailand after the pandemic. The AVE of 0.735 and an MSV of 0.193 for PTI affirm both convergent and discriminant validity of the construct. The high reliability of PTI is evidenced by its CR of 0.917 and Cronbach's Alpha of 0.923, confirming consistent assessment across the travel intention indicators.

Table 5. Discriminant validity *Source: Primary Data*

AT	AT	SN	PBC	PTI
AT	0.900			
SN	0.158	0.847		
PBC	0.257	0.113	0.856	
PTI	0.426	0.255	0.312	0.846

The analysis of the Attitude (AT) construct, pertaining to visitors' attitudes towards visiting Thailand post-pandemic, reveals high factor loadings for each question, all exceeding 0.88. This indicates a successful assessment of the construct. The Average Variance Extracted (AVE) for Attitude is notably high at 0.811, signifying that the questions effectively capture a substantial proportion of the construct's variance. Additionally, the low Maximum Shared Variance (MSV) at 0.191 affirms that the Attitude construct is distinct from other constructs in the study. The Composite Reliability (CR) and Cronbach's Alpha scores, both at 0.944, significantly exceed the accepted threshold for reliability, demonstrating strong internal consistency within the Attitude construct.

Similarly, the Perceived Behavioral Control (PBC) construct displays high factor loadings, ranging from 0.888 to 0.894, suggesting accurate measurement of visitors' perceived control over their travel post-pandemic. The AVE for PBC stands at 0.752, indicating a strong correlation among the questions and a significant capture of the construct's variance, evidencing excellent convergent validity. The notably lower MSV of 0.097 compared to the AVE underscores the distinct nature of the PBC construct from other study components. The consistency of the PBC measures is further substantiated by CR and Cronbach's Alpha values, both at 0.901.

The Subjective Norm (SN) construct, representing societal pressure's impact on tourists' travel intentions, also exhibits robust factor loadings, ranging from 0.809 to 0.922. This demonstrates a reliable assessment of the perceived social influences on visitors' travel decisions. The AVE for SN is 0.735, and

its lower MSV of 0.193 confirms the construct's convergent and discriminant validity. The high CR and Cronbach's Alpha values of 0.917 and 0.923, respectively, affirm the reliability of the Subjective Norm construct.

Lastly, the factor loadings for the Post-epidemic Outbound Travel Intention (PTI) construct's indicators are above 0.80, indicating a reliable measurement of travelers' intentions to visit Thailand post-pandemic. The AVE of 0.735 and MSV of 0.193 for PTI affirm the construct's convergent and discriminant validity. PTI's high reliability is evidenced by its CR of 0.917 and Cronbach's Alpha of 0.923, denoting consistent assessment across the travel intention indicators.

Table 6. SEM ft indices *Source: Primary data*

Fit Indices	Threshold values	Observed values
Absolute ft indices		
CMIN/DF	<3	2.883
RMSEA	<0.05,<0.08	0.079
Incremental ft indices		
CFI	>0.90	0.939
TLI	>0.90	0.928
GFI	>0.90	0.901
NFI	>0.90	0.911
IFI	>0.90	0.940
RF	>0.90	0.900

The goodness-of-fit indices for the SEM evaluating post-COVID-19 travel intentions are mostly suggestive of a well-fitting model:

The CMIN/DF ratio, which compares the chi-square value to the degrees of freedom, is 2.883, which is less than the 3 threshold. This indicates that the postulated model is well matched with the observed data, showing a good fit. At 0.079, the Root Mean Square Error of Approximation (RMSEA) is at the upper end of the allowed range. While values less than 0.05 are desired for a 'excellent fit,' values as high as 0.08 are acceptable, suggesting that the model's fit is adequate, but with room for improvement.

The Comparative Fit Index (CFI) is 0.939, and the Tucker-Lewis Index (TLI) is 0.928, both of which are higher than the 0.90 threshold, indicating a strong fit to the data. The Goodness of Fit Index (GFI) and the Normed Fit Index (NFI) both meet and slightly surpass the threshold, confirming the model's adequacy.

The Incremental Fit Index (IFI) of 0.940 and the Rigorous Fit Index (RF) of 0.900 both match the requirements for an acceptable fit, bolstering the overall validity of the model. The IFI is very resilient, indicating that the model well represents the observed data.

Finally, the fit indices indicate that the SEM model is typically well-specified, sufficiently reflecting the complexity of the data. The model offers a good framework for analyzing the elements that impact Indonesian tourists' travel intentions to Thailand in the aftermath of the epidemic. While the RMSEA suggests a little margin for model modification, the other indices all confirm the model's validity and dependability.

Table 7. Summarized hypotheses Source: AMOS Output

Relationship	Std. β	t-value	P-value	Results
AT	0.386	9.521	*	Supported
SN	0.236	5.817	*	Supported
PBC	0.117	3.051	0.002	Supported
PTI	0.473	11.512	*	Supported

The findings provide important insights into the travel intentions of Indonesian visitors expecting to visit Thailand during the COVID-19 outbreak. The hypotheses investigated within the scope of the research produced strong results:

The idea that visitors' inclinations to visit Thailand are considerably influenced by their attitude toward travel (AT) is well validated. A standardized beta coefficient (Std.) of 0.386 indicates a moderate to strong positive link, which is statistically supported by a high t-value of 9.521 and a highly significant p-value (shown by *), which generally represents p 0.001.

Subjective Norm (SN), which represents felt social pressure to travel, had a favorable affect on travel intentions as well, with a standard deviation of 0.236. While less significant than Attitude, this impact is statistically significant, as indicated by a t-value of 5.918 and a similarly significant p-value.

Perceived Behavioral Control (PBC) has a favorable influence on travel intentions, as demonstrated by a standard deviation of 0.117, although it is less prominent when compared to Attitude and Subjective Norm. Nonetheless, a t-value of 3.051 and a p-value of 0.002 corroborate the statistical significance of this link, suggesting a low possibility of the finding being due to chance.

With a standard deviation of 0.473 and an extraordinarily high t-value of 11.512, the Post-Pandemic Outbound Travel Intention (PTI) had the largest positive influence on the outcome variable of all components. The asterisks indicate that the p-value is less than 0.001, confirming the predictor's robustness.

Overall, the research confirms that Attitude, Subjective Norms, Perceived Behavioral Control, and Post-Pandemic Outbound Travel Intention are all significant predictors of Indonesian tourists' travel intents to Thailand in the post-pandemic period. The positive correlations across these categories, as well as their influence on travel intentions, give useful information for Thailand's tourism sector, which is attempting to recruit visitors from Indonesia.
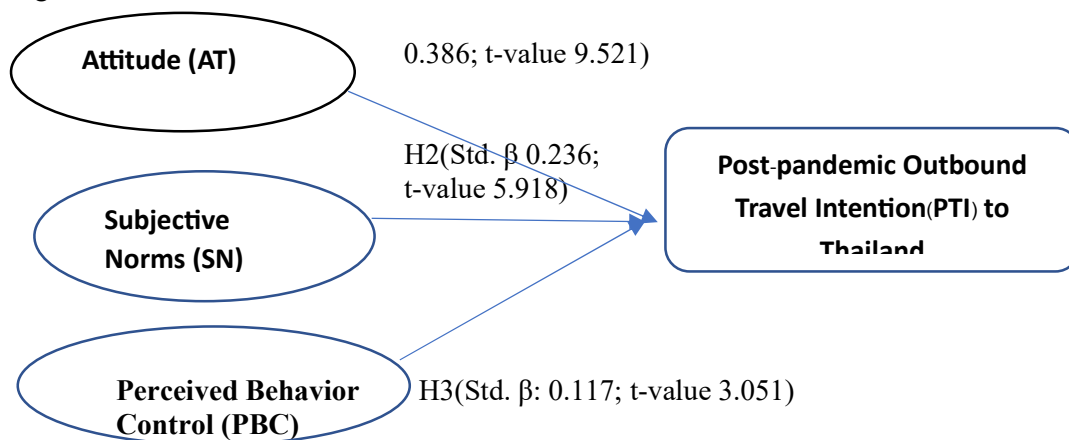

Figure 1: Structural model and hypothesis

The study's hypothesis testing provides noteworthy results on Indonesian tourists' travel behavior toward Thailand in the post-COVID-19 setting. The first hypothesis was confirmed by a standardized beta (Std.) of 0.386 and a statistically significant t-value of 9.521, indicating that Attitude (AT) has a considerable and positive influence on travel intention. This strong association emphasizes the significance of excellent visitor views in encouraging a desire to come.

The second hypothesis looked at the function of Perceived Behavioral Control (PBC), which had a positive influence on travel intentions but was weaker than Attitude, with a standard deviation of 0.117 and a t-value of 3.051. This study supports the idea that visitors' perceptions of the ease or difficulty of traveling influence their desire to visit Thailand post-pandemic.

The third hypothesis looked at the influence of Subjective Norm (SN) and discovered a significant positive connection with travel intentions, as shown by a standard deviation of 0.236 and a t-value of 5.918.

This shows that social factors, such as the views of friends and family, have a substantial impact on people's travel selections.

Overall, the study's SEM reveals a strong match for the observed data, as demonstrated by the fit indices (CMIN/DF, RMSEA, CFI, TLI, GFI, NFI, IFI, RF), demonstrating the model's robustness. These variables explain for more than half of the variation in post-pandemic travel intentions to Thailand, indicating that the model has significant explanatory power. These insights are priceless for Thailand's tourism stakeholders, since knowing these drivers is critical for developing successful post-pandemic recovery measures that will attract prospective visitors.

CONCLUSION

This study's findings are in harmony with the established literature, reinforcing and expanding the utility of the Theory of Planned Behavior (TPB) in understanding travel intentions post-COVID-19. Grounded in Ajzen's (1991) seminal TPB work, which explores the interplay between attitudes, intentions, and behaviors, the study corroborates Ajzen's findings by demonstrating the significant role of Attitude (AT) in shaping the desire to visit Thailand post-COVID-19.

Consistent with the studies by Wang and Wong (2020) and Huang et al. (2019), this research affirms TPB's predictive capability in tourist behavior and choices. By utilizing TPB, the study elucidates post-pandemic travel behaviors, highlighting the influential roles of subjective norms and perceived behavioral control in determining travel intention.

The findings also resonate with Carballo et al. (2017) and Karl & Schmude (2017), who examined perceived risk's impact on tourist decision-making. The SEM analysis in this study, which shows a positive association between Perceived Behavioral Control (PBC) and travel intention, suggests that despite the perceived risks associated with COVID-19, visitors' perception of control plays a vital role in their travel plans.

Furthermore, the study aligns with Li et al. (2021), who explored the shifts in global tourism and travel intentions due to COVID-19. This study extends this theme by illustrating how global events like the pandemic significantly shape travel intentions, as evidenced by the positive path coefficients in the SEM model.

Focusing on Indonesian tourists' travel intentions to Thailand post-COVID-19, this study parallels Wirjawan et al. (2021), affirming the crucial influence of Attitude, Subjective Norms, and Perceived Behavioral Control in shaping travel intentions during the post-pandemic recovery phase. These aligned findings underscore TPB's robustness in this unique context and highlight the importance of understanding these psychological elements for effective tourism recovery strategies.

Post-COVID-19, the implications of this research provide strategic insights for Thailand's tourism sector. The demographic analysis offers a nuanced understanding of Indonesian travelers, emphasizing the significance of factors like age, gender, income, and education in shaping travel habits. This demographic information is vital for crafting marketing strategies tailored to this group's preferences and interests.

The study also underscores the influence of psychological factors such as attitude, perceived behavioral control, and subjective norms on travel intentions. These insights suggest that marketing strategies should consider the social and psychological dimensions of travel choices, in addition to highlighting the appealing features of travel destinations. Effective modification of subjective norms driving travel intentions can be achieved through leveraging influencers and social media to generate word-of-mouth and travel intentions.

The study recommends that tourism management practices should enable visitors to feel in control. This can be achieved by implementing flexible policies, ensuring clear communication of health and safety measures, and providing reliable travel logistics information. Furthermore, the strong post-pandemic demand for outbound travel presents an opportunity to introduce attractive travel packages and campaigns, particularly those emphasizing sustainability and health, catering to travelers' interests.

However, the research has limitations, including a small and demographically limited sample size, raising questions about the generalizability of the findings. The sample's narrow scope may not adequately represent the broader population, suggesting that future studies should target larger and more diverse

groups. Additionally, the study's reliance on cross-sectional data limits its ability to capture the dynamic nature of traveler attitudes and intentions, especially under evolving pandemic conditions. This limitation underscores the potential value of longitudinal studies to understand these dynamics over time. Moreover, the reliance on self-reported data may introduce bias, as responses could reflect societal expectations rather than genuine beliefs or behaviors. Future research could benefit from integrating self-reported data with more objective measures. Furthermore, the study lacks an in-depth exploration of subjective norms and psychological factors influencing travel choices, highlighting the need for future research to delve into these areas using validated scales and qualitative methodologies. Also, the study's focus on travel intentions to Thailand limits its applicability to other contexts, suggesting that expanding the research to different regions and destinations could provide a more comprehensive understanding of travel behavior.

Future research directions could include longitudinal studies to track how traveler attitudes and intentions evolve with the pandemic's progression, offering deeper insights into long-term impacts. Comparative studies using data from past health crises could provide valuable perspectives on travel behavior patterns and differences across pandemics, aiding in the development of more effective crisis management strategies. Cross-cultural research would help uncover regional variations in travel attitudes, facilitating the creation of targeted marketing and safety measures for different markets. Additionally, qualitative research methods such as in-depth interviews and focus groups could better elucidate the emotional and motivational factors driving travel decisions. Destination-specific research could inform marketing efforts by identifying how various destinations are perceived in terms of safety and appeal. Given the significance of vaccination in pandemic recovery, research into its impact on travel behavior, especially attitudes toward vaccine passports, is crucial. Investigating the role and influence of travel technology, environmental concerns, government policies, and psychological factors could provide comprehensive insights into evolving traveler behavior. Finally, in-depth studies on strategies for tourism sector recovery, effective risk communication, traveler segmentation, and long-term resilience are essential for aiding the industry's revival and sustained growth.

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Understanding Tourist's Intention to Use Sustainable Tourism Websites in Thailand: Information System Success Model (ISSM) Approach

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ABSTRACT

This study investigates the factors influencing tourists' intention to use sustainable tourism websites in Thailand by employing the Information System Success Model (ISSM) framework. Recognizing the critical role of sustainable tourism in contemporary travel, the research aims to identify the key determinants that contribute to the success of such online platforms. Drawing on a sample of 464 tourists in Thailand, data is collected to assess the variables encompassing information quality, system quality, and service quality. In the analysis of different clusters of responses and validation of the ISSM within the context of sustainable tourism websites, statistical methods such as t-tests, chi-square analyses, and cross-tabulations were employed in SPSS. The findings contribute to a deeper understanding of the perception of tourists toward sustainable tourism websites, providing valuable insights for both researchers and practitioners in the field. The implications of the research extend to the design and enhancement of sustainable tourism websites, fostering their effectiveness and promoting sustainable practices within the tourism industry in Thailand.

KEYWORDS: Sustainable Tourism, Websites, Information System Success Model (ISSM).

INTRODUCTION

The concept of sustainable tourism, which takes into account social, cultural, and environmental development, has been more widely recognized in recent years. Through sustainability communication, which tries to educate, involve, and inspire stakeholders about a destination's sustainable actions. The official websites of destination management organizations (DMOs) are essential in drawing travelers. Tourism stakeholders need to acknowledge that customers possess knowledge about sustainability in the industry and, as such, provide sufficient channels of communication regarding sustainability. Sustainability is defined as one of tourism's key challenges (Bogren & Sörensson, 2021), and sustainable tourism is considered to be vital for a destination's development (Čuić Tanković & Mušanović, 2022). All parties involved in the tourism industry, who are responsible for communicating with travelers, find considerable value in sustainability information (Bani-Khalid, 2019). If the destinations promote their sustainability initiatives, their brand value will increase, and it can attract more tourists who realize and value sustainable pillars. By doing this, destinations can acquire the trust of significant stakeholders and eventually gain a long-term competitive advantage (Čuić Tanković & Mušanović, 2022). Hence, DMOs must use the destination websites to effectively communicate sustainability (Fernández-Díaz et al., 2021). DMOs employ new tactics to draw in and encourage visitors in the future, particularly when it comes to promoting sustainable local development and off-season travel. They also enhance the destination's image by refining how they present themselves on their official websites (Čuić Tanković & Mušanović, 2022; Fernández-Díaz et al., 2021). The information system success model was proposed by DeLone & McLean in 1992. There are factors of ISSM involved in evaluating the success of an information system, consisting of information quality, system quality, and service quality will be employed to study the intention to use sustainable tourism websites in Thailand. The study of Chen & Tsai, (2019) and Saadilah et al., (2021)

found that information quality, system quality, and service quality have a strong influence on perceived usefulness and perceived ease of use. Thereby increasing the intention of users to continue to adopt sustainable tourism website services. For high-quality websites, users find the output information to be more helpful and are thus willing to use the website more frequently.

With the recent notable increase in awareness of sustainability issues, it is stated that prior studies cannot adequately capture the implications of sustainability communication on the official websites of the DMOs. The subject of this study is the relationship between the Information System Success Model (ISSM) and the intention of Thai tourists to use sustainable tourism websites as a source of information to plan their trips. Hence, the purpose of this paper is to analytically test the influence of ISSM on tourist intention to use sustainable tourism websites. First, the researchers explored in the literature the constructs of sustainable tourism, websites, and ISSM to develop a questionnaire. The collected data is analyzed thoroughly by Thai tourists across four regions present in the results section. This study can contribute to the literature on sustainable marketing by shedding light on the significance of the content found on websites dedicated to sustainable tourism, offering ways to improve DMO websites, and outlining potential avenues for further research.

RESEARCH OBJECTIVES
1.   To study factors affecting tourists' intention to use sustainable tourism websites in Thailand.
2.   To the role of the Information System Success Model (ISSM) in influencing tourists' intention to use sustainable tourism websites in Thailand.

EXPECTED OUTCOMES
1.   The researcher in the tourism-related field can utilize the information from this study as part of a future study about sustainable tourism.
2.   The researcher in the Human-Computer Interaction (HCI) field can apply this research result in their future research related to the character of sustainable tourism websites.
3.   Policymakers can utilize the information from this research to develop a sustainable tourism management plan.
4.   The public and private sectors can launch campaigns and spread awareness to encourage the use of websites for sustainable tourism.
5.   The website creators can use this research result to develop and enhance the user experience by providing relevant and engaging content and ensuring that the website meets the expectations of environmentally conscious tourists.
6.   Travelers get insightful travel destination information on sustainable tourism websites to plan their trips.

LITERATURE REVIEW
1. Sustainable tourism
It is widely known that one of the most important economic sectors in the world's major nations is tourism. The travel and tourism industry has been the best partner for governments in creating jobs for the last five years. Tourism generates 10.4% of the world's GDP and supports 319 million jobs globally. While the tourism industry depends on both the natural environment and public health, it also frequently has a negative impact on both at the same time. As a result, environmental concerns related to the growth of tourism demand particular consideration and have been the subject of numerous significant studies. Sustainable tourism development can be defined as the establishment of new workplaces, including jobs in tourist locations; the preservation of the environment; the mitigation of climate change; the reduction of waste and pollution; and the promotion of environmentally friendly and sustainable consumer habits (Rasoolimanesh et al., 2023). Moreover, the study of Roxas et al., (2020) also supports that travelers stimulate economic activity in places that produce jobs and other sources of income, enhancing the

benefits to the community. In addition to focusing on the Triple Bottom Line (TBL), sustainable tourism has also recognized the importance of stakeholder participation amongst travel agencies, tourism destinations, and local, regional, and national governments to overcome obstacles and maintain competitiveness. Furthermore, the study by Streimikiene et al., (2021) mentioned that companies in the tourism industry invest a significant amount of money in consumer market research because they are interested in the behavior and motivations of their customers. They do this by creating innovations in tourism services that are connected to sustainable consumption practices, drawing in environmentally conscious customers, and educating them by offering green or environmentally friendly tourism services. Thus, the significance of sustainable tourism is presently of the highest importance. Tourists are currently considering sustainable tourism services and are keen to select sustainable tourism service packages that are offered by several tourism organizations. Likewise, an increasing number of destinations responded to tourists' growing demand for more sustainable tourism selections. The consumption habits and decisions made by visitors can have a direct impact on environmental conservation. Reductions in a destination's environmental impact are possible through their understanding of and advocacy for sustainability. To a certain extent, conservation has evolved into a motivator for maintaining a destination's tourism experience (Roxas et al., 2020). Sustainable tourism is a socially constructed and contested concept approached from a wide range of views that is grounded on the conception of stability between social, economic, and environmental issues (Ivars-Baidal et al., 2023).

2. Websites

Travelers can now actively participate in a digital community that shares experiences online by visiting websites with user-generated content (UGC). Users can produce, publish, and share user-generated content (UGC) as well as engage with, share, update, and spread information provided by others (Kitsios et al., 2022). People perform diverse roles in various contexts, and they select the most appropriate platform for self-expression. Therefore, various eWOM platforms will be taken into consideration when tourists have distinct eWOM motivations (Zhou et al., 2020). Social media platform users typically have higher levels of trustworthiness and rely on websites with privacy policies and proper internet protection measures. On the other hand, travelers place greater value on and trust UGC than they do on official websites. Websites operated by destination marketing organizations (DMOs) provide central locations for informing travelers and interacting with destination stakeholders. DMOs are responsible for creating and maintaining efficient communication plans that can be distributed via a variety of media, including social media, TV commercials, printed brochures, postcards, and websites for local and national destinations. DMO websites function as impartial information centers for destinations by connecting prospective visitors with a variety of local information and service suppliers (Nolan, 2020; Park & Stepchenkova, 2023). However, the role of DMO websites as a source of tourist information has changed since the advent of social media platforms, which allow DMOs to accomplish not just information sharing but also dialogic connection building with users, and the increasing popularity of online communications. It is likely that social media sites like Facebook, Instagram, and Twitter, as well as travel information-sharing apps like TripAdvisor, will always draw users. Therefore, it makes sense to work toward improving communications between DMO websites and prospective visitors by comprehending the fundamental forces behind these interactions. DMO websites have been analyzed to compare their performance from several perspectives, such as the importance of visual pictures, diverse verbal expressions, information quality, and structural and graphic design (Park & Stepchenkova, 2023).

Furthermore, trust in a user-generated content website influences tourists' decisions to follow advice from others. Information is not as reputable as user-generated content (UGC), according to a study on tourism (Kitsios et al., 2022). However, the study of Pasi & Viviani (2020) presented that UGC provides false, unproven, inappropriate information that may contain racist, sexist, and scientifically inaccurate content. This can lead to potentially very unsafe consequences for individuals with low literacy and the community. The term "smart tourism" describes the application of information and communication technology (ICT) that offers real-time assistance to all parties involved in the travel destination. Smart tourism technology (STT) is being used by several tourist destinations to boost their competitiveness and enhance their reputation (Pai et al., 2021). Smart tourism describes specific applications that improve

visitor experiences and add value for users. To be more precise, smart tourism technologies are certain instruments, goods, and services that will typically provide greater value by fostering increased connectivity, interactivity, personalization, and co-creation, as well as improving travel experiences overall (Azis et al., 2020). Additionally, tourism managers can regularly submit dependable and up-to-date information about travel-related goods and services, destination information, and promotional messaging. For decision-makers in the tourism sector, UGC analysis and other unstructured data analysis can show how value is created (Kitsios et al., 2022). The use of these technologies in a smart tourism setting will be crucial to giving travelers and service providers accurate information, improved decision guidance, increased mobility, and excellent travel experiences (Azis et al., 2020). Overall positive travel experiences lead to the willingness to return to the same setting or location and suggest it to others is referred to as revisit intention (Pai et al., 2021).

3. Information System Success Model (ISSM)

The IS Success Model (information quality, system quality, service quality) was developed by DeLone and McLean (1992) to measure the success of information systems (Çelik & Ayaz, 2022). Information quality comprises the timeliness, relevance, accuracy, and usefulness of sustainable tourism websites. The outputs of information are typically evaluated and assessed based on their precision, reliability, utility, and availability. Most people agree that having high-quality information is essential to its usability and satisfaction among users (Çelik & Ayaz, 2022; Pratama et al., 2021). The term "system quality" refers to the desired attributes of a sustainable tourism website, including adaptability, dependability, simplicity of use, and ease of learning. It focuses on the website's performance features and usability aspects, including responsiveness, accessibility, ease of learning, and reliability (Çelik & Ayaz, 2022). Further, it has a noteworthy effect on intention across user satisfaction, but the tourist does not only see the system quality as one of the most significant things but also other variables in affecting their satisfaction and intention to visit (Çelik & Ayaz, 2022; Martono et al., 2020; Pratama et al., 2021). Service quality describes the infrastructure, technical assistance, responsiveness, assurance, and friendliness that websites that promote sustainable tourism offer to their users. The users' preferences for additional services should be discovered through interviews with them, to enhance the quality of the services provided. Moreover, improving the system's speed and effectiveness will encourage tourists to continue visiting websites that promote sustainable travel (Çelik & Ayaz, 2022; Martono et al., 2020). This is supported by the study of Huang et al., (2015) found that the three ISSM factors (information quality, system quality, service quality) have a significant influence on the intention to continue using sustainable tourism websites. Interestingly, the study of Martono et al., (2020) found it has not been entirely established that the ISSM factor significantly affects users' intentions to use websites for sustainable tourism. The intention to visit websites for sustainable tourism can only be predicted by the quality of the information and the system. Contrary to Huang et al., (2015) findings, service quality has not been shown to significantly affect users' intentions to use websites for sustainable tourism.

RESEARCH METHODOLOGY

1. Population and sample

Thailand, a country that faces demand for tourism and needs to pay close attention to the sustainable development of the tourism-related sector, depends heavily on the tourist industry to drive economic growth and national wealth. Thus, the purpose of this study is to gather information about Thai citizens between the ages of 20 and 60 who intend to use websites dedicated to sustainable tourism both before and during their travels. Additionally, this demographic is selected to guarantee that they possess the ability to use electronic devices to look up travel-related information on the Internet.

2. Questionnaire design

The researcher conducted a thorough literature analysis on websites related to sustainable tourism before developing the research tool. The questionnaire items were written in English by the researcher, who then translated them into Thai, making adjustments for words used in a Thai context. Experts were given the questionnaire to assess its features and content, categorize the questions, and check that the language and wording were appropriate. The expert's review resulted in the modification, addition,

and deletion of several questions and a revised 7-point Likert scale ranging from 1 to 7 (1= strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neutral, 5 = somewhat agree, 6 = agree, and 7 = strongly agree) (Dukes, 2014) and six demographic questions. Next, this research completed the pilot test with 30 people who have experience in using the internet to search for travel information online. After that, this research used the pilot test to adjust confusing words and fix wording mistakes. The final version of the questionnaire includes 18 questions; six demographic questions to screen out the non-representative sample and 12 Likert items classified into 4 constructs with 3 question items as shown in Table 1.

Table 1 Research constructs and measurement items

Construct	Code	Measurement items	References
Demographic	DM1	Gender	(Robinson & Leonard, 2018; Wachyuni & Kusumaningrum, 2020)
	DM2	Age	
	DM3	Education level	
	DM4	Occupation	
	DM5	Monthly income	
	DM6	Geographical region	
Information quality	IQ1	The sustainable tourism website provides comprehensive knowledge.	(Aldholay et al., 2018; Alzahrani et al., 2019)
	IQ2	The sustainable tourism website provides organized knowledge.	
	IQ3	The sustainable tourism website provides a complete set of information.	
System quality	SYQ1	The interaction with the sustainable tourism website is clear and understandable.	(Aldholay et al., 2018; Alzahrani et al., 2019; Jung et al., 2015)
	SYQ2	The sustainable tourism website is convenient to see.	
	SYQ3	The sustainable tourism website allows information to be readily accessible.	
Service quality	SEQ1	The sustainable tourism website has visually appealing materials.	(Alzahrani et al., 2019; Chung et al., 2015)
	SEQ2	The sustainable tourism website user interface has a well-organized appearance.	
	SEQ3	The sustainable tourism website gives me prompt service.	
Intention	INT1	I intend to plan a trip using the sustainable tourism website shortly.	(Ajzen, 1991; Ashraf et al., 2020; Meng & Choi, 2016; Wang et al., 2018)
	INT2	I intend to make an effort to travel through sustainable tourism in the near future.	
	INT3	I intend to use a sustainable tourism website for tourism-related purposes in the near future.	

Data will be gathered for this study anonymously from 464 participants using online questionnaires that the researcher disseminated around Thailand. Since this channel is appropriate for the context of technology adoption, the online surveys will be generated using Google Forms and distributed over an online panel. Additionally, this route aids in the timely collection of sufficient data by researchers. Because electronic devices can be used instead of paper questionnaires, online data gathering can help

researchers save money and prevent overspending on data collecting (Jansen et al., 2006). The people who explore the Internet for travel-related information using electronic devices such as laptops, tablets, and smartphones are the target demographic for this study.

3. Data analysis

To explore the association between two categorical responses in the dataset, a cross-tabulation analysis will be conducted using Statistical Package for the Social Sciences (SPSS) version 28. Cross-tabulation is a statistical technique that allows researchers to examine the relationship between two categorical variables by displaying the frequency distribution of the data in a table format. Further, Chi-square analysis is a statistical method used to determine whether there is a significant association between two categorical variables. In SPSS, this analysis is typically conducted through the cross-tabulation procedure, and the chi-square test assesses the independence of the two categorical variables. Additionally, the analytical methods include percentage, frequency, mean, standard deviation, and t-test.

RESULTS

Preliminary analysis

Table 2 presents the distribution of 464 respondents' data obtained via an online questionnaire into the following categories. Regarding gender, 63.8% of people are female and 36.2% are male. The largest age group, comprising 75.4 % of the population, was the 20–29 age range, while the lowest group, comprising 0.6% of the population, was the over 59 age group. With a percentage of 64%, the bachelor's degree represents the largest educational component. Thai visitors primarily made less than 20,000 baht a month. Regarding geographic location, 35% of the respondents were from central Thailand, with the remaining regions being the northeast (28%), northern (21%), and southern (16%), in that order. Furthermore, it was found that respondents between the ages of 20 and 29 are the most technologically and digitally knowledgeable generation, able to smoothly integrate technology into their daily lives. This is in line with the age range of users who embrace technology. The demographics of the respondents so fairly represent Thai society.

Table 2 Demographic

Demographic characteristics		Frequency	%
Gender	Male	168	36.2
	Female	296	63.8
Age	20-29 years old	350	75.4
	30-39 years old	62	13.4
	40-49 years old	32	6.9
	50-59 years old	17	3.7
	Older than 59 years old	3	0.6
Education level	Secondary school or lower	41	8.8
	Diploma	19	4.1
	Bachelor's degree	297	64.0
	Master's degree	71	15.3
	Doctoral degree	36	7.8
Occupation	Student	257	55.4
	Civil servants/ Government employees/ State enterprise employees	67	14.4
	Private enterprise employees	84	18.1
	Business owner	56	12.1
Monthly income	Under 20,000 THB	259	55.8
	20,001 - 30,000 THB	81	17.5
	30,001 - 40,000 THB	52	11.2

	40,001 - 50,000 THB	27	5.8
	Over 50,001 THB	45	9.7
Geographical region	Northern	98	21.1
	Central	161	34.7
	Northeastern	129	27.8
	Southern	76	16.4

Table 3 Mean and standard deviation of factors

		Information quality	System quality	Service quality	Intention
N	Valid	464	464	464	464
	Missing	0	0	0	0
Mean		5.1487	5.2744	5.1875	5.3154
Std. Deviation		1.40968	1.42634	1.43612	1.45517

Table 3 illustrated, the intention has the highest mean of 5.3154 (S.D. = 1.45517) followed by system quality has an average of 5.2744 (S.D.= 1.42634), service quality has an average mean of 5.1875 (S.D. = 1.43612), and information quality has the average mean of 5.1487 (S.D. = 1.40968).

Table 4 Independent sample t-test

Variables		N	Mean	SD
Information quality	Male	168	5.097	1.385
	Female	296	5.178	1.425
System quality	Male	168	5.123	1.372
	Female	296	5.360	1.451
Service quality	Male	168	5.123	1.372
	Female	296	5.360	1.451
Intention	Male	168	5.260	1.413
	Female	296	5.347	1.480

As illustrated in Table 3, this study found male users had a statistically significantly lower interest in the information quality of sustainable tourism websites (5.10 ± 1.39) compared to female users (5.18 ± 1.43). Moreover, male users had statistically significantly lower concerns about the system quality of sustainable tourism websites (5.12 ± 1.37) compared to female users (5.36 ± 1.45). Further, female users had statistically significantly higher awareness of the service quality of sustainable tourism websites (5.36 ± 1.45) compared to male users (5.12 ± 1.37). Lastly, female users had a statistically significantly higher concentration in the intention of using sustainable tourism websites (5.35 ± 1.48) compared to male users (5.26 ± 1.41).

Table 5 Chi-Square

Variables		X^2	Sig.
Information quality	Gender	18.137	0.447
	Age	84.618	0.147
	Education level	73.670	0.423
	Occupation	52.694	0.525
	Monthly income	72.230	0.470
	Geographical region	77.963	**0.018***
System quality	Gender	21.377	0.261
	Age	67.275	0.636

	Education level	70.251	0.536
	Occupation	78.955	**0.015***
	Monthly income	52.926	0.955
	Geographical region	56.060	0.398
Service quality	Gender	11.089	0.891
	Age	74.899	0.384
	Education level	73.538	0.428
	Occupation	45.187	0.798
	Monthly income	60.138	0.839
	Geographical region	57.923	0.333
Intention	Gender	23.434	0.213
	Age	52.734	0.957
	Education level	74.306	0.403
	Occupation	58.319	0.320
	Monthly income	89.330	**0.081***
	Geographical region	61.226	0.233

*Significance level < 0.05.

Table 4 presents the overall demographics data consisting of age, education level, occupation, income, and geographic region. The result showed that the users who live in different geographical regions have different opinions toward information quality. Further, the different occupation was significantly related to system quality. Also, income was significantly related to the intention to use sustainable tourism websites of Thai tourists at the level of 0.05, which the details are as follows:

Table 6 Cross tabulation (Information quality * Geographical region)

		Region in Thailand				
		Northern	**Central**	**Northeastern**	**Southern**	**Total**
Information quality	**Strongly disagree**	3	8	5	1	17
	Disagree	5	7	2	0	14
	Somewhat disagree	4	6	2	7	19
	Neutral	17	39	28	11	95
	Somewhat agree	16	15	13	16	60
	Agree	28	52	45	22	147
	Strongly agree	25	34	34	19	112
	Total	98	161	129	76	464

Table 5 exemplifies the Chi-Square test statistic value of information quality and geographical region is 77.963 and the Significance value = 0.018 which is > 0.1, therefore H0 is accepted. The result can be described that most of the tourists from several regions of Thailand agree that the sustainable tourism websites provide a comprehensive, organized, and complete set of information accounting for 147 people.

Table 7 Cross tabulation (System quality * Occupation)

		Occupation				
		Student	Civil servants/ government employees/ State enterprise employees	Private enterprise employees	Business owner	Total
System quality	Strongly disagree	14	0	1	1	16
	Disagree	10	4	1	2	17
	Somewhat disagree	7	5	1	2	15
	Neutral	39	11	20	5	75
	Somewhat agree	42	11	19	7	79
	Agree	71	19	29	14	133
	Strongly agree	74	17	13	25	129
	Total	257	67	84	56	464

Table 6 shows the Chi-Square test statistic value of system quality and occupation is 78.955 and the significance value = 0.015 which is > 0.1, therefore H0 is accepted. The result indicated that tourists from various occupations agree that sustainable tourism website systems are clear, understandable, convenient, and accessible accounting for 133 people.

Table 8 Cross tabulation (Intention * Income)

		Monthly income					
		Under 20,000 THB	20,001 - 30,000 THB	30,001 - 40,000 THB	40,001 - 50,000 THB	Over 50,001 THB	Total
Intention	Strongly disagree	10	0	0	2	1	13
	Disagree	10	6	2	1	1	20
	Somewhat disagree	11	6	1	4	0	22
	Neutral	43	7	11	2	10	73
	Somewhat agree	23	13	11	3	3	53
	Agree	79	29	13	9	13	143
	Strongly agree	83	20	14	6	17	140
	Total	259	81	52	27	45	464

Table 7 presented the Chi-Square test statistic value of system quality and occupation is 89.330 and the significance value = 0.081 which is > 0.1, therefore H0 is accepted. The result showed that the majority of tourists are likely to use sustainable tourism websites to plan their trip in the near future accounting for 143 people.

DISCUSSION AND CONCLUSION
Discussion
Tourism authorities are in charge of tourism and are striving to give visitors greater convenience. In order to organize the trip using mobile devices, tablets, laptops, and computers, travelers can engage in a variety of activities on the website, such as looking for travel-related information (images of the region's

tourist attractions and cultural or historical sites). Websites dedicated to sustainable tourism have emerged as a valuable source of information for travelers, supplementing user-generated content that was compiled from a variety of unreliable and amateurish travel guides. The research found that Thai travelers are aware of and realize the importance of sustainable tourism websites that provide a comprehensive, organized, and complete set of information. As well as the website systems are clear, understandable, convenient, and accessible. Interestingly, the result also shows that tourists are not satisfied with the service quality of the website due to the visual, interface, and the website's unable to give prompt service. This is in line with the study of Huang et al., (2015) that service quality has not been shown significantly impact to the travelers' intention to use sustainable tourism websites. Therefore, the tourism authority should carefully pay attention to website attributes to create a good experience and also help the tourist to make a better decision. Positive travel experiences lead to the willingness to return to the same destination and recommend it to others.

Implications

      1.   The study contributes to the theoretical understanding of tourist behavior in the context of sustainable tourism websites. It extends existing theories, such as the ISSM, by applying them to the specific domain of sustainable tourism.

      2.   The research provides empirical evidence on the applicability of the ISSM in the context of sustainable tourism. This can enhance the ISSM and extend its utility to different domains beyond traditional information systems.

      3.   Findings can inform policymakers in Thailand about the factors influencing tourists' intention to use sustainable tourism websites. This can guide the development of policies promoting sustainable tourism.

      4.   Insights from the study can guide website developers in designing and improving sustainable tourism websites. Understanding what influences user intention can lead to more user-friendly and effective platforms.

      5.   Understanding the factors influencing tourists' intentions can help in enhancing the overall user experience of sustainable tourism websites. This includes improving content, navigation, and interactive features.

Limitations

      To capture changing patterns and dynamics, future research could examine trends and variances over a longer time span. Additionally, this study only looks at the Thai tourist setting; future research might evaluate the similarities and differences in the intention to utilize sustainable tourism websites using bigger random samples or samples from other countries. Lastly, while the current study looks at ISSM as a predictor of intention, it ignores any mediating or moderating effects from outside factors. To create a more complete model of users' goals in the context of sustainable tourism websites, future research should examine other variables, such as cultural, economic, political, or environmental aspects.

Conclusion

      In conclusion, the study on understanding tourists' intention to use sustainable tourism websites in Thailand through the Information System Success Model (ISSM) approach sheds light on crucial factors influencing tourists' decisions to adopt sustainable tourism practices. The findings contribute valuable insights to both academia and the tourism industry. The ISSM framework proves to be a robust tool for assessing the success of sustainable tourism websites, incorporating key dimensions such as information quality, system quality, and service quality. As revealed in the study, these factors play a significant role in shaping tourists' intentions to engage with sustainable tourism websites. The importance of information quality cannot be overstated, as it directly influences tourists' perceptions of the reliability and usefulness of the content provided on these websites. System quality, encompassing factors like website functionality and ease of use, also emerged as a critical determinant, impacting the overall user experience. Service quality, reflecting the responsiveness and efficiency of sustainable tourism websites in meeting users' needs, is identified as a crucial factor influencing tourists' satisfaction and subsequent intention to use. A positive user experience and satisfaction, in turn, significantly contribute to the success of these platforms.

In conclusion, the ISSM approach provides a comprehensive framework for assessing and enhancing the success of sustainable tourism websites. The findings offer actionable insights for policymakers, website developers, and stakeholders in the tourism industry, guiding them toward the effective implementation of sustainable tourism initiatives in Thailand and beyond. As the global community increasingly recognizes the importance of sustainable tourism, this research contributes to the ongoing dialogue on responsible travel and the role of information systems in promoting environmentally conscious and socially responsible tourism practices.

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Appraisal Analysis of the Football Rivalry among Fandom: An Analysis of Online Comments on Facebook

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ABSTRACT

This paper examines the comments on the BBC Sport fan page on Facebook. The semantic discourse resources used by the football commenters are identified with the Appraisal theory. In particular, this study aims at the football rivalry, focusing on Manchester United and Liverpool. To understand the mechanism of the rivalry between these two teams, the theoretical dimensions of rivalry are utilized to classify the factors behind which the commenters construct their online opinions toward these two teams. The findings reveal that the commenters construct comments through the Conflict and Bias dimension. For the Conflict dimension, three subcategories of Conflict were found: Parity (history), Parity (recent), and Star factors.

Meanwhile, the Bias dimension expressed through the comments regroups Cultural differences and Unfairness. The findings of this study indicate that there are no comments segmented into Peer dimensions. The reasons to explain this absence are that the commenters tend to concentrate on the competition between two teams, mentioning the glory of the favorite team in the past or present days via positive judgmental resources of normality and capacity and that they choose to undermine the rival team through negative judgmental resources of normality. Besides, negative nicknames are coined for the rival team to associate negative morality with them, perceived as invoking negative propriety resources.

KEYWORDS: Appraisal theory, Rivalry in football, Manchester United, Liverpool

INTRODUCTION

Nowadays, the advent of social media can influence its users' behavior in producing their discourse (Akhter et al., 2022; Yin & Zubiaga, 2022). This phenomenon stimulates many scholars to explore language used on online platforms. However, most researchers investigate the negative facet of online discourse (Aslan, 2017; Özarslan, 2014; Castano-Pulgarin et al., 2021; Sori & Vehovar, 2022). In addition, some researchers aim to examine the characteristics of discriminatory discourse (Assimakopoulos et al., 2019), whereas others provide their analysis of the strategies to produce such discourse (Chen & Flowerdew, 2019). Unfortunately, these studies uniquely provide a broad insight into negativity regarding online discourse.

Although football constitutes an extensive area to explore, many studies prioritize their attention to discrimination in online discourse (Cleland,2013; Lopez-Gonzalez & Guerrero-SolÉ, 2014; Olagunju, 2019; Seijbel et al., 2022; Wilson, 2022) despite its inherent excitement and its entertaining atmosphere (Galily et al., 2023), which propose diverse perspectives to investigate. Rivalry becomes an essential phenomenon in football as it influences the supporters in their supportive role to act for their beloved team and against their rival team (Chiweshe, 2016). Furthermore, interpersonal communication is vital in online settings (Eginli & Özmelek, 2018). Therefore, it is necessary to examine this feature in which the stance, or position taken, is deemed essential for football commenters when they voice their views (Barton & Lee, 2013).

Apart from massive concentration on negative language, previous studies in this field lack analysis of the attitude and stance of the football commenters and the mechanism behind which they

construct their football discourse. Regarding rivalry, it is a particular incident (Benkwitz & Molnár, 2012) as it can happen on and off the stadium and bring loathing to two sides' supporters (Chiweshe, 2016). However, this notion could elicit negative and positive outcomes among supporters (Barendt & Uhrich, 2016). Although rivalry is recognized as a pervasive force, it remains understudied (Kilduff et al., 2016). Consequently, there should be more investigation on this matter, expanding the body of knowledge in the football discourse surrounding rivalry in the online space.

This study aims to analyze discourse semantic resources used by football commenters in the environment of rivalry between Manchester United and Liverpool in the news related to these two teams using the APPRAISAL theory (Martin & White, 2005), providing a systemic instrument to assess linguistic resources used in interpersonal communication (Fuoli, 2018; Ross & Caldwell, 2019). The expressions are collected on the BBC Sport fan page on Facebook, focusing on the 2019-2020 season. The Appraisal framework allows the researchers to identify and analyze the evaluative resources used by the speakers or writers when they articulate their emotions, judgment, and valuations. In addition, the researchers can use this framework to perceive the stance taken for or against the external voice and standpoint of others. Also, this tool can identify linguistic resources which enhance or diminish the assessment of the speakers or writers. Accordingly, this analytical instrument makes examining how commenters evaluate their counterparts more feasible. In addition, this research places importance on the perspective of rivalry. Hence, it employs the dimensions of rivalry (Tyler & Cobbs, 2015) to classify the comments and grasp the basis of rivalry among commenters. These dimensions are divided into three dimensions: Conflict (competition involving the counterparts of two teams), Peer (similarity of the team and the rival counterpart), and Bias (feeling connected to the team leading to bias).

The contribution of this work is to provide some new insight into the semantic resources used in the context of rivalry between Manchester United and Liverpool to comprehend the attitude, stance, and the intensity of the expressions adjusted by the commenters when they direct their comments toward Manchester United and Liverpool, which can further the body of knowledge in football discourse and serve as a referential point for future studies in this field. Besides, the classification of the dimensions of rivalry in this study provides a better understanding of the mechanism for producing their football discourse in this context.

This study encompasses four sections. The literature review section explores the notion of rivalry and its dimensions and the APPRAISAL framework. After that, the methodological approach for this study is described. Then, the findings of this study are illustrated. Finally, the discussion and conclusion are outlined.

LITERATURE REVIEWS

The concept of rivalry is differently defined by many scholars (Milstein et al., 2022; Reams & Eddy, 2017). However, it is also found that this concept shares some essential characteristics. This subsection below provides an overarching definition to better comprehend this phenomenon.

Notion of rivalry

Rivalry relates to various stakeholders in football. It deals with conflictual relations at the level of team, players, coach, and supporters (Harvard et al., 2013). For the latter, they can adopt their passion into their private life (Chiweshe, 2016). Furthermore, Tyler and Cobbs (2015) regroup the potential factors of rivalry to gain a better understanding of this concept in the views of the supporters. This notion is distinctively described in this sub-section below.

Dimension of rivalry

According to Tyler and Cobbs (2015), the dimensions of rivalry are categorized into three dimensions: Conflict, competition involving two teams, players, and supporters; Peer, similarities shared between two teams; Bias, feeling connected to the team leading to bias (Mastromartino et al., 2018). Each dimension is further divided into sub-dimensions. Conflict incorporates defining moment, the origin of the distinction between two teams; frequency of competition, frequency of competition between two teams; parity (historical), performance of two teams in the past; parity (recent), achievement of the team in the present day; star factor, notable individuals illustrating distinctiveness of the teams. Peer includes

geography, the proximity of the location of the teams as the physical proximity of two teams can increase the perception of threat; competition for personnel, the competition for targeted assets (e.g., recruitment for players and coach) against the different team; cultural similarity, shared culture (s) between two teams. Bias regroups cultural differences, disparities in people's nationalities, social class, religious or moral convictions, the relative dominance of one team, feeling inferior to a stronger team, unfairness, and a sense of unfair treatment undergone by the beloved team in the competition.

Language of rivalry

Previous studies resort to the APPRAISAL framework approach from the perspective of rivalry through a political lens. To create a negative image of a political opponent, the press could utilize harmful affectual resources (Jin, 2019). In addition, negative affectual resources in presses could be used to express the discontent toward politicians (Arunsirot, 2012). The association of negative resources of propriety to the targeted participants' names to coin new negative nicknames can be applied to lead the readers to reflect on their unethical acts (Ross & Caldwell, 2019). Also, using strong language is one of the strategies to articulate disapproval during the argument (Aloy Mayo & Taboada, 2017).

Nevertheless, there are some reflections in football discourse using the APPRAISAL theory. The study of Hamed (2022) examines negative attitudinal resources in English media to promote racism against Raheem Sterling, a football player with a negative evaluation of capacity, tenacity, and propriety (p.26). Mohammed (2022) explores semantic resources in the live text commentaries during football matches. This research demonstrates the absence of affectual resources in producing live comments by the users. However, the findings indicate a high frequency of attitudinal resources of propriety concerning morality in the comments constructed by users.

Most previous studies focus on attitudinal resources in the ATTITUDE system, more precisely, negative attitudinal resources. However, there are still ENGAGEMENT and GRADUATION systems to explore. In addition, the analysis of most studies is centered on the presentation of quantitative data related to the evaluative resources found in studies without systemic classification. This research analyzes evaluative resources in the entire system: ATTITUDE, ENGAGEMENT, and GRADUATION system. Besides, the rivalry is considered a particular incident (Benkwitz & Molnár, 2012), which can take place off the field (Harvard, 2019) and can instigate a dislike of supporters of two clubs (Chiweshe, 2016). Also, this phenomenon can trigger negative and favorable effects on supporters (Barendt & Uhrich, 2016), making it a challenging concept to examine. Therefore, this study manifests an unmapped area in analyzing online discourse in football rivalry. Furthermore, this study categorizes the factors of rivalry to perceive the basis of the rivalry between Manchester United and Liverpool in the online comments.

Theoretical considerations

Discourse analysis provides various theoretical frameworks to investigate language use. In interpersonal communication, it is assumed that there is interaction between people (Manning, 2020). However, there are interpersonal schemas, which are related to the beliefs or attitudes held by each individual, and these elements influence their perception and their language use in social contexts (Widdowson, 2007). Terms of address are extensively analyzed in discourse analysis studies to observe the relation between language choices, power dynamics, and social practices between the addressers and the addressees (Awoonor-Aziaku, 2021; Ozcan, 2016; Parkinson, 2020). However, the analysis of addressing terms may not provide a clear reflection on the stance, which is considered a key element in producing standpoints in online platforms (Barton & Lee, 2013). Additionally, the intensity of language can be assessed through adverbs used by authors (Liebrecht et al., 2019). This recent study focuses on online communication among football commenters where the attitude, stance of the commenters, and intensifiers can be commonly expressed. Therefore, this study requires a framework capable of analyzing such phenomena. APPRAISAL theory is well qualified to become the analytical tool for this study.

Appraisal theory

Martin and White (2005) state that APPRAISAL theory focuses on evaluative meanings. This theory is developed from Halliday's (1994) Systemic Functional Linguistics (SFL), a paradigm of linguistic theory (Martin & White, 2005). According to SFL, the language offers its speakers and writers a variety of semantic choices to communicate their intended meaning. SFL describes three functions (metafunctions)

in the utterances we produce through our linguistic choices, which are ideational metafunction (describing things, giving explanations), interpersonal metafunction (revealing relation between speaker and hearer) and textual metafunction (organizing text, coherence of the text). SFL provides instruments to analyze these metafunctions and their interactions in discourse (Brisk & Schleppegrell, 2021).

The APPRAISAL incorporates three central systems: ATTITUDE (expressing feeling, judgment, and evaluation of things), GRADUATION (amplifying or reducing evaluation), and ENGAGEMENT (showing position) within a text, as presented in Figure 1.
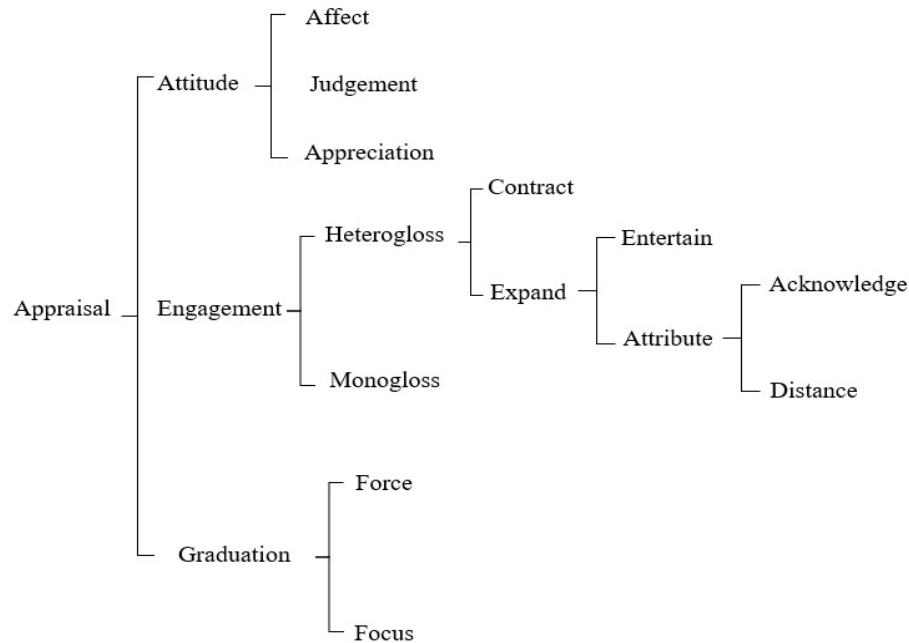
Figure 1: System of APPRAISAL (Martin & White, 2005)

ATTITUDE comprises three main subsystems: polarity, type, and realization. Polarity divides positive and negative values. For example, "He is a very good [+judgement, normality] player." # 1 The adjective "good" carries a positive value. Conversely, "We are rubbish" [-judgment, capacity]. #2 The adjective "rubbish" conveys a negative value. Types of attitude comprise three subsystems of Affect (semantic resources expressing emotion), namely "I am a happy [+affect, happiness] red." The adjective "happy" construes happiness. #3. However, "All ends up in tears." [-affect, unhappiness] #4. The adverbial phrase "in tears" communicates unhappiness. Judgment refers to semantic resources allowing evaluation of behavior divided into propriety (concerns morality, e.g., He is greedy [-judgment, propriety] # 5), normality (how special one is, e.g., Klopp makes him world class. [+judgment, normality] #6), capacity (ability, potential one has, e.g., I'm sure he will have more success. # 7 [+judgment, capacity]), veracity (truthfulness, e.g., Hypocrisy [-judgment, veracity] in play. #8), tenacity (how dependable one can be e.g., Liverpool was just careless [-judgment, tenacity] # 9) The realization of attitude categorizes invoked attitude and inscribed attitude. The invoked realization can be recognized using the combination of numerous words. For instance, You can have him for free # 10 [-t judgment, capacity]. This instance has no particular lexical items overtly conveying negative value. Nevertheless, once combined, this sentence can invoke negative judgment. (bad quality of the player). Nonetheless, lexical units in the inscribed attitude straightforwardly portray negative or positive values. For example, Liverpool had a target and it's already been achieved [+judgment, capacity] # 11.

Engagement is another subtype of Appraisal considered a resource for positioning the speaker or author's voice against or in alignment with various utterances. This subtype is divided into heterogloss (acknowledgment with another dialogic alternative) and monogloss (no acknowledgment with a dialogic alternative). For example, He was probably the best goalkeeper in the world in 2015-18 # 12. The adverb "probably" in this sentence leads to the possibility between "not the best" or "the best," so this example

acknowledges an alternate viewpoint. Whereas this sentence "De Gea is making primary school mistakes" #13 is declared with absolute, no alternate point of view is acknowledged. Heterogloss comprises two opposed features (Martin & White, 2005): CONTRACT and EXPAND. The former excludes alternative voices by rejection, but the latter allows alternative voices. Contract can be divided respectively into "disclaim" (when the speaker or writer completely rejects the alternative voices) and "proclaim" (to support the validity of his/her claim). For instance, "No, they shouldn't let other teams like Chelsea, Arsenal, Spur, City, and United grab this opportunity." #14 The word "no" in this example ultimately denies the alternative voice that they should let other teams grab this opportunity. When the speaker or writer supports the validity of his or her claim and closes the possibility of an alternative voice (Matthiessen et al., 2010). For example, "of course we need to strengthen the squad."#15 The lexical unit "of course" demonstrates "a high personal investment in the viewpoint being advanced" (White, 2003, p.271), so this sentence is presented in a way that is likely for the listener and readers to approve of the speaker or the writer. Expand includes two resources: "entertain" and "attribute." The resource of Entertain allows the authorial voice to open possibilities to the diversity of alternative voices. Nevertheless, the authorial voice does not necessarily align with certainty nor reliability, which can be conveyed via epistemic modals (for instance, may, might, must, possibly, probably) (White, 2015, p.5). As explained above in this sentence, "He was probably the best goalkeeper in the world in 2015-18" # 12. However, Attribute includes "acknowledge" and "distance." This group acknowledges the existence of alternative voices by attributing a viewpoint grounded in the external voice's subjectivity. This can be achieved using, for example, reported speech: All players say they don't know what the future holds.# 16.

Graduation permits the speakers or the writers to increase or decrease the force (intensity), e.g., To be fair, I really think the Liverpool side underperformed this season # 17. The adverb "really" can intensify the verb "to think" to increase the speaker's investment in the action in this sentence. On the contrary, "They had by far less injuries to the key players."#18. In this example, the adjective "less" decreases the force of the speaker's investment regarding the number of injured players in the squad. In addition, Graduation provides a resource to measure the focus (blur or sharpen): Liverpool is just playing out this season. # 19

As mentioned, this study is centered on examining evaluative resources used in the comment in the background of rivalry. Therefore, it allows us to form this research question: How do the evaluative resources mirror the dimensions of rivalry in the comments toward Manchester United and Liverpool?

METHODOLOGY

To collect the data, the researchers prioritized British online sports media as Manchester United and Liverpool were both British clubs. Due to the high number of active users on Facebook, which reached 3.04 billion users in 2023 (Dixon, 2023), the researchers opted for this online platform. After the investigation, many British fan pages offered the possibility to collect the data. For the selection of fan pages, the number of followers was taken into consideration. The number of followers for each British fan page was compared, namely: ESPN FC (11 million followers), Sky Sport Football (3.6 million followers), Daily Mail Sport (4.5 million followers), The Guardian (8.9 million followers), and BBC Sport (14 million followers). BBC Sport had the highest number of followers. Since a higher number of followers hypothetically provides greater opportunities to generate a more diverse range of comments, the researchers decided to collect the data from the official BBC Sport fan page on Facebook, which had around 14 million followers. Furthermore, new coverage of various kinds of sports was displayed daily on this fan page, providing many subscribers with the opportunity to exchange their comments. These properties enabled the researchers to efficiently study how different commenters interacted with the news through their use of language.

DATA COLLECTION

The data was collected from comments on the BBC Sport fan page, specifically related to news about Liverpool and Manchester United between 17 June and 26 July 2020. This timeframe coincided with the English Premier League's resumption after a three-month suspension due to COVID-19, as data was in

the form of comments, so the data could contain elements that were not subject to the analysis, namely clickbait, spam, emoticons, memes, and others. To eliminate these elements, "the most relevant" feature, an option to focus on the most engaging comments, was utilized. With this feature, there were 1,868 comments, divided into 888 comments toward Manchester United and 980 comments toward Liverpool.

Due to the focus on the rivalry between Manchester United and Liverpool, the comments expressed that the wording related to Manchester United and Liverpool was preserved. In this process, AntConc, multi-purpose corpus analysis software, provides quantitative information, indicating several keyword frequencies (Anthony, 2011). Moreover, the search term option permitted to view the words used in the context (Froehlich, 2015). In addition, assigning nicknames to football clubs often plays a crucial role in football, as they can mirror important cultural aspects (Feng et al., 2020). Hence, the truncation followed by the team's name was applied in the search term (e.g., *united, *pool) to increase the opportunity of finding any nickname linked to the teams. As a result, any comments containing this suffix would theoretically reference Manchester United and Liverpool, leading to 475 hits for the comments containing *pool and 152 hits for *united.

DATA ANALYSIS
Coding for the types of rivalry
To align with this perspective, the comments containing the suffix *pool and *united were classified according to the dimensions of rivalry (Tyler & Cobbs, 2015). In this stage, there were 60 comments categorized in total.
Coding for the Appraisal choices
The categorized comments were coded using the APPRAISAL theory to analyze the evaluative resources used by football commenters. Figure 2 lists APPRAISAL coding used in the analytical process.

[ ]	coding of Attitude resources
+	positive Attitude (for affect/ judgment/ appreciation)
-	negative Attitude (for affect/ judgment/ appreciation)
bold	inscribed Attitude (for affect/ judgment/ appreciation)
t	invoked Attitude (for affect/ judgment/ appreciation)
☐	Engagement resources
—	Graduation resources

Figure 2: Appraisal coding symbols

Data validation
To validate data, O'Connor and Joffe (2020) suggest randomly selecting 10 - 25% of the samples for interrater agreement. This research follows this suggestion, sending 15 samples to two inter-raters verifying the samples, resulting in an 86.67% agreement rate.

RESULTS
The findings address the research question: How do the evaluative resources mirror the dimensions of rivalry in the comments toward Manchester United and Liverpool? To answer this question, the findings reveal that comments about Manchester United and Liverpool demonstrate two dimensions of rivalry (Tyler & Cobbs, 2015): Conflict and Bias. Under Conflict, three subcategories are observed: Parity (history), Parity (recent), and Star factors. Furthermore, evaluative resources manifest within two subtypes of Bias: Cultural differences and Unfairness.
Conflict
Regarding Conflict (factors forming competitions of two teams), the comments about Manchester United and Liverpool are formed around Parity (history), Parity (recent), and Star factors.

Parity (history): competitions between the teams in history

The rhetorical question combined with positive judgmental resources and Graduation resources increasing intensity to refer to the historical success of Manchester United. For instance, the comment, as shown in example 20, refers to the success of Manchester United in the past since 1992.

"Do Liverpool fans know that the 'Premier League' started 28 years ago, in 1992, and not in 2020? United have **won** [+judgement, capacity] it 13 times during that period whilst Liverpool have just **won** [-judgment, capacity] it once, the same amount as Blackburn Rovers and Leicester City. "**Small clubs**" # 20

The commenter begins the sentence with the Engagement resource via an unanswered pseudo-question, but it leads the readers to reflect on the utterance. Then, the record of Premier League Champions between the two clubs is juxtaposed to allow the readers to recognize the performance of Manchester United in the past using the positive judgment of capacity from the use of the word "won" and upscale the number of times for the champion of the league between two clubs with Graduation resource (13 times). The adverb "just" decreases the intensification of the fact that Liverpool wins the Premier League, and the word of frequency, "once," demonstrates that Liverpool has a lower number of winning the league 1:13 times. The fact that it won only once since the creation of the Premier League by Liverpool is also related by the commenter to the "small clubs," a negative resource of judgment, normality stimulating the readers to link Liverpool and those clubs, identical in quality and performance negatively.

Parity (recent): team's current achievement

The positive inscribed and invoked judgmental resources of normality are utilized to assess Liverpool's style of play. As reflected in example 21, the comment positively utilizes evaluative resources to underline Liverpool's strong performance in this recent season.

"I can't deny **the way LIVERPOOL PLAYED THIS SEASON** [t+ judgment, normality] … ABSOLUTELY **TOP KNOT** [+judgement, normality] IN EVERY MANNER… # 21.

The judgment resource positively invokes the normality of Liverpool's overall performance this season. The Graduation resource under the adverb " absolutely" in capital letters amplifies the positive resource of judgment evaluating the normality regarding the quality of the team. In addition, "IN EVERY MANNER" in all capital letters uses a Graduation item to increase the specialness of Liverpool.

Star factor: notable individuals illustrating the distinctiveness of the teams.

Diverse positive attitudinal resources manifest in combination with Graduation resources to evaluate the performance, the contribution to the team, and the feelings of the commenters, as presented in examples 22 and 23.

"He (David De Gea) is doing a **great** [+appreciation] job at **keeping Man U at** [fifth] [-judgment, normality] is still a very **good** [+judgement, normality] keeper. Play over 400 games for United. It is **a defensive problem** [-judgment, capacity], not him." #22.

Mentioning the good side of the goalkeeper of Manchester United, the commenter positively resorts to inscribed Appreciation resource to defend him despite the [fifth] position of the table, negatively evaluated with the resource of judgment (normality). The resource of Engagement (still) is utilized to counter any external voice against this argument. The Graduation resource also intensifies the goalkeeper's positive personnel performance. Also, this resource amplifies the number of games played. At the end of the comment, the commenter negatively assesses the team's defensive line, accusing it of the cause of negative performance and denying any divergent view on the goalkeeper's decent performance.

Likewise, the combination of attitudinal resources and Graduation resources are applied to intensify the force of the evaluative resources in the comments toward Liverpool's player. In addition, the commenter also resorts to Engagement resources in the form of a rhetorical question without expectation of a reply in the comment, as indicated in Example 23.

"We **love [+ affect, inclination]**Salah at Liverpool. **Scores** [+judgement, capacity] massive amounts of goals and assists for us.If people didn't keep **encouraging [-appreciation]** talk of him being **unhappy** [-appreciation]with us. No need for **major** [+appreciation] signings as it could **unbalance** [-judgment, normality]our squad! So why break up a winning team!" #24

A positive affectual resource is utilized to articulate inclination for the Liverpool's player. The commenter employs a positive judgment of capacity combined with Graduation resources to evaluate and enhance the ability of the players to score the number of goals and assists. A negative appreciation and a negative affectual item are used to dismiss any talk about Salah's unhappiness with Liverpool. Then, the negativity is employed to deny any requirement of a "big signing." This "big signing" is assessed via a positive appreciation resource, making the team unstable, using a negative judgment resource (normality). The comment ends with an Engagement resource in the form of a leading question without providing any further information.

Bias

Bias concerns the prejudice against members of rival teams premised on a sense of belonging to one's own team. As per the dataset, this dimension comprises Cultural differences and Unfairness.

Cultural differences: disparities in terms of people's nationalities, social class, and religious or moral convictions

In this subtype, invoked negative resource of normality is observed to underrate and negatively highlight the contrast of the rival team in order to assign this negative evaluation to the target.

"Did they bring them **candy shirts** [-t judgment, normality] over from Pakistan? Probably United fans **muppets** [-judgment, capacity] <u>20 times</u>" # 25

An invoked negative judgment resource (normality) is employed in the question to evaluate the fancy shirts some foreign supporters' wear. The commenter provides a hypothesis on the group of Manchester United supporters who are wearing the shirt using a modal adverb "probably" to leave a space for external voice without demonstrating substantial certainty before negatively assessing the intellectual level of those supporters with a negative evaluative item of judgment, which is also intensified with the resource of Graduation (Force), "20 times".

Unfairness: a sense of unfair treatment undergone by the beloved team in the competition

Negative judgment resources are mainly used to assess the morality of the targeted teams in the comments. Moreover, invoked negative judgmental items are primarily found in the comments. According to the findings, the commenters tend to associate negative judgment resources of propriety to the name of the teams. In doing so, they create neologism to nominate the targeted teams negatively. In other words, they give a new nickname to the targeted teams, which can negatively discern the ethics of the targeted team. Also, rhetorical questions are used in this subcategory of Bias.

Example 26 shows the uses of invoked judgmental resources to assess Liverpool negatively. To achieve that, the commenter coins a new nickname.

"It feels<u> much more</u> **amazing** [+ affect, reaction] when you **win** [+judgment, it in front of fans in a <u>full</u> proper season with no three months gap and VAR **changing its rules** [t-judgment, propriety]<u>every</u> match. But **LiVARpool** [t-, judgment, propriety] wouldn't **know** [-judgment, capacity] what that's like lol **enjoy** [+affect, happiness] your **tainted title dippers** [t-judgment, capacity]." # 26

This example is composed of two sentences. The first sentence describes a suitable condition of celebration when a team wins a trophy, according to the commenter's view. In this sentence, resources of Graduation "much more" are applied to strongly emphasize the positive resource of affect "amazing," expressing the commenter's reaction toward the team's victory with the supporters' participation in the stadium. The victory is assessed using a positive inscribed judgmental item. The commenter resorts to negation to deny the interval of three months for the COVID-19 break and invokes a negative evaluative item of judgment to judge the ethics of using VAR (Video Assistance Referee) during the matches.

The second sentence, a resource of Contract, articulates a contradiction of the current situation when the competitions are held behind closed doors. A negatively invoked item of judgment evaluates the morality of Liverpool from VAR, accusing Liverpool of being beneficiary of this technology in their competitions. This negative evaluative item is associated with the club's name, creating a neologism LiVARpool. Then, the commenter assesses the capacity of Liverpool to never experience this kind of atmosphere with an inscribed negative judgment and uses an imperative form via a positive affectual item

to recommend Liverpool to take pleasure in the title. The commenter also invokes a negative assessment of the title that Liverpool acquires.

Similarly, this example presents uses of invoked attitudinal resources via combinations of lexical items to convey negativity. As seen from example 27, no specific word overtly expresses negative value.

"Yeah just look at the VAR table, Liverpool **net+1** [t+judgment, propriety] , ManU **net+7** [t-judgement, propriety], **top of the table** [t- judgement, capacity] (**nice** [+ affect, satisfaction] to see them **top of something** [t- judgment, capacity]) # 27.

The initial stance indicates the alignment of the commenter to the previous argument with the Engagement resource (concur) using the word " Yeah." The statistics on VAR, Video Assistant Referee, acquired by Liverpool and Manchester are informed here. They say Liverpool benefits from the VAR decision once, whereas Manchester United earns seven times. The commenter invokes a positive judgmental item (propriety) for Liverpool as this team receives fewer VAR decisions and is viewed as not a cheating team. However, Manchester United has far more VAR decisions in their favor, is perceived as a cheating team, and invokes a negative judgment of propriety. In addition, the commenter gives a pseudo compliment through an invoked judgment of normality, judging the incapacity of Manchester United in playing fair plays. Moreover, the feeling of the commenter is shown through the adjective "nice" in brackets to demonstrate his satisfaction with the inscribed positive resource for being at the first rank of the VAR decision, and the commenter ends with negative invoked capacity.

A negative sobriquet is also coined for Manchester United. This coinage can convey a negative meaning to discern the moral and negative image of the target.

Example 28 negatively demonstrates some privilege acquired by Manchester United.

"Forget this **Varchester** [t-judgement, propriety] United team." #28

The commenter negatively assesses the morality of Manchester United, which acquires some advantages from VAR, coins a new prefix for this team, and integrates VAR, a negatively invoked evaluation of propriety, into the name of the club.

Another coinage coupled with Manchester United to provide a negative assessment of the morality of Manchester United is viewed in this example. This example affirms that the team's name can be a focal evaluation point.

"**Pen [t-judgment, propriety]** Chester United" # 29

The prefix "pen" alludes to the penalties Manchester United obtains throughout the season, recognized as essential for the match outcomes. This prefix, moreover, is linked to the name of the team, invoking a negative judgment of propriety to the club.

In addition to employing invoked judgmental resources of propriety, the commenters utilize rhetorical questions to articulate an unfairness against the targeted team, as demonstrated in example 30.

"Why is Manchester United awarded a penalty almost every game?" # 30

With the leading question, the commenter can neither provide additional information nor answer the question. This type of question can create an opportunity for the other voices and encourage readers to examine the question, permitting them to construct their points of view on the penalties acquired by Manchester United in the season.

DISCUSSION

It denoted that the evaluative resources employed by the commenters in the comments toward Manchester United and Liverpool were distributed in dimensions of Conflict and Bias. According to the findings, the comments between supporters of the two teams might have shown strong desires for positive outcomes for their beloved team, whereas they expected terrible things to happen with the rival team (Mastromartino et al., 2018). Thus, this could inevitably lead to the concept of othering, Us vs Them, a common incident in sports competitions (Nosal, 2015). In addition, the commenters could align themselves with their beloved team and exhibit radical behavior (Makurat, 2013). The fact that supporters showed such conduct in their comments could originate from the state of "Schadenfreude," the experience of joy when they see the failure of the rival team (Tyler et al., 2021, p.4). For these reasons, the evaluative resources in

the comments directed toward Manchester United and Liverpool in this study overwhelmingly pointed to the dimensions of Conflict and Bias.

In contrast, the comments expressed in this study through evaluative resources demonstrated no reference to the similarity between Manchester United and Liverpool. In addition to the explanations above, Tyler and Cobbs (2016) state that the standpoints of supporters could be diverse and asymmetrical. This might be another reason to explain why the comments in this study were generated based on Conflict and Bias. Moreover, Bashiru and Opoku (2017) point out the supporters' concerns regarding referee bias, which might impact the match's outcome. This statement coincided with the fact that the commenters tended to accuse Manchester United and Liverpool of being unethical teams.

Nevertheless, positive, and negative consequences can also be produced through rivalry, as previously mentioned (Barendt & Uhrich, 2016). Some examples in the dataset indicated some positive gestures demonstrated by the commenters when they protected or encouraged their beloved players in the arguments about their performance and role in the team. This incident reflected the solidarity of the group of supporters when they supported their players through the challenging times. Besides, this gesture can consolidate solidarity, according to the outsiders (Dolan & Connolly, 2016). However, the dataset also indicated that the comments toward Liverpool were more frequent than ones towards Manchester United. End et al. (2006) argue that supporters tend to favor affiliation with successful sides rather than unsuccessful ones. This might explain why the spotlight was shed on Liverpool in the news, and this statement could advocate the fact that many supporters of Liverpool voiced their views toward Liverpool in the comments at the moment. In the 2019-2020 season, Liverpool became the champion of the English Premier League after 30 years of waiting.

Regarding evaluative resources, the force of judgmental capacity items can be increased with Graduation resources (Martin & White, 2005) to praise the team's performance in history. Also, positively invoked judgmental resources could be used in combination with Graduation resources to intensify the force of compliments on the present performance of the team. In addition, when negative resources were used to evaluate the targeted participant, Engagement resources of the counter could follow to counter the previous arguments. Then, positive resources could be utilized to add new positive information about the beloved team. Negative evaluative resources of propriety were employed to expressions in Bias. Assigning negative nicknames referring to the unethical behavior to the targeted team can be a practice to the rival team so that this new sobriquet portrays a negative image of the targeted participant (s) (Ross & Caldwell, 2019). For example, commenters attached VAR to Manchester United and Liverpool (e.g., VARunited, LiVARpool).

Nevertheless, this addition can also be recognized as a joke. However, it could contain inherent danger, resulting in a more significant threat, namely hate speech in covert form (Sindoni, 2018). Nowadays, the advent of social media can facilitate the spread of hateful statements, which are uncontrollable (Aslan, 2017) and easy to replicate (Paz et al., 2020). Furthermore, negative resources of judgment are commonly used to express toxicity in interactions on social media (Cavasso & Taboada, 2020). Besides, Graduation resources can be coupled with negative resources of propriety to boost the force of accusation (Ross & Caldwell, 2019). Rhetorical questions can be used to silence the targeted participant. Also, they can boost consideration and persuasion (Petty et al., 1981).

Interestingly, even if football is viewed as a sport involving emotion by supporters (Chiweshe, 2016), not many affectual resources were utilized in this study, corresponding to the study of Mohammed (2022). In this study, the commenters tend to resort to attitudinal resources in their comments rather than affectual resources as they focus on the players' performance, which could be analyzed in terms of "capacity, normality, or tenacity" (p.7). This could also explain the low frequencies of affectual resources in this study.

CONCLUSION

Rivalry is a unique and special phenomenon in football, stimulating supporters to ignite passionate barriers against rival teams. In some senses, this also contributes to unity among in-group supporters. This paper highlights the rivalry between Manchester United and Liverpool, exploring the

comments on the BBC Sport fan page. According to the findings, the rivalry between Manchester United and Liverpool is shown through Conflict and Bias dimensions in the comments. The commenters may take a critical approach, prioritizing their viewpoints on the performance of their beloved team and opposing team rather than comparing the similarities between the two teams in the arguments. To evaluate the performance of the teams, the commenters can utilize attitudinal resources of capacity or normality. In addition, giving negative sobriquets related to immorality and using negative attitudinal resources of propriety can create negative images for the targeted teams. To question morality, Graduation resources can also be used with negative propriety to accuse the targeted team. Moreover, the commenters resort to rhetorical questions not only to lead the readers to reflect on the argument, whether giving or not the answer but also this type of question can silence the opposing side.

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The Effect of Concept-Oriented Reading Instruction on Thai Vocational Students' Reading Comprehension and Motivation to Read

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ABSTRACT

Research has provided empirical evidence to prove the effect of Concept-Oriented Reading Instruction (CORI) on improving L1 and L2 readers' comprehension. However, there is a relative dearth of research related to its effect on Thai vocational students' reading comprehension in English. The objective of this study is to investigate the effect of Concept-Oriented Reading Instruction (CORI) on vocational students' reading comprehension and motivation to read. The data were collected from the Adolescent Motivation to Read Profile (AMRP), Cambridge Michigan Language Assessment of English Placement Test (CaMLA EPT), and reflective journals. The participants were thirty-two students who were first-year vocational students in Nakhon Pathom province in Thailand. After receiving the treatment, students' reading comprehension increased significantly. Moreover, their motivation to read also increased after the treatment. Concept-Oriented Reading Instruction (CORI) allowed struggling readers to experience the achievement, which had a positive effect on their self-efficacy belief and motivation to read. Therefore, it could be noted that Concept-Oriented Reading Instruction can be an alternative reading approach that helps improve struggling readers' reading comprehension and motivation to read.

KEYWORDS: Motivation to read, reading comprehension, Concept-Oriented Reading

INTRODUCTION

Reading both online and offline in English is an important skill for vocational-school students' academic achievement and lifelong learning, which contribute to their professional success. A lot of informational sources are written in English. Unfortunately, the results of the Vocational National Education Test (V-NET) in 2022, a standardized test that is used to measure vocational students' academic proficiency and job-specific skills, revealed that the students earned a mean score of 36.38 out of 100 on an English subject. This indicated that the students had low English proficiency, especially English reading ability.

Research in L2 reading has shown that struggling readers need reading strategy instruction and need to be trained on how to utilize effective reading strategies (Adunyarittigun, 1999, 2021; Tolongtong & Adunyarittigun, 2020; Grabe, 2012). Providing L2 readers with effective reading strategy instruction contributes to their reading achievement (Block & Pressley, 2002; Taboada & Guthrie, 2004; Hudson, 2007; Phakiti, 2003). Reading strategies such as questioning, making inferences, and finding main ideas can assist students in solving reading problems, comprehending texts, and achieving reading goals.

Recently, there has been growing interest in the effect of Concept-Oriented Reading Instruction (CORI), a reading strategy instruction developed by Guthrie and his colleagues (1993), on students' reading comprehension. CORI includes strategy instruction and motivation to read, which aim specifically to build conceptual knowledge in science and reading comprehension. Reading strategies such as activating background knowledge, questioning, searching for information, summarizing, and organizing information in the form of graphic presentations (graphic organizers) are taught explicitly. Students are given choices of interesting readings and do reading activities collaboratively in a friendly and supportive working environment (Wigfield, Mason-Singh, Ho, & Guthrie, 2014). Moreover, students will be trained to read scientific texts, think systematically, pose questions, and do problem-solving.

Previous studies have yielded a positive effect of CORI on both L1 and L2 students' reading achievement (Azis, 2015; Vongkrachang & Chinwonno, 2015; Jafari & Biria, 2016; Kalsum, Suwarno, &

Dharmayana, 2018; Suryani, 2017). However, little is known about its effects on vocational students' reading comprehension. Therefore, the purpose of this study is to investigate the effect of CORI on Thai vocational students' reading comprehension and motivation to read in English.

RESEARCH OBJECTIVE
      1. What is the effect of Concept-Oriented Reading Instruction on EFL vocational students' reading comprehension?
      2. What is the effect of Concept-Oriented Reading Instruction on EFL vocational students' motivation to read?

LITERATURE REVIEW
1. Reading Comprehension
      Reading comprehension is a process by which readers make interactions with texts and construct meanings from texts (Harris & Hodges, 1995). Readers need to apply cognitive and text-processing strategies such as activating their schemata, identifying main ideas, making use of discourse structure to make sense of the texts, using comprehension-monitoring strategies, and using comprehension-fostering strategies to solve their reading problems (National Reading Panel, 2000). Readers will use different comprehension strategies depending on factors such as text genres, their linguistic knowledge, and text and topic familiarity (Van Dijk & Kintsch, 1983). Skilled readers are able to access higher-level comprehension strategies such as monitoring the comprehension process and engaging in higher-order thinking during reading (Denton et al., 2015). They can continuously monitor their own thoughts, make use of their experience to make sense of the text, and enhance their understanding (Zhussupova & Kazbekova, 2016). However, struggling readers may not be able to use strategies effectively (Denton et al., 2015).
2. Constructs of motivation
      In the following section, motivation constructs such as intrinsic and extrinsic motivation, goal setting, self-efficacy belief, and social collaboration will be defined and demonstrated how they affect students' reading behaviour (Guthrie & Wigfield, 2000).
      2.1 Intrinsic and extrinsic motivation
      Readers with intrinsic motivation have willingness to read because of their interest or view of reading as a way of learning (Deci & Ryan, 1985). Factors such as rewards, compliments, or grades are not the case. When they encounter reading difficulties, they are highly likely to treat them as challenges, be persistent in reading, and solve reading problems in a strategic way. On the other hand, if those readers have no intrinsic motivation, they will have negative attitudes towards reading and see reading difficulties as threats to be avoided (Gambrell & Marinak, 1997) and easily quit reading.
      In contrast, extrinsic motivation such as rewards, compliments, or grades becomes a drive or a reason for readers to read (Gambrell & Marinak, 1997). Extrinsically motivated readers want to improve their reading skills because of its utilitarian purposes such as having a good future career, developing their linguistic ability (Ozonder, 2015), or making informed decisions about their well-being.
      2.2 Goal setting
      Goals become an orientation or a reason for readers to interact with texts. Through reading, readers have commitments to get meaning from text, entertain themselves, or seek solutions to personal problems. Research has shown that readers who establish reading goals before they read will utilize reading strategies to solve reading problems in order to achieve their goals (Schunk, & Zimmerman, 1997; Wigfield, 1997). Goals of reading can be reset if readers cannot achieve such goals. On the other hand, readers are very likely to set their goals higher if they can achieve the initial goals (Schunk, 1990).
      2.3 Self-efficacy belief
      Self-efficacy belief refers to how students perceive and judge their ability to read (De Naeghel et al., 2012). Research has shown a strong positive correlation between self-efficacy and reading comprehension (Sutter & Campbell, 2022; Unrau et al., 2018). Readers with a sense of self-efficacy are very likely to put more effort on and have more concentration on reading when they encounter difficulties. They are more persistent in reading despite encountering challenging reading tasks (Liew et al., 2008).

They obtain information about their self-efficacy from their experience of reading success, vicarious experience, feedback from trustworthy sources (i.e. parents, teachers, or peers), and physiological reactions (i.e. anxiety, sweating, increased heart rate, etc.) (Hank & Melnick, 1995).

2.4 Social involvement

Social involvement in reading encourages students' participation in reading activities with their community (i.e. family, peers, and teachers) which includes reading together, talking about books, and sharing books with others (Guthrie, Wigfield, & Von Secker, 2000). Gambrell (2011) unequivocally states that students will be more motivated when they have plenty of opportunities to interact with others about their reading. With social involvement, struggling readers could collaboratively work to construct meanings of texts with assistance from their community, learn how to read, and enjoy sharing their reading experience in a friendly environment, which leads to an increase in motivation to read (Oldfather & Dahl, 1994), reading engagement, and the development of language proficiency (Hughes et al., 2008). This consequently turns them from other-regulated struggling readers to self-regulated readers (Lantol & Appel, 1994; Vygotsky, 1978).

2.5 Motivation, amount of reading, and reading achievement

Several studies have aimed to clarify that motivation can be an accurate predictor of reading outcomes and have shown the relationship between students' motivation to read, reading engagement, and reading achievement (Wigfield & Guthrie, 1997; Stutz et al., 2016; Erickson et al., 2015; and Logan et al., 2011). Highly motivated readers read more amount of reading than students with low motivation because the former are willing to spend a lot of time reading and tend to increase their amount of reading in the present and future (Erickson et al., 2015). Research has shown that readers with a lot of reading experience can expand their schemata, cognitive strategies, and repertoire of vocabulary (Artelt & Schneider, 2015; Guthrie et al., 1999; Ho & Lau, 2018; Pfost, Dörfler, & Artelt, 2010; Wigfield et al., 2008). It positively affects students' reading achievement.

2.6 Concept-Oriented Reading Instruction

Concept-Oriented Reading Instruction (CORI) was developed in 1993 by John Guthrie and his colleagues. The purpose of CORI is to enhance students' reading engagement and reading comprehension through reading strategies, motivational support, and conceptual knowledge in science. Within the CORI instructional approach, students are provided with opportunities to search, observe, and get sensory experiences.

CORI was originally developed and implemented with primary grade L1 readers. Three main emphases of CORI are also useful for L2 readers, such as training them to be strategic readers, activating prior knowledge, and increasing readers' motivation (Swan, 2002). Grabe and Stoller (2011) made a clear integration of utilizing CORI and teaching content and English language in EFL settings. It is important that EFL teachers should help L2 readers become more strategic, motivate them to read, and incorporate extensive reading in class. Research has proven that CORI is effective on promoting both L1 and L2 readers' reading success and motivation to read (Grabe & Stoller, 2011; Vongkrachang & Chinwonno, 2015; Jafari & Biria, 2016; Suryani, 2017).

Studies in L2 reading corroborated the effect of CORI on improving L2 students' reading comprehension of informational texts and reading engagement. To help students comprehend the text, they are provided with explicit reading strategies. CORI teachers have to explain how to use reading strategies explicitly, show examples, and let students practice clearly. The use of CORI strategy encouraged the students to apply rehearsal strategies; therefore, the students' practice in using the CORI strategy tended to increase their reading comprehension (Azis, 2015). Vongkrachang and Chinwonno (2015) confirmed that CORI could foster students' collaboration because, in CORI classroom, students were required to work with their peers and group members in discussing the idea and sharing their reading based on the reading texts. These types of activities can increase reading engagement and social involvement, and they are very effective with struggling readers (Grabe, 2009). With the collaboration in reading, it positively affected students' reading achievement, knowledge gained from reading, and the kinds of practices in which they have engaged (Vongkrachang and Chinwonno, 2015). CORI also created the friendly learning environment for students and encourages them to be active readers. According to Kalsum et al. (2018), CORI strategy

helped the students be active readers, made them focus on the text, attracted their motivation, improved their long-term memory in comprehending the text, and increased their reading comprehension.

RESEARCH METHODOLOGY

1. Participants

The participants were chosen by using purposive sampling. They were 32 first-year vocational students majoring in hospitality management at a vocational school in Nakhon Pathom province, Thailand. They were enrolled in an English subject in the academic year 2020. Among the 32 participants, 28% were male, and 72% were female. The participants were between the age of 18 to 21 years old. 66% were 18-19 years old, and 34% were 20-21 years old. The mean score of the Vocational National Education Test (V-NET) English subject test was 30.74 out of 100. It indicated that the participants had low English ability. Although V-NET is not a reading test, reading comprehension requires knowledge of basic grammar, effective reading strategies, an awareness of discourse structure, and the amount of vocabulary (Pressley, 2002). Low English proficiency negatively affected students' reading comprehension. It is contributed to the fact that these participants needed to improve their reading comprehension and motivation to read because they had low English proficiency and were struggling readers.

2. Instruments

2.1 Adolescent Motivation to Read Profile

The Adolescent Motivation to Read Profile (AMRP) by Pitcher and his colleagues (2007) was used in this study to measure students' motivation to read before and after getting the CORI. AMRP is appropriate for the participants in this study. Topics in AMRP include reading activities that are related to adolescences' lives such as electronic resources, schoolwork and projects, and activities out of school.

There are two parts: a reading survey and a conversational interview. The reading survey consists of 20 items using a four-point Likert scale to measure self-concept as a reader (10 items) and the value of reading (10 items). In the conversational interview, each interviewee was asked open-ended questions to elicit his or her views of narrative reading, informational reading, and general reading, his or her opinion about in-school and out-of-school reading activities, use of multiliteracies, and the influence of family and friends on reading. To help them understand clearly, the researcher translated the AMRP from English into Thai and followed instructions in the AMRP manual strictly.

2.2 The Cambridge Michigan Language Assessment of English Placement Test (CaMLA EPT)

The Cambridge Michigan Language Assessment of English Placement Test (CaMLA EPT) is an instrument used to measure the students' reading comprehension before and after they received the CORI instruction. The CaMLA EPT is suitable for assessing college-aged readers' reading comprehension in English. The reliability of the CaMLA EPT is greater than 0.92 (Walter & Hentschel, 2013). The test consists of four parts with 80 items in multiple-choice format: 25 listening items, 20 grammar items, 20 vocabulary items, and 15 reading comprehension items. Yet, only the reading comprehension questions were used in this study. It took 30 minutes for the students to complete the reading part.

2.3 Student's Reflective Journals

The student's reflective journal is used to elicit students' opinions on CORI, motivation to read and view of their own reading comprehension ability. They were asked to write to reflect their views after receiving the treatment each week.

3. Procedure

The study was started during the first semester of the academic year 2020. The experiment consisted of 7 meetings in 7 weeks, and each meeting took 180 minutes. The teacher in this research followed the steps of Concept-Oriented Reading Instruction which consists of 4 steps: observing and personalizing, searching and retrieving, comprehending and integrating, and communicating with others.

In week 1, the participants were asked pre-reading questions about a text to activate their prior knowledge and were asked to skim and scan the text to make predictions about the text content. Then, they read the assigned reading and practice note-taking. In week 2, the participants presented the information obtained from reading. They would be introduced and trained on how to ask questions and search for answers from other sources. In week 3, the participants obtained plenty of opportunities to practice

searching for information to answer their questions. The teacher would introduce the necessary linguistic knowledge related to the text and context clues to help the students deal with text challenges. In week 4, the participants were taught how to summarize texts in the form of mind-mapping and practiced this activity. In weeks 5-7, the participants were introduced to a new reading selection of their choices and practiced the strategies taught. The participants worked collaboratively with their peers in groups with support from the teacher. At the end of the experiment, each group of participants received opportunities to present their mindmaps illustrating their conceptual understanding of reading selections.

To investigate the effect of CORI on students' reading comprehension and students' motivation to read, the participants were asked to take the Cambridge Michigan Language Assessment of English Placement Test (CaMLA EPT) and Adolescent Motivation to Read Profile (AMRP) at the beginning and end of the experiment. At the end of the experiment, the participants were asked to write reflective journals to express their opinion about the strategy instruction they received and discussed what they liked and disliked.

4. Data analysis

To answer the first research question, the quantitative data from the Cambridge Michigan Language Assessment of English Placement Test (CaMLA EPT) were entered into the SPSS program to be analyzed for percentage, mean, standard deviation (S.D.), and t-test.

To answer the second research question, the quantitative data from the AMRP was entered into the SPSS and analyzed to obtain percentages and t-test. The questionnaire has 20 items with 80 points. The response options are from the least positive (1 point) to the most positive (4 points). The qualitative data from the AMRP and the reflective journal were analyzed by using content analysis. The first researcher read the data several times until she internalized, got familiar with, and coded the data.

RESULTS

1. What is the effect of Concept-Oriented Reading Instruction on Thai vocational students' reading comprehension in English?

To answer this research question, mean and standard deviations of pre- and post-tests of the CaMLA EPT were computed; differences between mean were analyzed by use of a dependent t-test.

Table 1 Descriptive Statistics of The Pre-and Post-Tests of Reading Comprehension Test

Test		Min	Max	Mean	SD	t
Reading comprehension	Pretest	3	7	4.92	1.06	-9.31*
	Posttest	5	12	7.68	1.63	

Table 1 showed the effect of CORI on students' reading comprehension. The minimum pre-test and post-test scores of reading comprehension were 3 and 5 while the maximum pre-test and post-test scores of reading comprehension were 7 and 12, respectively. The finding revealed that the post-test mean score of the reading comprehension test (M=7.68, SD=1.63) was significantly higher than that of the pre-test (M=4.92, SD=1.06, t= -9.31, p<.001). The result indicated that CORI could help improve the student's reading comprehension ability.

The students reported in the reflective journal that they could summarize the content of what they read in forms of graphic presentations. They felt that doing this activity helped them monitor and foster their understanding because this activity gave them time to check their understanding of the text and organize concepts that they gained from reading. Yet, they thought that summarizing was quite challenging for them because they had to put the content in sequence to form the graphic presentations. From the analysis of the qualitative data from the reflective journal, it was certain that the students in this study were positive towards CORI and that their reading comprehension ability was improved after receiving the treatment. It also unveiled that the students were able to use the reading strategies taught when they read and encountered reading difficulties. The examples of students' comments are as follows:

Student 5, "I understand the things that the teachers taught me. I can understand the text with the teacher's guidelines. I feel my reading was improved."

Student 6, "I like this class. I feel enjoyable. I didn't understand everything that I read, but I think If I practice more, my reading will improve."

Student 16, "After the course, I think my reading was improved because I know how to use reading strategies. I think reading strategies help me a lot and I can use this knowledge in the future."

2 .What is the effect of Concept-Oriented Reading Instruction on Thai vocational students' motivation to read?

Table 2 Descriptive Statistics of The Pre-and Post-Tests of Motivation to Read

Test		Min	Max	Mean	SD	t
Motivation to read	Pretest	37	59	47.89	4.40	-11.84*
	Posttest	51	66	58.14	3.08	

As can be seen in Table 2, the minimum pre-test and post-test scores of motivation to read were 37 and 51, whereas the maximum pre-test and post-test scores of motivation to read were 59 and 66, respectively. An analysis of the motivation to read test scores pointed out that the post-test mean score of the motivation to read (M=58.14, SD=3.08) was significantly higher than that of the pre-test (M=47.89, SD=4.40 t= -11.84, $p<.001$). It demonstrated that CORI had a positive effect on the student's motivation to read.

Table 3 Descriptive Statistics of the Pre-Test and Post-Test Mean Scores of Items on Adolescent Motivation to Read Profile

Items	Pre-test mean scores	Post-test mean scores
1. My friends think I am a very good reader.	2.20	2.50
2. Reading a book is something I like to do.	2.60	2.90
3. I read a lot better than my friends.	1.80	2.70
4. My best friends think reading is really fun.	2.90	2.80
5. When I come to a word I don't know, I can almost always figure it out	3.40	3.80
6. I tell my friends about good books I read.	1.80	2.90
7. When I am reading by myself, I understand almost everything I read.	2.80	3.00
8. People who read a lot are very interesting.	3.40	3.70
9. I am a very good reader.	2.00	2.30
10. I think libraries are a great place to spend time.	3.00	3.30
11. I worry about what other kids think about my reading every day.	3.20	3.40
12. Knowing how to read well is very important.	3.20	3.80
13. When my teacher asks me a question about what I have read, I always think of an answer.	2.30	2.70
14. I think reading is a great way to spend time.	2.50	3.10
15. Reading is very easy for me.	2.40	2.20
16. As an adult, I will spend a lot of my time reading.	2.80	3.10
17. When I am in a group talking about what we are reading, I always talk about my ideas.	1.80	2.20
18. I would like teachers to read out loud in my classes every day.	2.60	3.30

Items	Pre-test mean scores	Post-test mean scores
19. When I read out loud, I am a very good reader	1.90	2.30
20. When someone gives me a book for a present, I feel very happy.	2.80	3.00

As can be seen in Table 3, most of the post-test mean score increased after the participants received the training. Especially the post-test mean score of Items 3, 6, 14, and 18 were higher than those of the pre-test. The result showed that the mean score of the pre-test and post-test in Item 3 increased from 1.80 to 2.70. The mean score of the pre-test and post-test in item 6 were 1.80 and 2.90, respectively. It showed that students' social involvement increased because they were more willing to share what they read with their friends more often than they used to. Besides, the finding also indicated that the mean score of the pre-test and post-test in Item 14 increased from 2.50 to 3.10. This showed that the students tended to spend more time reading. Item 18 asked how they felt when the teacher read out loud in their classes every day. The mean score of the pre-test and post-test of Item 18 were 2.60 and 3.30, respectively. The result indicated that the students were more likely to have a positive attitude towards reading.

Interestingly, the difference between pre-test and post-test scores on the items indicating the students' self-efficacy belief about reading was not large. Item 9 asks whether the students think they are good readers, and the mean score of the post-test increased from 2.00 to 2.30. Item 11 also asks if the students worry about what their friends think about their reading. The pre-test and post-test mean scores were 3.20 and 3.40. It indicated that the post-test mean score slightly increased.

However, there were 2 items in which the mean of post-test scores was lower than that of the pre-test scores: Item 4 and Item 15. The students were asked about their friends' opinions about reading in Item 4. The mean score of the pre-test and post-test of Item 4 were 2.90 and 2.80. They were asked whether reading was easy for them. The mean score of the pre-test and post-test of Item 15 were 2.40 and 2.20. It was notable that the post-test scores of those two items decreased very slightly.

According to the reflective journal that the participants wrote after the treatment, two main topics that most of the participants mentioned about their motivation to read were how they felt about reading and what they thought about CORI. The analysis of reflective journals revealed two important findings about motivation to read: intrinsic and extrinsic motivation and self-efficacy belief.

The first is intrinsic and extrinsic motivation. Students were motivated by a variety of texts and materials that suited their interests and reading levels. The students were offered an exceptional opportunity to explore and investigate hand-on activities and group work and to set their reading goals before they read. This gave them opportunities to try learned reading strategies in their reading and, most importantly, to experience reading success. The students had more positive attitudes towards reading and turned to be more motivated to read. The examples of students' comments are provided as follows:

> Student 2, "When the teacher lets me make questions before reading, I want to read more because I want to find out the answer. I really like this activity because the teacher lets me create the questions that I want to know. It is not the questions in the text. I think this is more enjoyable."
> Student 11, "The teacher tries hard to teach me because my English is very poor. She always motivates students in her class. This makes me realize that English is very important in the future because if I can read English, I can read everything in the world."

The second is self-efficacy belief about reading. The students appeared to have a sense of self-efficacy for being more capable readers in English. They were able to make use of reading strategies such as setting up reading goals before they read and making use of reading strategies to solve their reading difficulties. Interestingly, the data from the reflective journal displayed that the students had more

concentration and put more effort on reading tasks rather than quitting the reading tasks as can be seen in the following excerpts.

> *Student 4, "When I read the text, I can understand. The text that the teacher gives us is not too difficult. The teacher always provides us with the background information before we read, so I think it helps me a lot. This is the first time that I can understand what I read. I believe in myself that if I keep learning like this class, I can improve my English reading."*
> *Student 5, "The teacher always teaches me how to use the reading strategies when I do not understand the text. After I tried the teacher' suggestion, I understood the text more. This made me not to get scared of reading English texts, and I believe I can get through it."*

DISCUSSION AND CONCLUSION

The effects of CORI were noticeable on students' reading comprehension and motivation to read. First, CORI has an important role in improving struggling readers' reading comprehension. The findings in this study showed that the Thai vocational students in this study who received training in CORI were able to read better by using reading strategies. They were activated their prior knowledge before they read, trained to ask questions to establish their reading goals, searched for information, summarized, and presented the important ideas from texts in forms of graphic presentations. Activating background knowledge helped them make sense of texts better and aroused their curiosity to read texts (Vacca & Vacca, 2021). This finding is consistent with previous research studies supporting the fact that providing explicit strategy instruction helps struggling readers improve their reading comprehension (Palincsar, & Brown, 1984; Paris et al., 1984; Pressley et al., 1992; Tolongtong & Adunyarittigun, 2020).

Secondly, CORI has a positive impact on the students' motivation to read, which could be accounted for by the following. The students were provided with exceptional opportunities to experiment with the reading strategies taught in a positive and friendly learning environment. Reading activities in CORI are always done in groups. The students had a safe space where they could freely share their reading experience and the content they read in groups. Interestingly, they had plenty of opportunities to observe how their capable peers used the reading strategies and to try utilizing the strategies with assistance from peers and teachers (Vygotsky, 1978). Besides, as the vocational students were exposed to and engaged in reading interesting reading texts that were appropriate for their reading level, it is highly likely that these students, who had been equipped with effective reading strategies, would be willing to put more effort into reading English texts, be persistent in reading despite encountering reading challenges, and deal with reading difficulties strategically (Armstrong, 1983; Worthy, 1996; Schunk & Zimmerman, 1997; Wigfield, 1997). Consequently, this would affect their goal-setting. Experiencing reading achievement will definitely make these struggling readers adjust and elevate their reading goals (Wigfield, 1997).

It is notable that the post-test scores of Items 4 and 15 were a little lower than those of the pre-tests. This could be attributed to the fact that these struggling readers hardly experienced reading achievement before they joined this study. Receiving training in CORI for a short period of time must have had a slight impact on their achievement and sense of self-efficacy; however, the impact was not large enough to have a dramatic change in their motivation to read. It is very important for such students to read with a great number of readings and to experience more reading success (Wigfield & Guthrie, 1997).

It should be noted that CORI can be an alternative approach for teaching reading to help improve struggling readers' reading comprehension and motivation to read.

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Promoting Learners as Developing Practitioners in Post-COVID-19 English-Medium Instruction at a Thai International College

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ABSTRACT

The following research explores the post-COVID-19 language learning experiences of second language (L2) students learning through *English-Medium Instruction* (EMI). Using insider practitioner research, L2 students were seen as *developing practitioners* who explored their post-COVID-19 learning experiences in three key areas: well-being, lost learning, and disruptive technology. The purpose of this research was threefold; to give voice to L2 students; to explore and better understand their learning experiences; and to improve their learning development through innovative pedagogy. The *a priori* question was framed as; how can international educators improve L2 students' post-COVID-19 learning experiences? Data collection occurred during regular classroom hours through *Potentially Exploitable Pedagogic Activities*, or PEPAs (Hanks, 2017). The sampling came from students attending post-covid-19 classes at the international college, and was purposive, determined by L2 students' ability to complete the PEPAS. Subsequently, during regular classroom activities, students were given the time and space to explore their learning experiences through subjective, intersubjective, and objective phenomenological lenses. Data analysis took place throughout the research and was interpreted through content and thematic analysis. Conceptually, the PEPAs were triangulated and categorized as *first-person subjective*, *second-person intersubjective*, and *third-person objective*, which gave trustworthiness to the qualitative data. The findings indicated that post-COVID-19 difficulties could be overcome when students were given the opportunity to explore their learning experiences as *developing practitioners*.

KEYWORDS: English-Medium Instruction, Developing practitioner, Dialogical, Disruptive Technology, Student well-being

INTRODUCTION

This research delves into the language learning experiences of L2 students and explores how international teachers can assist them in overcoming post-COVID-19 challenges in an English-Medium Instruction (EMI) context. Employing insider practitioner research with a phenomenological lens, the study examined students' post-COVID-19 language learning experiences from three perspectives: *first-person* subjective, *second-person* intersubjective, and *third-person* objective. Additionally, the research drew upon the concept of inner developing practitioners, acknowledging that students can learn and grow through self-reflection on their own experiences (Hanks, 2017). Inner development is a recent concept defined as a "lifelong, ongoing process of development of human cognitive, emotional, and interpersonal capacities" (IDG, website).

However, inner development is influenced by a multitude of factors. Consequently, as documented extensively, inner development has been jeopardized by COVID-19 isolation, which has had a profound impact on education worldwide, including its effects on second language (L2) learning. As a result, L2 students returning to the post-COVID-19 classroom faced a variety of challenges, including: (i) Well-being, which was compromised due to stress and anxiety; (ii) Lost learning, where students may have missed out on learning opportunities during the pandemic, leading to gaps in their knowledge and skills; and, (iii) Disruptive technology, in which new technologies in education introduced novel learning opportunities while simultaneously disrupting and challenging students (UNESCO, 2021) (Figure 1).
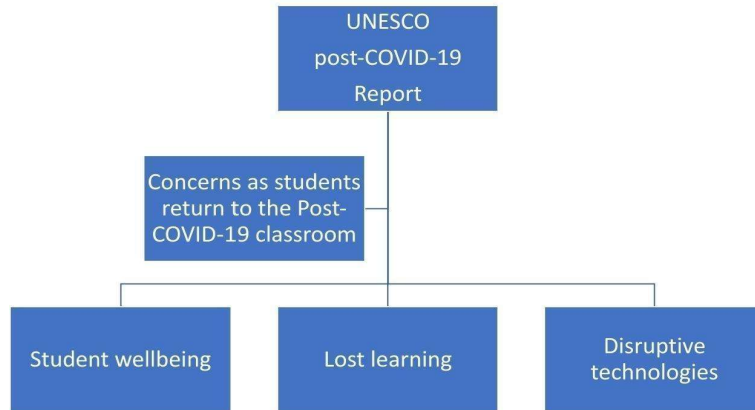
Figure 1: UNESCO's Post-COVID-19 Educational Concerns

Therefore, the purpose of this research was to gain a deeper understanding of L2 students' post-COVID-19 predicament, by providing them with the opportunity to become *developing practitioners* through the exploration of their own learning experiences. The *a priori* question posed was, what can international teachers do to assist their post-COVID-19 L2 students? The positionality of the insider practitioner enabled a qualitative approach to classroom research that gathered data from *Potentially Exploitable Pedagogic Activities*, or PEPAs (Hanks, 2017). The PEPAs were assigned in alliance with Freire's problem-posing stages (Freire, 2011) that began with a problem-posing prompt, followed by individual self-reflection, and classroom discussions that resulted with students' solutions. In addition, the PEPA's were designed according to UNESCO's digital competence frameworks and *the youth Digital Skills Indicator* that includes four digital skill domains: technical and operational (TO); information navigation and processing (INP); communication and interaction (CI); and content creation and production (CCP) (AISDL, 2021).

The research findings revealed that post-COVID-19 challenges can be overcome when students are empowered to explore their learning experiences as *developing practitioners* through disruptive technologies. This can be achieved through digital activities that encourage students to reflect on their learning, identify their strengths and weaknesses, and establish goals for improvement. The research also emphasizes the importance of fostering a supportive and inclusive learning environment where students feel comfortable sharing their experiences and learning from one another.

Overall, this research contributes to the field of *English-Medium Instruction* (EMI) by providing insights into the post-COVID-19 language learning experiences of L2 students. Furthermore, the research offers practical recommendations for international teachers on how to assist students in overcoming EMI classroom challenges.

Background

The rapid expansion of English-Medium Instruction (EMI) in Higher Education necessitates comprehensive and inclusive research. Such research can contribute to various fields, including Language Policy, Sociolinguistics, Discourse Analysis, and Critical Pedagogy. Given its social construction, EMI and the broader field of English-Medium Education demand research that employs abductive reasoning and analysis, supplemented by deduction and induction (Tavory & Timmermans, 2014).

This research adopts an interdisciplinary approach, utilizing Fully Inclusive Practitioner Research (FIPR) to explore abductively through insider research from participants navigating complex personal, cultural, and societal ambiguities at a Thai international college. The terrain is equally challenging for educators, as pedagogical and practical concerns demand a departure from traditional teaching methods. Ultimately, the researcher must balance theory, practice, and diverse perspectives. This includes examining how insider research can challenge outdated teaching practices and foster critical consciousness, while also acknowledging the significance of student voices in EME classrooms.

The Role of Language Immersion and Content-based Instruction in EMI

English-Medium Instruction (EMI) rests on two fundamental concepts: Language Immersion (LI) and Content-based Instruction (CBI). Language Immersion advocates for surrounding L2 students with authentic language opportunities to enhance Basic Interpersonal Communication Skills (BICS), while Content-based Instruction is crucial for developing Cognitive Academic Language Proficiency (CALP) (Cummins, 2000).

However, within International Education, each college fosters a unique community of speakers, whose diversity creates a challenging interlanguage community tailored to the needs of local, non-English speaking environments that lack adequate opportunities for interlanguage and intercultural communication. Consequently, student English language development and semiosis require special attention and awareness to signs, objects, and interpretants, which are essential for conveying meanings within communities of inquiry (Peirce, 2011). Generally, these communities of inquiry rely on shared experiences established through authentic and dynamic daily interactions (Peirce, 2011).

In addition to Exploratory Practice, a phenomenological lens was employed to investigate second language (L2) students' post-COVID-19 classroom learning experiences, aiming to improve three key areas identified by UNESCO: well-being, lost learning, and disruptive technology (UNESCO, 2021). Subsequently, *Fully Inclusive Practitioner Research* (FIPR), a form of IPR designed specifically for L2 students, was utilized to explore students' post-COVID-19 language learning experiences as developing practitioners at a Thai international college.

RESEARCH OBJECTIVES

The initial focus of this research was on L2 classroom pedagogy; however, it became evident that post-COVID-19 L2 classrooms were qualitatively different from before. Some L2 students who demonstrated limited English proficiency before the lockdown were reluctant to attend class regularly and were demonstrably uncomfortable in class. After initial exploration, it was discovered that UNESCO had done considerable research in this area and had determined three key areas that teachers should be concerned with when students returned to the classroom: their well-being, lost learning, and the effects of disruptive technology (UNESCO, 2021). However, as the research developed, it became clear that these three key areas could be viewed from an ecological or holistic perspective, as first discussed by van Lier in his 1996 book *Interaction in the Language Curriculum: Awareness, Autonomy and Authenticity*. This book was published around the same time that Allwright was conducting research with non-native English instructors in Brazil.

Given my own research interests and my dissertation based on Allwright's works, I sought ways to combine these areas with my own research interests. In accordance with viewing L2 students as developing practitioners, the following three research objectives were identified:

(i) Giving voice to L2 students struggling with post-COVID-19 EMI
(ii) Exploring and better understanding their learning experiences as developing practitioners
(iii) Promoting digital literacy development

LITERATURE REVIEW

Guided by Allwright's concept of developing practitioners, this literature review explores the impact of the COVID-19 pandemic on education, particularly for L2 students in English-medium instruction (EMI) settings. Drawing upon the UNESCO report, the review identifies key areas of concern for post-pandemic education recovery, including student well-being, learning loss, and the integration of disruptive technologies (UNESCO, 2021). To address these challenges, the review proposes a three-pronged strategy: tailored services to meet students' diverse needs, effective remedial learning strategies to recover lost learning, and comprehensive teacher training in technology-integrated EMI teaching approaches. By adopting Allwright's framework of continuous learning and reflective practice, teachers can effectively support L2 students in navigating the post-pandemic educational landscape (Allwright & Hanks, 2009).

Theoretical and Conceptual Framework

In order to view L2 students as developing practitioners, it is essential to adopt a theoretical framework informed by an ecological worldview (van Lier, 2014), Embodiment (Thompson, 2010), and Exploratory Practice (Allwright & Hanks, 2009: Hanks, 2017). These approaches emphasize the importance of a holistic understanding of L2 students' learning experiences, recognizing their ability to critically reflect and transform. Freire's work further highlights the significance of empowering marginalized communities to actively participate in the research process, fostering critical consciousness, and promoting social transformation (Freire, 2011).

Reconceptualizing language learning in the post-COVID-19 classroom requires a shift away from viewing language as a static code and towards a dynamic process embedded in social and cultural contexts. This means seeing language learning as a process of becoming an active participant in the target language culture. Additionally, shifting the focus from individual achievement to collaborative learning involves creating opportunities for students to interact meaningfully with each other as members of the target language community. To achieve these shifts, teachers should adopt an approach based on the principles that: (i) language learning is a social and cultural process, (ii) language learning is a holistic process, and (iii) language learning is a transformative process (Johnson, 2004).

Dialogical classrooms are generally considered to promote the types of learning that can help overcome the effects of COVID-19 lockdowns (Johnson, 2004). However, this requires a reconceptualization of the interaction between L2 performance and L2 competence, reflecting local sociocultural contexts and how learning experience and prior knowledge can lead to intentional transformation. Essentially, learning activities should utilize the inner, other, and outer components that are keys for social and emotional learning in organizations (Goleman & Senge, 2014). Moreover, an experiential approach that is dialogic, reflective, and transformative is also found in progressive or integrative education, which is finding a resurgence (Kolb & Kolb, 2017).

Insider Practitioner Research

When exploring complex phenomena like language learning, it's crucial to acknowledge the cumbersome nuances and complexities that arise when reconceptualizing variables and indicators as measurable outcomes. This is particularly overlooked in education, where grades often oversimplify the intricate process involved in learning. However, *Insider Practitioner Research* (IPR) offers a valuable approach that empowers educators to delve into the depths of student learning experiences, recognizing them as active processes of meaning-making rather than passive receptions of stimuli.

To effectively capture the essence of student learning experiences, four key concepts can be employed: intentionality, lifeworld, embodiment, and temporality (Thompson, 2010). *Intentionality* can refer to the purposeful engagement of learners in the learning process while the *Lifeworld* may encompass the cultural and social contexts that shape learners' experiences. Moreover, *Embodiment* can highlight the role of embodied technology in understanding and interacting with the 21st Century. Finally, *Temporality* acknowledges the dynamic nature of learning, unfolding over time from intentional and integrated teaching strategies. Together, these concepts provide a comprehensive framework for understanding the complexities of student learning experiences.

Accordingly, adopting a process-oriented approach to qualitative research can help overcome the complex challenges, but requires guidance. Exploratory Practice (EP) is a widely recognized form of Insider Practitioner Research specifically tailored for L2 classrooms. EP conceptualizes L2 classroom problems as nuanced puzzles, viewing them as inherent aspects of English-medium instruction. Allwright and Hanks, in their book "The Developing Language Learner: An Introduction to Exploratory Practice," suggest that L2 curriculums may rely on generic instructional materials, neglecting the importance of context and the individual learner (Allwright & Hanks, 2009). This oversight leads to problems in L2 classrooms as teachers fail to recognize students as *developing practitioners*, where the practice itself is the process of learning and developing English proficiency (Allwright & Hanks, 2009).

Addressing these challenges requires an ecological worldview that underscores the interconnectedness of students, teachers, the classroom environment, and the external world (van Lier, 2014). Arguably, the COVID-19 pandemic has dramatically transformed the L2 classroom environment, making an ecological perspective even more essential. Subsequently, it's time to move beyond viewing *English-medium instruction* as teacher-student knowledge transmission, and embrace a process-oriented approach that is dynamic and interactive, where all participants actively contribute to student well-being, lost learning recovery, and disruptive technology integration.

Insider practitioner research (IPR) offers a promising approach to support ESL students in the post-COVID-19 era. IPR empowers practitioners to conduct research within their own classrooms, leveraging their unique insights into student needs and classroom dynamics. IPR can explore a wide range of topics, including effective teaching strategies, student learning needs, and classroom culture, offering several benefits for post-COVID-19 ESL instruction such as:

(i) Understanding Student Needs: IPR enables practitioners to gain a deeper understanding of their students' specific needs, challenges, and opportunities. This information can then be used to tailor teaching and learning experiences more effectively.

(ii) Reflective Teaching Practice: IPR encourages practitioners to reflect on their teaching methods and their impact on students, identifying areas for improvement. This reflective practice leads to more engaging and effective teaching approaches.

(iii) Collaborative Professional Community: IPR fosters a collaborative and supportive professional community by sharing research findings among practitioners, collectively building knowledge and expertise in ESL education, ultimately benefiting all ESL students.

Addressing the Research Objectives

As mentioned above, the three research objectives included concepts related to students' well-being, lost learning, and disruptive technology. After conducting the Literature Review, it was decided to revise the three objectives as concepts related to phenomenology: *Intentionality*, the *Lifeworld*, *Embodied technology*, and *Temporality* (Figure 2).
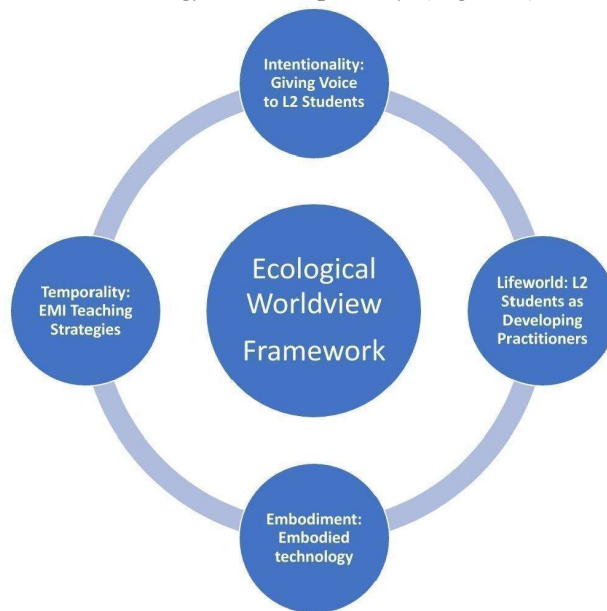
Figure 2: Ecological Worldview

Intentionality: Giving Voice to L2 Students

The concept of students as *developing practitioners* was introduced by Allwright in his book, "The Developing Language Learner: An Introduction to Exploratory Practice" (Allwright & Hanks, 2009). In this work, Allwright and Hanks draw upon the ideas of several educationalists who advocate for student

empowerment, including Freire, Celce-Murcia, and Nunan (Allwright & Hanks, 2009; Hanks, 2017). Hanks further expands on this concept in his subsequent research, emphasizing the contributions of other prominent educationalists such as Cummins and Manen, who emphasize the importance of giving students a voice (Hanks, 2017).

Aligned with Freirean philosophy, education should be a process of dialogue and empowerment, where students are actively engaged in their own learning, and participate as collaborators in research (Freire, 2011; Hanks, 2017). In the context of second language learning, Freirean ideas suggest that students should be provided opportunities to explore and express their experiences, fostering their growth as *developing practitioners*, as termed by Allwright and Hanks (Allwright & Hanks, 2009).

In addition, Celce-Murcia and Olshtain advocate for giving L2 learners a voice to promote their development as autonomous learners (Celce-Murcia, 1995). Autonomous learners possess the ability to take ownership of their own learning, set their own goals, and monitor their progress. Empowering students with a voice can facilitate the development of these skills by providing them with opportunities to make choices about their learning, reflect on their experiences, and seek assistance when needed.

Moreover, Nunan further emphasizes the significance of giving students a voice in fostering their pedagogical competence, along with the concept of Language Awareness, which entails the ability to reflect on and evaluate one's own learning experiences (Nunan, 1994). Nunan argues that providing students with a voice can contribute to the development of these abilities by offering them opportunities to discuss their learning, identify their strengths and weaknesses, and establish goals for the future. Finally, Cummins highlights the importance of giving students a voice in developing their cultural competence, which refers to the ability to understand and appreciate diverse cultures (Cummins, 2000). Cummins maintains that providing students with a voice can promote the development of this ability by offering students opportunities to express their own views and values, learn about other cultures, and engage in dialogue with individuals from different backgrounds.

Lifeworld: L2 Students as Developing Practitioners

Several prominent second language theorists have emphasized the significance of exploring the phenomenological lived experiences of ESL students. These theorists posit that understanding the subjective experiences of ESL learners provides valuable insights into their language learning processes, challenges, and motivations. Nonetheless, it is important to first mention three key phenomenologists. First, Edmund Husserl, the founder of phenomenology, asserted that we perceive the world solely through our subjective experiences. He advocated for focusing on the "Lebenswelt" or "lifeworld" of individuals to comprehend their unique perspectives (Thompson, 2010). Second, Martin Heidegger, a student of Husserl, further developed the concept of Dasein, referring to the "being-there" of individuals in the world. Heidegger believed that understanding Dasein requires examining its lived experiences (Ibid, 2007). Finally, Maurice Merleau-Ponty, a French philosopher, integrated phenomenology with embodiment who maintained that our bodies are not simply objects in the world but rather the means through which we experience it (Ibid, 2007).

In addition, educators like Paulo Freire and Max van Manen also embraced phenomenology to enhance pedagogy (Hanks, 2017). Freire, a Brazilian educator, developed a critical pedagogy that emphasizes understanding the lived experiences of oppressed people, believing education can be a tool for social liberation. Van Manen, on the other hand, endorsed hermeneutic phenomenology, emphasizing the importance of interpretation and understanding in the learning process (Hanks, 2017).

Embodiment: Developing Digital Literacy

In the age of technological advancement, technology has become an integral part of our lives, with its influence extending to the realm of education. Disruptive technology, though often perceived negatively, is viewed as an inevitable force that will ultimately improve our lives. In the context of second language learning, several prominent theorists have advocated for the cultivation of digital literacy among L2 students (Magana & Marzano, 2017),

Stephen Krashen, a renowned scholar in the field of second language acquisition (SLA), stands as a notable proponent of digital literacy for ESL students. He underscores the need for ESL students to develop their digital literacy skills to effectively access the vast array of information and resources available online. Krashen firmly believes that digital literacy can significantly enhance ESL students' reading, writing, and communication skills (Krashen, 2023).

Joining Krashen in their emphasis on digital literacy are the teams of Celce-Murcia and Brinton, as well as Warschauer and Healey (Warchauer & Healey, 1998). Celce-Murcia and Brinton, having extensively advocated for integrating technology into ESL instruction for years (Celce-Murcia, 1995). They believe that technology can create engaging and interactive learning experiences, fostering critical thinking and problem-solving skills among ESL students. Similarly, Warschauer and Healey's research on the impact of technology on ESL learners reveals that regular technology usage enhances motivation and increases the likelihood of achieving language learning goals (Warchauer & Healey, 1998).

This growing incorporation of technology into ESL curriculums further underscores the importance of digital literacy. Chapelle, an SLA researcher who studied the use of online learning environments for ESL instruction, found that online learning can be an effective delivery method, particularly for students in remote areas or with busy schedules (Warchauer & Healey, 1998).

The benefits of developing ESL students' digital literacy are multifaceted. Enhanced access to information and resources, improved communication and collaboration, increased motivation and engagement, and preparation for the future are just a few of the advantages. The consensus among second language theorists and practitioners is clear: digital literacy is an essential skill for ESL students, enabling them to excel in their English language learning journey and prepare for success in the 21st century.

Temporality: EMI Teaching Strategies

The concept of temporality plays a crucial role in shaping our experiences of the world. It influences our judgments, perceptions, and self-identity, particularly in the context of language learning. For L2 students, temporality can be particularly challenging as they grapple with their evolving identity and the possibility of achieving proficiency in a second language.

To enhance international education and classroom practices, instructors may explore the latest literature that reconceptualizes language teaching as a natural inclination embedded in individual, intersubjective, and collective activities (Tomasello, 2021). According to Tomasello, a cognitive psychologist, language acquisition follows a usage-based framework that emerges from individual experiences that normalize linguistic communication within a community (Tomasello, 2021). Tomasello's usage-based approach counters traditional approaches that view communication as a closed system by disregarding experiential phenomenon (Johnson, 2004). Consequently, traditional teaching approaches have relied on Chomsky's nativist language theory which is centered on human mental processes and structure (Ibid, 2008). As a result, language is considered *nomothetic*, or rule-based, rather than being an emergent product of communication (Johnson, 2004). A new generation of cognitive linguists, such as Lakoff and Mark Johnson (1999), Tomasello (2021), and Marysia Johnson (2004), would most likely consider rule-based language teaching as counterproductive to natural language acquisition and development.

On a psychological level, Tomasello views the differences between apes and humans through the evolutionary process, with humans having developed powerful learning mechanisms and linguistic competencies within their complex environments that contribute to language acquisition and development (Tomasello, 2021). These mechanisms and competencies are regularly integrated with intention-reading skills such as *shared attention*, enabling children to adapt and acquire a functional element of linguistic communication (Tomasello, 2021). These qualities have evolved alongside other characteristics such as precise hand movements, tongue movements, reflective consciousness, and conceptual thought, which today are merged into more complex processes of human communication that allow students to learn and develop from their everyday experiences. Viewed from an evolutionary perspective, it follows that language teaching should as well.

Therefore, language emerges as an *interlanguage* while developed through Dialogic and Experiential Learning (Kolb & Kolb, 2017). To envision this, teachers must adopt a new perspective on teaching. According to Varela et al., new sciences of mind should encompass lived experience and transformation (Varela, et al., 2014). In this sense, the science of phenomenology overlaps with ethnography, or what has been called ethnomethodology, in which participants navigate the everyday world in which they live (van Manen, 1997). Seen through this lens, communication fundamentally requires intent, intersubjectivity, and cooperation. Cooperation, according to various philosophers of action, is seen as shared intentionality or "we-intentionality" (Tomasello, 2021). Shared intentionality encompasses joint goals, intentions, commitments, and shared knowledge (Ibid, 2021). In combination, these prelinguistic human skill sets are responsible for the evolutionary origins of human communication, or what Tomasello calls the "cooperative infrastructure of human communication" (Tomasello, 2021).

These characteristics were further developed during the axial age when prophets emphasized the importance of compassion and the *golden rule*. Formed within family, friendships, and community, *joint commitments* are areas that can be replicated in intercultural classrooms. Therefore, it is understandable that becoming proficient in English requires more than what classroom instruction alone can offer. Language proficiency demands *language awareness*, *communicative intentionality*, and the willingness to communicate with someone who does not speak your native language.

While second language learning can be a natural inclination for some, for others, it resembles rote memorization. Nevertheless, it is crucial for the field of second language acquisition (SLA) to move beyond rational frameworks and become more dialogic (Johnson, 2004). As the field of SLA evolves, from first generation cognitive science to third generation cognitive science, so too must our understanding of language acquisition. With new influences from neuroscience, social cognition, and embodied cognition, our understanding of language has significantly changed since the 1960s and 1970s. No longer do we consider the target language as the ultimate goal but rather the ability to communicate effectively.

To effectively foster language learning, we must view the classroom as a sociocultural setting where active participation in the target language culture is taught, promoted, and cultivated. The classroom should closely reflect external sociocultural and institutional realities, and we must avoid creating artificial social contexts that do not resemble the external world. In the 21st century language classroom, we would be expected to create for each student a Zone of Proximal Development in which, dialogical interactions, diverse voices, and different speech genres are common occurrences (Vygotsky, 1978).

METHODOLOGY

To investigate L2 students as developing practitioners, this research employed a qualitative methodology grounded in the principles of Exploratory Practice (EP). L2 students were allotted ample time and space to engage in Potentially Exploitable Pedagogic Activities (PEPAS) (Hanks, 2017). These PEPAS incorporated developmental activities reminiscent of Freire's problem-posing approach, fostering personal reflection and in-class discussions (Freire, 2011). As language learning and development are inherently student-driven, L2 students become practitioners of their own language learning journeys. In this role, developing practitioners are empowered to voice their experiences and actively engage in the unfolding process of language development. It is crucial to remember that PEPAS are integral to a process-oriented approach. The value of this methodology lies in its emphasis on the process itself, rather than focusing on specific outcomes. Data collection and analysis are, therefore, primarily concerned with understanding the process of language development.

DATA COLLECTION

To gather data from Potentially Exploitable Pedagogic Activities (PEPAS) (Hanks, 2017), a process-oriented, qualitative approach was employed. Data collection and analysis took place during regular classroom hours while students engaged in PEPAS as developing practitioners (Hanks, 2017). Purposive sampling was used to select L2 students who were capable of completing the PEPAs. In order to protect anonymity and privacy, the specific courses involved are not disclosed.

During regular classroom assignments, students were given time and space to explore their learning experiences through problem-posing, student reflection, and classroom discussions. These interactions were recorded using digital classroom technology, such as Google Classroom, Miro, Canva, and other related applications. Additionally, Freire's problem-posing method was extensively utilized, involving the presentation of a "prompt" followed by stages of reflection, dialogue, and application (praxis) (Freire, 2011). Problem-posing served as a collaborative process, enabling students to assume the role of developing practitioners.

The researcher's positionality as an inside practitioner facilitated a process-oriented, qualitative approach to classroom research that gathered data from PEPAs. Data collection and analysis occurred during regular classroom hours while students participated as developing practitioners (Hanks, 2017). Purposive sampling was employed, selecting L2 students who demonstrated the ability to clearly and coherently complete the subjective, intersubjective, and objective tasks. The sampling was conducted in post-COVID-19 classes at the international college and was based on L2 students' ability to complete the PEPAs. For the sake of anonymity and privacy, the specific courses involved are not mentioned.

Throughout regular classroom assignments, students were provided with time and space to explore their learning experiences as they engaged with the classroom content. This exploration typically occurred through problem-posing, student reflection, and classroom discussions, and the interactions were recorded using digital classroom technology such as *Google Classroom*, *Miro*, *Canva*, and other related applications. Moreover, a significant portion of the data was collected through Freire's problem-posing method, which consisted of presenting students with a problem-centered "prompt", followed by stages of reflection, dialogue, and application, or praxis (Freire, 2011). Problem-posing was utilized as a collaborative process that empowered students to take on the role of developing practitioners (Figure 3).
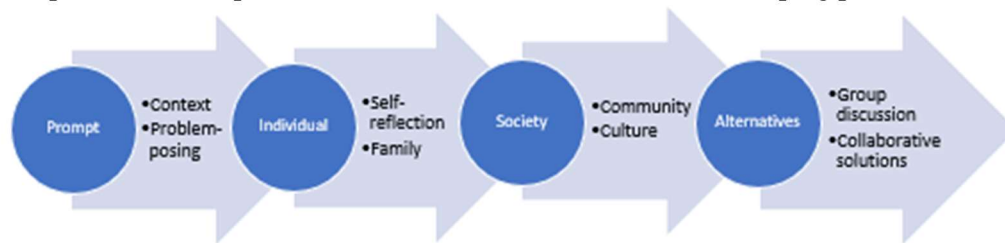
Figure 3: Problem-posing as Data Collection

DATA ANALYSIS

Data analysis began as soon as students uploaded their PEPAs to Google Classroom, aiming to gain a deeper understanding of their learning experiences. The data was initially organized by categories and themes related to the ecological worldview (Figure 2), resulting in in-depth descriptions, understandings, and interpretations that provided insights into the subjective experiences, perspectives, and meanings of the participants.

Next, the data was further analyzed in relation to the research objectives and questions. Initially, it was viewed through a phenomenological lens, as students began to explore their learning experiences as developing practitioners. Categories were initially organized according to the problem-posing PEPAs, such as prompt, individual, society & culture, and alternative solutions, in accordance with the problem-posing stages (Figure 3). Additionally, the categories were organized as *First-person* subjective, *Second-person* intersubjective, and *Third-person* objective (Figure 4).

The data analysis emphasized themes of *quality of life*, *lost learning*, and *digital disruption*. Data was analyzed as a process in which language learners became developing practitioners exploring their learning experiences. First, data was analyzed as a process of personal reflection, development, and transformation. Second, data was analyzed as a process of critical thinking in which students engaged in classroom discussions. Third, data was analyzed objectively from observations, and formative and summative assessments which could be related to the research objectives, theories, and concepts.

In addition, data was analyzed from a language development perspective, guided by Tomasello's usage-based language theory and his Shared Intentionality Hypothesis (Tomasello, 2021). Usage-based language theory postulates that language is learned through interaction and use. Moreover, the Shared Intentionality Hypothesis posits that humans have a natural capacity to cooperate and coordinate their actions with others. Therefore, using Freire's problem-posing, students not only reflected on the context at hand but also demonstrated critical thinking and collaboration to present alternative perspectives.

The research design, based in part on Freire's Participatory Action Research (PAR), was fluid and allowed for classroom experiences and interpretations. PAR is an actionable research cycle that involves planning, acting, observing, and reflecting (Freire, 2011). The rigorous and comprehensive data analysis process yielded valuable insights into students' learning experiences. The use of multiple perspectives and data sources allowed for a deeper understanding of the data, and the analysis was guided by relevant theory. The findings of this study can inform future research and practice in language education (Figure 4).
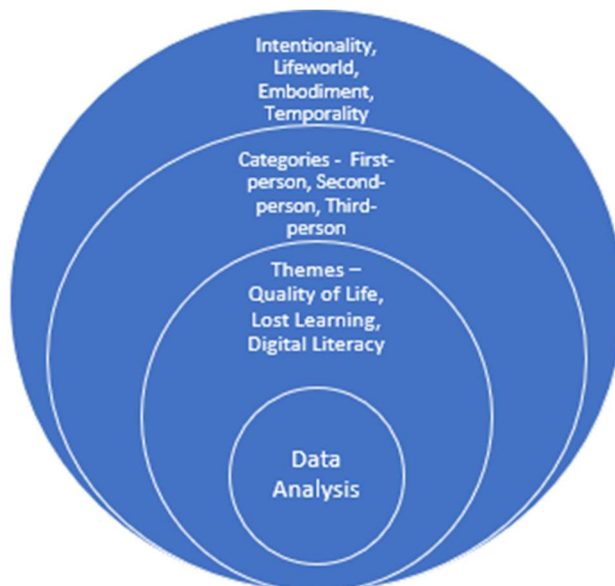
Figure 4: Holistic Data Analysis

RESULTS

After extensive analysis and synthesis, the results were interpreted through a multi-step process:

(i) Theme Identification: Quality of life, lost learning, and disruptive technology emerged as the overarching themes.

(ii) Category Identification: The categories were classified as first-person subjective, second-person intersubjective, and third-person objective to capture the diverse perspectives.

(iii) Synthesis with Theoretical Framework: The themes and categories were synthesized with the key concepts of intentionality, lifeworld, embodiment, and temporality to provide a deeper understanding of the findings. In particular, the synthesis highlighted the importance of students' evolving identities as "being and becoming" and their role as "developing practitioners."

Freire's problem-posing method proved to be an effective tool in fostering engagement and language development. Initially, upon returning to the classroom post-COVID-19, students exhibited reluctance to participate and a general lack of engagement. Their English proficiency levels were also fragmented, indicating lost learning. The introduction of new technologies further exacerbated the situation, as students displayed a fixed mindset, preferring familiar technologies and engaging in individual discussions rather than collaborative learning.

Through problem-posing, students gradually began to respond positively, recognizing the opportunity for self-reflection, cultural reflection, and diverse perspectives. Their initial non-communicative intentionality transformed as they actively engaged in the problem-posing stages. Fear of making mistakes was identified as a major factor hindering their use of English in social settings. Additionally, the results revealed that class activities were often decontextualized and lacked opportunities for meaningful communication. This, along with fear, contributed to fragmented friendships and limited engagement with the English-speaking community.

DISCUSSION AND CONCLUSION

This qualitative research study explored the post-COVID-19 language learning experiences of second language (L2) students learning through *English-Medium Instruction* (EMI). The study employed an insider practitioner approach, positioning L2 students as developing practitioners who actively engaged in reflecting on their post-COVID-19 learning experiences. The research focused on three key areas: well-being, lost learning, and disruptive technology, with the aim of giving voice to L2 students, enhancing understanding of their experiences while engaging disruptive technology.

Data collection involved the use of *Potentially Exploitable Pedagogic Activities* (PEPAS) during regular classroom hours. The sampling was purposive, selecting L2 students based on their ability to participate in PEPAS. Throughout regular classroom activities, students were provided opportunities to explore their learning experiences through subjective, intersubjective, and objective phenomenological lenses.

Data analysis was conducted throughout the research using content and thematic analysis. The PEPAs were triangulated and categorized into three perspectives: first-person subjective, second-person intersubjective, and third-person objective. This triangulation strategy enhanced the trustworthiness of the qualitative data.

The findings revealed that L2 students faced significant challenges in their post-COVID-19 language learning journey, including disruptions to well-being, perceived losses in learning, and difficulties adapting to disruptive technologies. However, the study also highlighted the resilience of L2 students and their ability to overcome these challenges when given the opportunity to actively engage in reflecting on their experiences and developing their own learning strategies.

The study concludes that insider practitioner research, which positions L2 students as developing practitioners, holds significant potential for improving post-COVID-19 language learning experiences. By providing opportunities for students to voice their experiences, explore their learning processes, and develop their own pedagogical insights, international educators can foster a more responsive and student-centered approach to language learning, ultimately enhancing student engagement, motivation, and overall learning outcomes.

Implications for Future Research

This study's findings open up avenues for further research in the field of EMI and L2 language development. Future studies could explore the impact of different teaching methodologies on L2 students' communicative intentionality, investigate the role of technology in enhancing EMI classroom experiences, and examine the effectiveness of various teacher training programs in preparing educators for the complexities of EMI contexts. In addition, research can investigate the intricate relationship between communicative intentionality, language learning, and development within the context of an *English as a Medium of Instruction* (EMI) classroom. Such research would include Tomasello's usage-based language theory and the *Shared Intentionality Hypothesis* (Tomasello, 2021). This could lead to more enabling and dialogic classrooms atmosphere that are characterized by critical consciousness which is more conducive for communicative intentionality to flourish. However, the transition from autocratic or overly permissive classrooms to dialogic ones can be challenging, especially for students lacking strong Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) (Cummins, 2000).

In conclusion, this insider practitioner research has contributed to a deeper understanding of the intricate dynamics between communicative intentionality, language learning, and development in EMI classrooms. By emphasizing the importance of a dialogic and enabling learning environment,

reconceptualizing the English language journey as an Interlanguage process, and promoting teacher training and professional development, the study offers valuable insights for enhancing the EMI experience for L2 students worldwide, underscoring the importance of teacher training and ongoing professional development in EMI contexts. Teachers equipped with the necessary skills and knowledge can effectively navigate the challenges of EMI classrooms and foster a supportive environment for L2 students' communicative intentionality, language learning, and development.

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Revolutionizing Basic Education: Challenges of Federal Education in Myanmar

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ABSTRACT

Myanmar's education system lags far behind in the world. Myanmar today has unqualified teachers, very few resources, and aging materials especially a centralized education system with inadequate infrastructure and unqualified teachers (Lwin, T., 2007). This affects accessibility for marginalized children such as children with disability and children living in conflict areas. The contents of school textbooks are also not culturally acceptable for ethnic minorities. The education system could not fulfill the wants and needs of society, especially the skills that are needed for work. The education reform was initiated under the NLD government from 2015 to 2020 and following the coup that happened on 1st February 2021, along with the political revolution and transition demanding federal democracy, the education sector reform that is relevant to federal democracy principles is accompanying. This research aimed to explore challenges in this process of implementation to formulate and state education policies that could reflect the needs and challenges faced by the implementers during federal education reform during and post-revolution in Myanmar. The methodology was qualitative by using focus group discussions with the (15) implementers (teachers) across states and regions of Myanmar and key informant interviews with (1) policymaker who are working in the education sector, (2) ethnic groups' education policy makers and (1) basic education expert. The implementers and policymakers highlighted the challenges mainly on the budget and infrastructure support, curriculum, language (ethnic mother languages among diverse communities), human resources, and quality assurance while reforming the education sector in the federal democratic government.

KEYWORDS: Federal education reform, challenges, implementers, policymakers, basic education

LISTS OF ABBREVIATIONS

CDM - Civil Disobedience Movement
CESR - Comprehensive Education Sector Review
CSOs - Civil Society Organizations
EROs - Ethnic Revolutionary Organizations
FDC - Federal Democracy Charter
MoE - Ministry of Education
NLD - National League for Democracy Party
SDG4 - Sustainable Development Goal 4
UNDP- United Nations Development Programme

INTRODUCTION

Myanmar's education system lags far behind in the world. Myanmar today has limited skillful teachers, very few resources, and aging materials, especially a centralized education system with inadequate infrastructure, budget, and teaching materials. This affects accessibility for marginalized children such as children with disability and children living in conflict areas. The contents of school textbooks are also not culturally acceptable for ethnic minorities. The education system could not fulfill the wants and needs of society, especially the skills that are needed for work. Poor quality of education has been an impact of military rule since March 1962. Since then, the regime has exercised a centralized education system. There is a lack of inclusive education. Myanmar's education system is centralized in curriculum and also uses

standardized textbooks for all schools throughout the country. Therefore, children such as children with disabilities, children of poor family backgrounds, children living in conflict areas, and language minorities have been facing difficulties getting schooling. Besides, the school curriculum fails to promote skills, which are needed for the world of work as well as for their social welfare (Lwin, T., 2007).

Indigenous languages and local wisdom do not have a chance to be used and taught at schools. The language policy applied by the military regime has been to "Burmanise" the language and culture of other indigenous nationalities. In other words, it seeks to assimilate in the name of national unity (Lwin, T., 2007). Some ethnic languages were allowed to be taught after school hours under the provision of the former President U Thein Sein government. The system does not promote the teaching profession. The quality of teaching and learning is very low in government schools. It emphasizes rote learning and an exam-based system. The education budget in Myanmar is very low. The National Education Strategic Plan was published in 2017 and based on the Comprehensive Education Sector Review (CESR) done by the previous (2010–2015) government. However, the national plan has various weaknesses in addressing the needs of students, teachers, and marginalized groups in the country, and the global initiative of Sustainable Development Goals No. 4 (SDG4). It has a lack of consideration of Indigenous Rights to Education such as recognizing schools established by indigenous groups, their local curriculum, and mother tongue-based multilingual education system, their local curriculum, and mother tongue-based multilingual education system (Lwin T., 2021).

Myanmar protesters had chanted that they wanted a federal democracy. Even before the 2021 revolution, Myanmar Civil Society Organizations (CSOs) especially from ethnic areas were demanding reform towards an education system that ensured the teaching of local language, and curricula that include ethnic history and culture (BNI Media Group, 2017). That is theoretically a federal education system. Ethnic-based education providers have long been pleading for the education system to provide full authority to local people, not the centralized one. These demands are not just demanding in the current revolution; they have become the process of developing a system. Reforming an education system from a deep-rooted centralized one during a civil war is challenging. When the opposition groups formed the National Unity Government (NUG), they put the education department in the government and ran an underground online school system for junta control areas and helping schools in Ethnic Revolutionary Organizations (ERO) controlled areas.

Federal Democracy Charter Part - I, Chapter 4, Section III, The Foundational Policies for Building the Federal Democratic Union, Social Rights state that every citizen of the Federal Democratic Union has freedom of education and can freely choose in higher education, technical know-how, vocational education of his choice, and free access to compulsory basic education. The mother tongue-based education of ethnic peoples shall be implemented by the self-determination of the federal unit. Federal democratic education shall be practiced. Federal democratic education must be practiced and the establishment of private schools, universities, and science and vocational schools must be guaranteed by the laws. In FDC Part - I, Chapter 5, Pledge, Effective policies shall be initiated for Universal Education accessible to everyone and Mother-Tongue-Based Education system. There is no detailed mention of the education sector in the Federal Democratic Charter (FDC, 2021). There is currently a global path to decentralization education that is experimenting and/or thinking about some form of federal education. These processes involve a centralized Ministry of Education, decision-making authority is transferred to communities and schools. In the decentralized education systems, strong theoretical equity, strong political commitment, and leadership are needed for the process to succeed. It depends on the initial Country and sector situation and the interactions of the key coalitions within the sector. The reforms and policies are often decided at the central level rather than at the regional, municipal, or school level. The expectation in this top-down process is that school-level actors, particularly principals and teachers, and policymakers will transform policy intentions and goals into real outcomes. In the basic education sector, such targeted outcomes typically include more effective learning environments for students and a better match between skills supply and demand. The main objective of the study was to understand the challenges in this process of implementation to formulate and state education policies that could reflect the needs and challenges faced by the implementers by group discussion with policy makers and implementers of education sector. Understanding the challenges will

highlight the practical and context reflective approaches and solutions to the attainment of initiation of federal education system along with the political transition in Myanmar.

OBJECTIVE
- To reflect the system and practices of the centralized education system
- To prospect the future federal education system and practices
- To explore the challenges of policymakers and implementers of basic education sectors in reforming the federal education system in Myanmar.

THEORETICAL BACKGROUND
Centralized Education System

A uniform approach to the teaching and learning process will limit the ability of local teachers who cannot create curriculums that are tailored to local needs, traditions, and cultures. Annick M. Brennen, 2002 stated that,

"The concepts of centralization and decentralization are important ones to consider as they ultimately affect the effectiveness of schools in educating the children of a nation. Centralization refers to the condition whereby the administrative authority for education is vested, not in the local community, but in a central body. This central body has complete power over all resources: money, information, people, and technology. It decides the content of the curriculum, controls the budget, is responsible for employment, the building of educational facilities, discipline policies, etc."

Since 1962, military rule has damaged the quality of Myanmar's Education. The centralized education system has been exercised by successive governments. After that, the education system could not cover the marginalized children including primary students in conflict areas, minor ethnicities, and native indigenous language teaching. The school management, uniforms, textbooks, and curriculum are the same all over the country. The language policy of the current education system reflects the hidden Burmanization agenda of the regime. The education budget is very low and centralized in the allocation process (Lwin, T., 2021). In the Myanmar centralized education system, the government's central ministry always sets the targets and the local officials have to implement them to get targeted outcomes, which may lead to difficult situations if the targets are not impossible to implement in the local context. In the centralized management system, personal relationships are integral to power dynamics (Zobrist & McCormick, 2013).

Federal Education System

The principle of subsidiarity is one of the main characteristics of federalism. Ronald L. Watts stated the definition of the Federal political system as

"*A formal constitutional distribution of legislative and executive authority and allocation of revenue resources between the two orders of governments ensuring some area of genuine autonomy for each other*" (Watts, 1996).

So, two or more layers of authority are exercising their power for administration including education. Watts also added that the Federal political system is also the process and institution for intergovernmental relations in which common responsibilities are negotiated and cooperated (Watts, 1996, p. 7). Unlike the unitary governmental system, the authority of the Education administration will be under the management of the regional government in the federal system (Wong, Knupling, Kolling, & Chebenova, 2017). When public education is implemented in a federal system, many examples from federal states have shown that much intergovernmental collaboration is needed, as mentioned in Watt's definition of the federal system, rather than different educational systems from federal units.

According to many research findings, decentralization in education can bolster the achievement of students in their learning. The education systems around the world are reforming to decentralized systems from centralized ones. Decentralized education systems of federation states vary from each other. Power sharing between center and regional governments about legislative framework for education, drafting of

curricula, benchmarking for accountability, accreditation, teacher training, and administrative role in basic education are different among countries that are using federalism (Wong, Knupling, Kolling, & Chebenova, 2017).

In a federal education system, the responsibilities are shared between layers of government vertically and horizontally. Without losing the right to self-determination, a common educational standard for the whole federation has to be established. For example, in the Swiss education system, although the Cantons have self-rule for basic education, but the educational quality and progress report has to be developed by cooperation with the confederation government every fourth year by setting standardization. However, some communes resist central standardization because they strongly uphold their autonomy. In Germany, education quality assurance standards are decided by the forum of education ministers from all Landers (states) of the federation. That is an example of horizontal cooperation in the federal education system (Wong, Knupling, Kolling, & Chebenova, 2017).

Reforming an education administrative structure from a deep-rooted centralized system to a federal education system will take time. A good example is Spain which was reformed from the centralized Franco regime, federalization of the Spanish experience will be presented as a case study country. Austria, which had practiced a centralized education system under the Austro-Hungarian Empire developed a sort of hybrid system in which the center and region together control the education after decentralizing (Wong, Knupling, Kolling, & Chebenova, 2017). In federal education systems, the constitutional and legislative frameworks of all layers of government are important in the structure of how they run. The United States, Canada, Germany, and Switzerland made education under the control of regional governments, but there are common responsibilities in line with national constitutions and national laws. If the competencies between layers of governments are disputed, constitutional tribunals are the places to resolve them. Education administration competencies between central and regions vary among different federations (Wong, Knupling, Kolling, & Chebenova, 2017).

Education budgets for schools are coming from both center and federal unit governments in federations. For example, 15 percent of regional education spending is obtained from the central government, and regional governments have to pay 85 percent of education spending. The federal government of the United States gives 10 percent of the state's education budget and the rest 90 percent is from state governments. In Switzerland, 10 percent of local education expenses are paid by the confederation government, 63 percent by cantonal governments, and 27 percent by municipal governments (Wong, Knupling, Kolling, & Chebenova, 2017).

The federal education system does not mean the federal units have to seek their education money for their schools. Resources are shared to combat socio-economic disparities while paying respect to the autonomy of the regions because the economic standard of subnational regions could not be equal. In Germany, top economic Landers (provinces) spent 5000 Euro per pupil between 2005 and 2012, but the poorer Landers could spend only 1500 Euro per pupil at that time. The central education state-backed institutions have to reinforce the poorer states, and this is called cooperative federalism (Wong, Knupling, Kolling, & Chebenova, 2017). Another example is that the Australian central government gives out need-based funding for disabled students, students from weak socio-economic backgrounds, and indigenous communities. Canada and the United States have created laws and are also providing special educational funding to native tribes.

In Federal education systems, school inspections are mostly carried out by state-level education authorities (Wong, Knupling, Kolling, & Chebenova, 2017). In Canada, provincial education bodies monitor to ensure schools are teaching the common curriculum of the confederation and the quality of teaching staff in schools. In the United States, States have more power in inspecting schools.

In terms of challenges in the Federal Education system, it favors the autonomy of subnational education governance, and so there may be challenges related to education service quality. The subnational regions prioritize their local education agendas and that makes the children who move to a new region face difficulties in learning (Wong, Knupling, Kolling, & Chebenova, 2017). Setting national education priorities and national reform in education are difficult in the federal education system. To create a common education goal, horizontal cooperation between states is relied on in Germany, Switzerland, and Canada

(Wong, Knupling, Kolling, & Chebenova, 2017). Financial burdens for the state and municipal education authorities are seen in federations because the main responsibility for education is the federal unit-level government.

EMPIRICAL STUDIES REVIEW
1. Education System in Yemen
The Yemen government has made the development of the education system a top priority. The share of the budget dedicated to education has been high over the past decade, ranging from 14% to 20% of total government spending and 32.8% in 2000. For 2001, education spending was 9.6 percent of Gross Domestic Product (GDP). Since 2000, in the strategic vision for the next 25 years, the government has committed to bring about significant changes in the education system. It is therefore committed to reducing illiteracy to below 10% by 2025. Several ministries manage Yemen's education system at various levels. General education is under the direction of the Ministry of Education. Vocational schools and community colleges are managed by the Ministry of Technical Education and Vocational Training. Higher education is regulated by the Ministry of Higher Education and Scientific Research. This point can be said to be somewhat similar to Myanmar's education system. However, it still struggles to provide infrastructure for education. School supplies and educational materials are of poor quality. There are too few classrooms and insufficient teaching aids (Nagi, A. 2021). Yemen believes that education is critical to eradicating poverty and focuses on ensuring that all children have access to quality education. The country's development plans have consistently prioritized human development and basic education. Although basic education has improved over the years, the enrollment of girls in Yemen, retention and completion rates, teacher quality, and teaching materials, Yemen still faces significant challenges, including in areas of emergency or conflict (Nagi, A. 2021). Education and conflict are intertwined in Yemen. The situation is not new to Yemen. Indeed, Yemen's education sector has been partial to propaganda since the start of the conflict. Schools across Yemen have become centers of indoctrination. Those students who still attend them are often groomed to join the ranks of one or another of the country's armed factions, albeit not necessarily in combat roles. This phenomenon is especially apparent in areas controlled by Ansar Allah, better known as the Houthi movement (Nagi, A. 2021). Yemen faces major problems in developing its education system. One of the poorest countries in the Middle East and the world, its education system has been plagued by international and internal conflicts. It faced serious problems throughout the 1990s, including economic austerity and integration problems. In this sense, expanding access to education to the extent that two different systems have been integrated in Yemen is a great achievement (Nagi, A. 2021).

2. Decentralization process and education sector decentralization in Ukraine
One of the emphases of the decentralization process in Ukraine was focused on the finances of the country which ensures subnational governments are allocated about 40 % of the public revenue. Although there was a reduction in total public revenue due to the deep recession caused by the annexation of Crimea by Russia and the war that occurred in the Donbas, total public revenue allocated to subnational governments has elevated from about 38% in 2014 to 41 % in 2017. For initiating public administration as an accountable and transparent practice, the reform of comprehensive local governance is necessary. The reform was also focused on national security to respond to Russia's warfare. The consolidation of the national state is important while considering the composition restructuring, regional and local governments' responsibilities, and finances (Rabinovych, M., Levitas, A., & Umland, A., 2018).

A study conducted by Oharenko, V., & Kozachenko, I. (2020) explored the general trends and approaches to reform in the education sector in terms of decentralization in Ukraine. The decentralization process might influence the educational institutions' dynamics that delegate more autonomy. It is ensured that education decentralization coordinates the government agencies' actions, institutions of education, and the public to meet the needs of citizens and the demands of the government. Decentralizing higher education needs to be considered the managerial relations and joint responsibility. The education budget needs to be considered by the education level and it is needed to choose the way of movement, considering the interests of all stakeholders in the education transition process. The practice, of strengthening teachers' motivation to improve the educational services quality, initiated in the United Kingdom and Denmark, Spain, Poland,

Romania, Finland, and France of the European Union is considered to be implemented in the education system of Ukraine.

3. Federal Education Policy in the United States

Over the past half-century, federal education policy has played an increasingly important role. What happens in American classrooms is determined and ultimately in the hearts and minds of American students. In the United States, the state governments are responsible for education. This is intended to allow states to Promote diversity and choice (Gamage, D., & Zajda, J., 2005). State governments have always been concerned about the importance of federal education to socio-political and economic development. (Curley, 1986). While there are standards for certain aspects of American education, states have a lot of authority over education. This, combined with the prevailing belief in the local control of schools, allows for some degree of diversity to flourish. School districts can offer courses beyond the core curriculum that are relevant to the needs and interests of their particular communities and experiment with different teaching methods or techniques (UNDP, 2003).

By 1957, the federal role in education had expanded significantly, but major changes were in store. When the Soviet Union launched Sputnik, the world's first satellite into orbit, in October 1957, federal policy shifted focus. When the Soviet Union launched a second satellite just a month after the first, the success of academically talented students became the foremost preoccupation of the nation's schools. A week after the launching of Sputnik II, a federal policy paper titled "Education in Russia" stressed the Soviets' aggressive cultivation of academic excellence and called on American educators to do the same but better in hopes of out-performing the Soviet Union and winning "the race for space." The cold war was no less potent than previous wars had been in stimulating rapid increases in federal aid to education (Steeves, K. A., Bernhardt, P. E., Burns, J. P., & Lombard, M. K. (2009).

One of the major obstacles to decentralization in education is financial challenges. Depending on states' levels of economic and human development, the impact of decentralized school management may vary. The federal government is not the primary source of revenue for schools. Nationally, the percentage of public school district revenue from the federal level does not exceed ten percent. However, federal aid is important for states with low revenue from state sources, and the federal government provides more support to such states. Approximately 80 to 85 percent of most school district budgets are in fixed costs, including salaries, and federal aid enables school districts to undertake activities that would not be possible without this aid. Federal aid also stimulates innovation in education and promotes equal opportunity for disadvantaged groups. There are also federal aid programs that promote equitable education for speakers of English as a second language. Once students have completed basic education, they can receive federal aid to attend college. Parents have the freedom to choose schools for their children, but there aren't many choices for those living in sparsely populated states or states with few resources. In any decentralization of education, community participation, and especially parent participation, has a positive effect on student performance on standardized tests. Decentralization takes time to implement, with many necessary preconditions. The decentralization of systems practiced in the American education system over the past several decades remains to be tested for its effects (Curley, 1986).

4. Opinions on Education Sector Decentralization in Turkey

A study conducted by Şahin; A. (2018) explored the opinions of principals on the education sector decentralization in Turkey. In this study, rather than the positive opinions and expectations, concerns about decentralization in education were expressed more. In terms of positive opinions, were in the fields such as financing, physical environment, the support of infrastructure, organizational structure, and the functioning of the administrative bodies. The respondents (principals) expressed that by decentralization in the education sector, the bureaucracy mechanism might decrease then tend to enhance the tasks, decision-making, and problem-solving, and are concerned that it does not affect education.

The physical structures, equipment, and schools' capacities and more allocation of time to education by the principals could be improved by decentralizing the education sector. Concerning decentralizing the education sector, "limited decentralization run by the central government" could be one of the underlying reasons, and finance and limitations of the administrative forms would need to be considered. In terms of administrative point of view, it is expressed that more autonomy might be better to

improve and from the political lens, it should not be bargained between nation-state, nationwide education, and decentralization in education. Moreover, there were concerns relating to localized inspections that might increase the political pressure and subjective application (Şahin, A., 2018). The strong discouragements were expressed that educational politics in terms of decentralization might risk the structure between nation-states. The participants expressed that the curricula in the decentralized education might be stated by the local governments. Participants assumed the decentralization as full autonomy and were willing to a low level of decentralization in education and expressed concerns related to *"political pressure, favoritism, chaos in relocations, deterioration of the national education structure and causing harm to the nation-state structure".* The participants mentioned that meritocracy-based decentralization will not risk the national identity and the structure of education and it could be effective and useful. From this perspective, the necessary regulations should be determined by the policymakers to improve the education system by decentralizing it (Şahin, A., 2018).

5. Federalization of Spanish Education system and lessons learned

(i) Centralized system under the dictator

When the military dictatorship led by General Franco ruled Spain, the administrative power including the education system was run as a centralized administration. Teaching local languages and using them in the media were banned. The Franco administration believed that the center must be strong to attain a strong, united, and glorified Spain. Local Education administrators were responsible for the central Education Minister and had no authority to manage their region. The Franco regime did not prioritize education in their centralized government and addressed education as an expense not as an investment. It also pointed out that underfunded public schools are merely for legitimizing autocratic regimes that pursue an agenda of social elitism, political discrimination, and economic insularity. Thanks to the centralized administration of Franco, education, and commencement standards had gone to the third-world level (Hanson, 2000).

(ii) Decentralization reforms and challenges

The study conducted by Hanson, (2000) stated that the challenge for the federalization of the Spanish education system is making one system composed of 17 areas rather than 17 different education systems. To overcome the challenge, they created an intervention called "minimum academic requirement", an academic system in which 65 percent of content for all children in Spain to learn about algebra, European history, etc. and, up to 45 percent of the content will go under the management of local education authority. Because of the "minimum academic requirement", a student who moves from one federal unit to another federal unit will learn the same subjects, and the credits from the former school will be transferable. The second reason why the balanced measures set up in education between union level and federal states is to balance the policy preferences of left-wing and right-wing political parties. When a political party attains power at the central level or a federal state, they want to create education in line with their political ideology, so a "minimum academic requirement" is created to balance the warring political ideologies. He pointed out the importance of political will in upgrading and decentralizing the educational authority as follows.

> *"However, none of the changes introduced during the transition would make any difference unless the country began to mobilize the financial resources that would treat education as an investment rather than simply an expense"* (Hanson, 2000, p. 21).

(iii) Lesson Learned from Education Decentralization in Spain

Based on the experiences of the Spanish federalization of Education, Hanson suggests some lessons learned about the transition from centralized education to decentralized education from the perspectives of administration, human resource development, finance, and politics. From the administration's point of view, coordination of the center and each federal unit is recommended. The Center should not order educational departments of federal units. If there are disputes between the center and the federal unit, a third party like the court should be the one to resolve the disputes. The decentralization process should be driven step by step, it takes time and needs much cooperation (Hanson, 2000).

From a human resource point of view, the lesson learned from Spain's experience is to keep skillful managers of the old system, and the removal of staff for political reasons would make reform step

back. Human resources of education staff controlled by the center should be handed over gradually. During the reform process, raising the new education leaders should be implemented, Hanson suggests. From a financial point of view, decentralization does not mean transferring all the burdens to local authorities. Decentralization is transferring access and responsibility and helping federal unit governments to be ready for those tasks at the same time. Education grants given from the center should be equitable between poor states and rich states (Hanson, 2000). From a political point of view, Hanson pointed out the importance of the political will of political leaders in education decentralization, the political will of parties is much more important than techniques in the decentralization of education. The political party that controls the center and the political party that gets power in the federal unit could be different, so consensus is the key (Hanson, 2000).

6. Education Reform in Myanmar

The aim of the reform of education in Myanmar initiated by the NLD government in 2016 was strengthening the education sector by implementing the plans for long-term and short-term for improving quality education. To achieve this aim, certain policies and laws were enacted by prioritizing accessibility and quality education. Moreover, the reforms of the curricula and teacher training were also prioritized but there needs to be a consideration of the issues related to diverse ethnicities and languages as language usage in education is a monolingual system among different backgrounds (Tharaphy, K., 2021). In terms of reforms, the priorities for the education sector by the NLD government were "establishing early childhood care programs, improving basic education completion for every child, promoting to support nationalities' languages and cultures". Additionally, the priorities included "providing quality of life, developing a world-class higher education system, and ensuring the effective, efficient, and transparent allocation". The reform process might not only take time to become effective reform but also have many challenges to be addressed. The education implementers such as teachers, education workers, and school administrators might be helpless by the policy on administrative centralization in the education sector. In the reform of basic education, there needs to be the reform policy equally and should reform the top-down nature in the structures of hierarchy to become effective and accessible education as well as considering inclusion, equality, and cultural traditions (Tharaphy, K., 2021).

Considering challenges and opportunities of Education Reform in Myanmar, according to the National Education Law enacted by the previous military regime, it might be mentioned as the centralized one, and the education ministry was formed with the people from the military-backed government. There is no clue in the policies and implementations for democratic education reform. In terms of challenges, there are high drop-out rates, excluding the poor and marginalized sectors from accessing education, hidden costs such as extra tuition fees, and hindering poor families from sending their children to school. There are issues related to the quality and availability of relevant skills for their adult life and career. Although there are challenges, regarding the opportunities, there is active advocacy to the government by the education-focused civil society including student unions. Additionally, SDG4 is also a great opportunity for the accessible and equality education systems (Lwin, T., 2021).

METHODOLOGY

Qualitative research method (focus group discussion and in-depth interviewing method) was used in this study. In focus group discussions (FGD) on implementers, the respondents were open to freely expressing many challenges in changing the basic education sectors of the federal education system. The respondents for FGD were selected in 13 states and regions of Myanmar except Nay Pyi Taw and Rakhine State. The study population was implementers and policymakers who are policy-making and implementing in basic education sectors in 13 states of Myanmar under the Ministry of Education, NUG, and EROs. The sample size was (19) persons, (15) implementers of representatives in basic education sectors for two focus group discussions (1) policymakers from NUG, (2) ethnic groups' education policymakers, and one basic education expert were invited to join the in-depth interview. A purposive sampling method was used.

In this research, the research questions were what challenges policymakers and implementers regarding the federal education system, 2 Focus group discussion methods were used and interview guidelines were clarified as a research tool to assess the perception and decision-making of policymakers

and implementers. The instrument was composed of the challenges of implementers and policymakers regarding basic education sectors in reforming the federal education system. The data collection was conducted after getting approval from the respective authoritative persons. The data analysis of this research was used in content analysis and narrative analysis. An explanation about the purpose and the nature of the research study was given and consent was obtained. Then, the researcher was provided with interviewing guidelines regarding federal education reform.

FINDINGS AND DISCUSSION

This study mainly focused on the challenges of implementers and policymakers in federal education reform. The study mainly emphasized the perspectives of policymakers and implementers towards a centralized education system, the challenges of a centrally controlled education system, the future federal education system in the eyes of education rebels, expected education in federalism, challenges during the transition to the federal education system with revolution period, challenges in terms of budget and infrastructure support, human resources, teacher training, school structure/ organogram, teaching, teachers' quality and curriculum, ethnic language in teaching, school inspection and supervision, federal union level common education standard, students' quality and achievement, parent & society' engagement and participation.

Perspectives of policymakers and implementers towards Centralized Education System

As the respondents –both policymaker group and implementer groups are involved in the Spring Revolution of 2021, their denial voices of the decade-long centralized education system are in mostly unison. According to a response from a policy maker, the Centralized Education System means policy instructions come from the center department without consulting with field implementers, and so policies are not well-informed for some areas, which leads the implementers to fake the good results in their reports. A Director General level policymaker said, *"Some ground implementers are adoring that system because there is no accountability of them for the failure. They can just say the excuse of they had worked as they were directed"*.

However, not all implementers like challenge-free centralized systems. Many respondent teachers commented that teachers and students could not upgrade their potential, thanks to that system, beyond the instructions of the headquarters. One implementer from the Magwe region stated that centrally controlled teacher training could never deliver a hundred percent of training content to school-level implementers. Both the leaders and school-level teachers agree that there is no policy input from the lower ranks of the system. One teacher claimed, *"There is a lot of power abuses and corruption in the Centralized Education System"*.

As challenges of a centrally controlled education system, the same opinion of both implementers and policymakers is that a challenge at the central level could not access local-level difficulties related to educational policies and information from the school level could not reach to central ministry. A respondent teacher pointed out that even exam result data were manipulated and reported to higher departments to meet designated targets. Because of this gap, a CDM high-level policymaker said, *"Policymakers could not get good ideas and suggestions from those on the ground"*.

Individual behaviors of departmental leaders sometimes cause difficulties for ground implementers. *"Some egocentric leaders do not discuss with school level implementers"*, a teacher had responded to a study question. It could be analyzed that the lack of an inclusive decision-making mechanism is one challenge of a centralized education system. Another challenge of a centralized education system is that it does not encourage local education initiatives. According to a respondent teacher, any school could not even organize a school soccer tournament without high-level approval.

Power abuse is one of the grievances of implementers, and even some policymakers agree with this belief. According to a policymaker, there are a lot of former military officials who have taken director-level positions in education departments. A schoolteacher said that the organizational structure of the education department is like an Army and has no bottom-up mechanism in policy making. The implementers could not accept the situations in which they are being forced to work for jobs from other ministries, for example, assigned as polling staff and hostesses during high-level authority visits.

Why the Federal Education System?

The policy department chief of the revolutionary government comfortably answered that he supported the educational reforms towards the federal education system because the revolution was building a Federal Union. Most policy implementers also stand with federal education reform, but they have different reasons. The first reason is related to the teaching sector. Some respondents expect that education curriculums will be more appropriate to regional needs, especially teaching ethnic language teaching in non-Burmese speaking areas.

Another reason why most of the implementers, and respondents of this study support the federal education system is their expectation of reforms in the administration sector. Many implementers believe that there would be more qualified teachers if federal unit-level autonomous education authorities trained and hired teachers for their regions. Their displeasure with the military-style command system in the centralized education system is one of the reasons why they are supporting federal reform. Political defiance towards the coup junta is part of the reasons why teachers support federal education reform. A teacher said that he likes reforms to the federal education system because they are CDM teachers and opponents of tyranny.

While discussing on the future federal education system, a senior official from the Ministry of Education insists that there will not be absolute control of central headquarters in the federal education system. The definition of the federal education system for some respondent teachers is it is the education system in which local education entities create and manage the system in their regions. Their common expectations are reducing central control of all aspects of education sectors. A policy maker from the revolutionary government education ministry predicts that there will be a common federal-level educational standard or framework, and this framework, according to this official, should be designed by many collaborations of education institutes from all federal units.

Education revolution leaders and implementers share the same view about minority education in the future education system. A policymaker pointed out that teaching an ethnic language or local language is an essential part of a federal education system. Respondent teachers from minority communities stress the ethnic languages' role in federalism. One of the major findings from the topic of the federal education system interview is that many teachers in the revolution have limited knowledge about education in a federal system. Some admit that they need more skills to meet the new demand in the new system.

While exploring the expectation from the federal education system, a senior school teacher said she expects the autonomy of schools from the federal education system. An ethnic teacher's expectation is the education freedom of minority groups. Policymakers' responses revolve around the education competition of federal units with each other rather than the autonomy of schools. A ministerial-level policymaker said he expects an education system in which the fate of education for a region is in the hands of the people of that region. It is indirectly saying about the education autonomy of federal units.

Curriculums that are relevant to the regions are expected from the federal education system by two teachers of a focus group discussion. Policymakers also pointed out that there will be local curriculums with a local vibe, but universal subjects like mathematics or English will be taught under the same minimum educational standard. They all share the same expectations about local curriculums, according to them, which will bolster the quality of education services and students could enjoy more choices. If the education sector is managed by the local government, the nearest government to the people, the management will be more effective, a teacher suggested. That is the principle of subsidiarity. Local education laws which are tailored to local needs are among the expectations of Federalism.

As a preferred education system in Federalism, one of the education reform leaders anticipated education federalism is a system of regional authority that addresses the regional education needs with the facilitation of a central department. This senior-level official from the revolutionary government claimed that they are fighting to build a system of people who can create a local education service that will be well-suited to their language, culture, and socio-economic context. He admitted that this is a very complicated job and will take time. A school principal suggested in a focus group discussion that the future federal education system, even though there are many different federal education arrangements internationally, should be by basic characteristics of federalism including subsidiarity. Many teachers said that they wanted

an education system in which teachers and students can create their own initiatives and express their opinions.

Challenges during the Transition to Federal Education System with Revolution Period

Many CDM teachers have to flee from home and they don't have income for survival. As the schools are running online during the revolution and it is a newly initiated online school system, the learning process deeply depends on students thus it is challenging to deliver 100 percent of the curriculum. After the arrest of the founder of an online school, some teachers and students were terrified and quit teaching and learning due to security concerns. Moreover, it is difficult to nurture a culture of open classrooms with the freedom to discuss because the teachers and students have been rooted in the former system and propaganda of dictators.

Budget and Infrastructure Support:

Budget support is vital to our education cooperation and an important pillar of our overall success and education. It also depends on the constitution and educational law that describes how the power and decisions are allocated to the federal state level and union levels. Budgets will come from at least two sources - Federal and State. The implementers said that states with resources are rich and regions without resources may have problems. An implementer said, *"Development budgets should go from the bottom up. It should be implemented immediately rather than written".* An implementer also said that since the budget has to be dealt with in two ways, we need to understand and be proficient in accounting laws. Because the system has changed, everyone needs to be professional.

An ethnic policymaker said that when the federal education system is decentralized, the states will have to rely on themselves for education support. In ethnic areas, there were no self-run systems for education and they are making new policies successful. They believe that a new system of technical and administrative expertise is needed.

Human Resources, Teacher Training, and School Structure/Organogram:

There are just two educational universities, Sagaing and Yangon University of Education. Just having these two universities will not work at all. Besides, the central headquarters only focuses on the number of high school teachers, middle school teachers, primary school teachers, headmasters, general workers, etc. They don't care about the number of people all the same. In the same way, in the past, there was prejudice and corruption related to the government.

The teacher training process will see difficulties because there will not be enough time and budget to train many qualified teachers and might have difficulties due to differences in teacher quality. There will be a shortage of local teachers who can speak the local language and limited human resources to assign hard-to-reach areas. Teachers will be employed by their region and schools. So, they have to try their best to be qualified. Implementers will encounter the problems of managing CDM teachers and non-CDM teachers. Some students will prefer their CDM teachers and don't want to learn from non-CDM teachers.

Teaching, Teachers' quality and curriculum:

When given federal self-determination rights, education can become a lot more private and public. To control the quality, the implementers and the policymakers unanimously point out that we have to put the framework in place. Teachers will have to work hard because new curriculums will come out in the federal education system. The curriculum should not have limits and be open to creativity. As there needs to be technology in education teachers have to learn to get used to it. There might be difficulties in curriculum development language difficulties in teaching and the need to assign local language-spoken teachers. If it is not possible from the federal level to ensure that there is no language difficulty in the curriculum, then the central level must help. Additionally, there might be teaching colleges in every federal state.

Ethnic Language in Teaching:

Myanmar is a country where various ethnic groups live. The development of the country depends a lot on the improvement of the education system. In addition, education needs to be inclusive of all ethnic groups. Even though education is free up to high school, many people can't study until the end of high school. In Myanmar, ethnic minorities are still victims of armed conflicts and are deprived of the right to education due to fleeing from their homes. In schools all over Myanmar, the main teaching is in

"Burmese". The Burmese language is indeed important, but a lack of language in ethnic areas. There is no denying that there are language difficulties. Lack of teachers in places with difficult transportation and there is still a shortage of teaching aids. It is also questionable how much the ethnic children will be able to understand when school lessons are taught in Burmese, the official language. Therefore, there is a need to teach relevant ethnic languages and indigenous literature. Moreover, there might be difficulties in ethnic language for the minority in the minority group. It should be noted that there are very few teachers who can teach in ethnic languages. There is no curriculum for every subject in Myanmar's ethnic language. As a result, even some ethnic groups do not speak their mother tongue. If the parents belong to one of the ethnic groups, it is not surprising that they will speak the language of the parents. This means that if they are Chin people, they speak the Chin language. Likewise, if they are Shan people, they speak the Shan language, etc. But the real problem here is that when the children are sent to a school like kindergarten, by the age of 5, the teachers need to understand the ethnic languages to communicate with their students or to solve this problem. The issue of getting a fair salary for teachers should be considered. There is a need to appoint teachers to teach ethnic languages in primary schools in regions and states. In which state, ethnic literature, the curriculum should be developed in which regions and how it will be taught. It should be compiled in consultation with ethnic language and literature experts. Only if they teach in the ethnic language will their education level be high. In appointing teachers, it would be better if they could be appointed from local ethnic groups.

The government should give priority to providing enough schools in the ethnic areas where there are not even enough schools in Myanmar. In addition, it is mandatory to consider the convenience of transportation for students going to school. Arrangements must be made for the students to go safely to the places where they will go to the school from the waterway. Before the rainy season comes, we have to think about ways that will be convenient for schools that don't have enough rain. Thick mud during the rainy season also needs to be considered. For example, in Chin State, children who go to school during the rainy season are learning despite difficulties. If only a federal union could be established, schools would be able to open when the weather was favorable. It should be noted that some ethnic areas have children who have lost their lives due to natural disasters.

School Inspection and Supervision:

The implementers pointed out that if there is no clear and transparent school inspection system, it will be difficult for schools to ensure the smooth teaching-learning process and the quality of teaching. Moreover, teachers, especially science teachers may have weaknesses in using technology and lack of enough time and money to invest in laboratory experiments. There is a transportation challenge to inspect and supervise reach areas. The policymakers highlighted that the inspection and supervision framework will be developed and practiced for quality control in all public and private schools if federal self-declaration and determination have been given. The stakeholders in the education sector such as teachers, and students need to follow this framework.

Federal Union Level Common Education Standard:

In federal systems, education is a state-level responsibility. Therefore, locally owned and locally delivered education could be a model in Myanmar's federal system. It must be all-inclusive in drawing the Common Education Standard. If not, the students who will move to another federal unit will face difficulties in their learning. Now some schools teach the mother tongue-based multilingual education system managed by ethnic armed organizations and their educational institutions called Ethnic Basic Education Providers (EBEP). Those EBEPs schools use Mother Tongue Based Multilingual Education (MTB-MLE) teaching methods along with child-centered teaching methods. Substantial financial and technical assistance has been provided by international donors, and many communities have assisted. Teachers sometimes receive stipends, but most are volunteers.

Therefore, the federal government must provide coordination and training at the federal level. Learning resource identification; and financing (funding and distribution) must also be guided by the federal government. Where applicable, may also be involved in dispute resolution and quality control matters. These issues must be discussed, ideally through a systematic process of meeting and negotiation. Most

importantly, the development of language use road maps and the planning of teaching materials must also be coordinated by the central government.

There is a challenge in the union-level common education standard to standardize among federal states. There are so many education standards. There must be no discrimination regarding on standardization is crimination on the grounds of sex, race, disability, etc. Details must be determined by the Federal Units. The real framework is standardized by the headquarters. The situation is worse in countries such as Burma, where federalism still has many characteristics and is particularly complex and conflict-ridden. It will not be easy, but exploring and supporting local identity and providing education can be an important tool for developing democratic federalism in Myanmar and learning lessons.

Students' Quality and Achievement:

The implementers expressed that the assessment process will be more complicated and challenging because it will not just be on paper assessments and take time. Students will be evaluated on their practical skills and critical thinking. There is a challenge in researching to assess students' quality. The policymakers described that the standard framework is essential. There must be frameworks regarding primary school, middle school, and high school completion. Having a framework is not manipulating teaching methods and curriculums. The check and balance between federal and units is also needed.

Parent & Society Engagement and Participation:

The concern of parents is the quality of the schools in their neighborhood. The effectiveness of the schools might not be equal and parents will get pressure to get a good school for their children. Migrant families will have to overcome language challenges and there might be financial challenges. Additionally, parents who live in hilly regions and with low literacy might have difficulty cooperating the federal education. Therefore, there need to educate the parents and then try to encourage them to cooperate. The reform and enhancing the engagement and participation may take time and staff in the education sector need to change first.

Other Challenge:

During the revolution, teachers were working in federal schools. Some CDM teachers could not afford online data fees. Teachers should get a specific salary so that they can focus on reform implementation. The teachers have to change our attitude towards our colleagues and our students. This is the most crucial part of this whole revolution. Moreover, we need a bunch of effort to endure a bunch of difficulties that are waiting for our way to achieve this goal.

CONCLUSION AND RECOMMENDATION

In the decades-long-used centralized education system, the policymakers had struggled to make informed decisions and the implementers could never be involved in decision-making processes. Both policymakers and implementers agreed that the context had been encouraging corruption and power abuses. The teachers in this study stated that a centralized system will never empower the development of initiatives by the local level implementers and that may lead the policymakers to adopt uniform policy for the whole diverse nation. Both policymakers and implementers support current educational policy reform to the federal education system by MOE and ethnic education groups because the federal unit's educational authority could know more about their students and schools. One finding showed that our respondent implementers need to know more about how international federal states practice the federal education system. Policymakers should introduce these international practices to the implementers. Our respondents mostly expect fair wages, school autonomy, and a better curriculum from the upcoming federal education system. Many policymakers predict that the future education system will be the collaboration of autonomous education departments of different federal units.

Implementers said the budget will be a headache for them, especially for those in a poor federal unit. A policymaker said they put a policy of using an education budget of 6 percent of GDP, but said they have to work very hard. After the Spring Revolution, the conflict between CDM teachers and non-CDM will be a challenge for local-level implementers. Some teachers predict that applying education technology will be challenging for them in the future. Policymakers suggest that only two Education Universities are not enough and federal units will have to establish more education faculties in the universities of their areas.

Some implementers worried that two levels of education authority would confuse them in their workings. One teacher commented that policy-making mechanisms should be all-inclusive to reflect the voices of implementers. One CDM teacher recommends that some implementers must be paid for their work during the transition or revolution period so that they can exert full efforts in revolutionizing education.

Based on the findings from a series of discussions with respondents, the following preparations for the upcoming new system are recommended. For the budget sector, equitable education budget allocation policy should be prepared for the post-revolution transitional period. Later this will be the law enacted by the federal parliament. MOE of revolution government and ethnic education groups should work together to prepare a minimum academic standard draft while keeping in mind that the central education ministry is not the boss of all education authorities of federal units, but it is a facilitation body for cooperation.

Ethnic education authorities should prepare to establish education faculties in the universities in their control areas. They need to train more local-language-speaking teachers so that local students can learn in their mother language. One teacher had pointed out that they had wanted to teach in the local language, but there has been no academic curriculum in ethnic language, so she recommended that local language curriculums should be prepared. According to much feedback from teachers, MOE should have a policy of how they would treat non-CDM staff in the future to avoid unnecessary interdepartmental conflicts.

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The factors that effect to learning performance in Operation Management class: The case of Business student

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ABSTRACT

This study seeks to assess the learning performance of students enrolled in an operation management class, with a focus on the impact of gender differences, academic majors, and the incorporation of in-class exercises. The research involved 210 students from the Business Administration department, categorized into two groups: one receiving after-class exercises and the other without. The examination scores were subjected to an Independent T-Test and ANOVA to evaluate the influence of these factors on learning performance. The findings revealed that gender and academic major did not yield a significant impact on learning performance. However, the study identified a notable influence of differences in teaching methods on academic outcomes. Specifically, the implementation of after-class exercises demonstrated a significant positive effect on learning performance. As a result, this research recommends the adoption of tailored class arrangements, such as incorporating after-class exercises, to enhance students' understanding and overall academic achievement. These insights contribute to a better understanding of the factors influencing learning outcomes in operation management classes and advocate for instructional strategies that cater to diverse learning needs, ultimately promoting more effective and equitable educational practices.

KEYWORDS: classroom research, operation management class, business students, exercise, learning performance.

INTRODUCTION

Business education must give students theoretical knowledge in Operation Management in addition to practical business abilities in the contemporary, global workplace, so they may gain a competitive edge (Yazici, 2004). Operation Management (OM) encompasses a diverse array of quantitative and qualitative concepts and methods that can substantially enhance business performance. Typically included in business curricula, OM is a mandatory course available to students from various majors with varying quantitative skills. Despite prerequisites in mathematics or statistics, the quantitative aspect of the course can pose challenges for many students (Mukherjee, 2002; Peters et al., 2002). In Operation Management (OM) courses, student understanding is primarily assessed through written examinations, which include a mix of conceptual and mathematically based questions. The balance between these types of questions varies based on the instructor's emphasis on mathematical approaches. Despite prerequisites in mathematics or related fields, many undergraduate business students find the quantitative aspect of OM challenging (Peters et al., 2002).

The previous study found that the demographics of students can affect student performance in higher education (Abu Saa et al., 2019). According to Grebennikov and Skaines, (2009), female students often outperform their male counterparts because of their emphasis on the importance of studying, which also concurs with Virtanen and Nevgi, (2010) that self-regulation learning enhanced females' scores to be moderately higher than male. The issue of female underrepresentation in mathematics and science-related professions persists (Wang et al., 2013). However, the educational equality of adults does not present the differences between genders (Ghasemi & Burley, 2019). Moreover, many institutions offer various majors in Business Administration, such as marketing, international business, entrepreneurship, finance, economics, etc., which make the students diverse in their backgrounds. Although Ngamsiriudom et al.

(2022) argued that gender does not affect student performance, academic majors were found to have an impact on students' scores. Therefore, these aspects should be considered in this study.

Based on previous studies with students, most students feel that the teaching materials used are less interesting, varied, and not in accordance with student needs (Diah Astuti et al., n.d.). Therefore, the common teaching strategy asserts that students perform better if they practice solving problems similar to those in exams beforehand, leading to improved exam performance. This approach, often known as "practice makes perfect," encourages students to work on assigned problems outside of class, motivating them to apply methods and enhance their understanding before examinations (Rayburn & Rayburn, 1999). The process of students completing assigned problems, instructors grading the work, and both parties investing time and effort raises a crucial question.

The primary research objective is to examine the effects of homework exercises on student performance within the Operation Management class. Beyond this, the study seeks to analyze the potential influence of gender and academic major on student outcomes. The findings from this research hold significant implications, providing insights that can inform the design of future class activities for students in subsequent years. Moreover, the outcomes serve as valuable resources for other classes within the field of Business, contributing to a broader understanding of effective teaching methods and strategies in new learning paradigms.

LITERATURE REVIEW
Operation Management Course

The aim of this course is to equip students with the knowledge and skills necessary for success in Operation Management (OM). OM involves managing entire systems responsible for goods production or service delivery (Heizer et al., 2017). This course is provided as core course for business students in the curriculum revised in year 2022 (KKUIC, 2022). Operation Management (OM) involves strategically managing various processes to efficiently use limited resources like materials, labour, and production capacity. Its main objective is to optimize profits or minimize costs. OM has diverse applications, from analysing services to coordinating global supply chains. It spans multiple sectors and departments in institutions, including Business, Engineering and Logistics and Supply Chain Management, Project Management, and Hospitality Management (Teo et al., 2023). Since Operation Management (OM) is a compulsory course open to students from diverse majors with varying levels of quantitative skills, despite prerequisites in mathematics or statistics, the quantitative component of the course can be challenging for business students (Peters et al., 2002). Classroom teaching plays a critical role in shaping the mindset and approach of managers towards addressing operational management challenges, exerting a substantial impact on their perspectives and problem-solving strategies (Kim, 2023). The conventional focus on quantitative methods and issue resolution may make Operation Management courses unengaging and disconnected for numerous students. Several approaches can be employed to inspire students, including the integration of real-world examples, increased interactive activities, and highlighting the significance of Operation Management in the business scope (Krajewski, 1998).

Gender and student performance in OM

In terms of gender, males develop a school-averse mindset through socialization. Males have more flexibility than females to do what they want and when they want, contrary to classroom expectations (Figueroa, 2000). Certain male students may find it challenging to concentrate or sustain focus on learning materials for extended durations and remain seated in class to absorb the subject matter. These researchers also suggest that some males might prioritize sports and outdoor activities over academic pursuits (Majzub & Rais, 2010). Students, both male and female, from various schools were requested to provide two explanations for girls' superior performance over boys in high school and suggest ways to enhance boys' academic performance (Marc Jackman & Morrain-Webb, 2019). To enhance academic achievement, male self-efficacy improvement can be employed in university students (Pirmohamed et al., 2017).

Various studies demonstrate that student demographics can influence performance in higher education (Abu Saa et al., 2019) while Ngamsiriudom et al., (2022) argued that gender does not significantly impact student performance. Some studies still present that males perform better in

mathematics (Ghasemi & Burley, 2019) while females are better in disciplines (Grebennikov & Skaines, 2009; Virtanen & Nevgi, 2010) whereas the gender variations in specific cognitive skills may be due to brain volume, which most likely has a larger brain than female (Burgaleta et al., 2012). The recent study of management students also proved that the performance of undergraduate management students in accounting courses differs significantly across genders (Syukur, 2021). Although math skills are comparable between boys and girls in elementary and secondary school, differences in attitudes toward the field lead to a higher number of boys pursuing careers in math-intensive fields in college (Theobald et al., 2020).

H1: Gender has an effect on student performance in Operation Management class.

Student Academic Major and student performance in OM

In the current dynamic economic landscape and highly competitive labour market, educational institutions face the imperative of developing appropriately educated college graduates who are essential for ensuring the sustained progress of the nation (Crew, 2020). When a business student selects their major, they are influenced by potential earning (Bull, 2021). However, compared to other majors, some studies discovered that students with a business major were significantly more persistent (Leppel, 2001). The observed relationship between conscientiousness and GPA was discovered to be contingent upon the academic major pursued by individuals, suggesting the presence of a moderating factor (Vedel, 2014).

However, student performance was found to be influenced by the academic major (Ngamsiriudom et al., 2022). The concurrence literature also presents that there are statistically significant differences in academic performance based on major in education and gender (Alkharusi, 2009).

H2: Academic Major has an effect on student performance in Operation Management class.

Class exercise and student performance in OM

The learning outcome refers to the knowledge (cognitive), attitudes (affective), and skills (psychomotor) acquired by learners during the educational process (Hoque, 2016). Educators have created simple teaching materials that may be printed out, such as worksheets for college students. A college student's worksheet is a resource that can assist students in learning and focus (Rufaida et al., 2013). The Student Worksheet serves as a guide for students to carry out investigations or problem-solving activities. It contains tasks that students must complete. Therefore, the student worksheet in learning can promote activities, creativity, and independence, and offer opportunities for teachers to provide individual or group guidance. The Student Worksheet aids students in acquiring notes about the material learned during activities, enabling them to revisit it when they forget about the learning process (Trianto, 2009). Employing worksheets has the capacity to improve students' metacognitive abilities. Furthermore, notable differences in cognitive learning outcomes were observed between the experimental group and the control group. Consequently, the use of worksheets in the experimental group led to superior learning outcomes compared to the control group (Junina & Halim, 2020). The worksheet can be considered effective if it enables students to engage with the provided material. Within the university curriculum, mathematics related holds significant importance as one of the key subjects, playing a crucial role in the advancement of science and technology. With this course type learning is similar to cultivating innovative problem-solving approaches. However, it is essential to teach students how to apply mathematical concepts in everyday life beyond theoretical formulas. The objective is to enhance students' creativity and their capability to address real-world problems (Nurhidayah & Soro, 2020). Worksheets centered around problem-solving significantly enhance students' abilities and learning outcomes in areas related to effort and energy across various disciplines (Melawati et al., 2022).

The worksheet is the driving force behind learning and constructive comprehension. Moreover, motivation has a significant role in influencing the achievement of learners (Rønning, 2017). Worksheets created by college students are used as a learning support tool to facilitate active learning that takes place in and outside of the classroom, hence increasing the impact on the learning outcomes of the students

(Wijayanti & Ernawati, 2020). The utilization of students' worksheets has a discernible impact on learning results, particularly in subjects connected to mathematics (Nurhidayah & Soro, 2020). There are many classes in science that also use the problem-based worksheet to enhance learning outcomes for students (Diah Astuti et al., n.d.).

H2: Class exercise has an effect on student performance in Operation Management class.
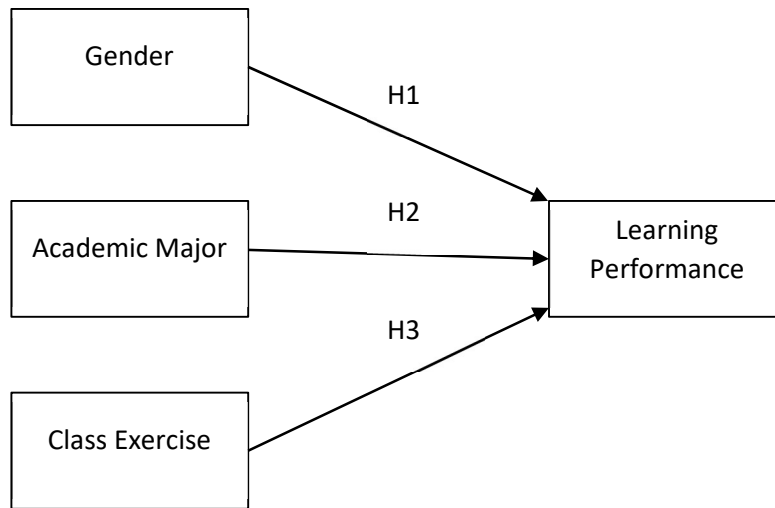
Conceptual Framework

Figure 1 Conceptual Framework

METHODOLOGY
Class setting

The present study was conducted at Khon Kaen University International College, covering a diverse range of subject areas. Participants were third-year undergraduate students enrolled in a business program, specializing in areas such as International Marketing, Global Business, and International Entrepreneurship. Each student attended a weekly class session lasting a minimum of 2.5 hours, where the instructional approach encouraged active engagement, fostering opportunities for inquiries and dialogues. At the beginning of the instructional sessions, students received the syllabus outlining the course structure and assessment methods.

All sections were taught by the same instructor in classrooms with identical materials. Regardless of slight variations in the classroom environments, such as the size of room, noise, and light. All students had access to downloadable and printable presentations and other materials. The chosen textbook as the primary academic resource was also available for all students. The PowerPoint presentations included illustrative examples of challenges from each chapter.

In the 2022 class, the lesson comprised two portions without supplementary exercises for practice. In the 2023 class, two additional sections were introduced, incorporating extracurricular exercises beyond the traditional classroom setting. After the seventh week, all students underwent examinations with a comparable level of knowledge, showing only marginal disparities between the years 2022 and 2023. The examination format closely resembled the structure of the worksheets, but with increased difficulty. During the examination, students were allowed to have textbooks and calculators in the examination room.

Sampling

In the class of 2022, there were 84 enrolled students, and the number increased to 133 in 2023, resulting in a total of 217 students. Unfortunately, seven students were unable to enter the exam room due

to personal reasons. As a result, these seven students had to be excluded from the study. Table 1 illustrates the characteristics of the remaining sample data.

Table 1 The characteristics of the sample data.

Characteristics	Values	Frequency	Percentage
Gender	Male	72	34.3
	Female	138	65.7
Academic Major	Global Business	64	30.5
	International Marketing	88	41.9
	International Entrepreneur	53	25.2
	Exchange Student	4	1.9
Method of teaching	Non-Exercise	78	37.1
	Exercise	132	62.9

Table 1 presents a comprehensive overview of student demographics, including gender, academic majors, and teaching methods. In terms of gender distribution, 72 male students account for 34.3% of the total, while 138 female students make up 65.7%. Regarding academic majors, 64 students specialize in Global Business, constituting 30.5% of the total, 88 students major in International Marketing (41.9%), 53 students focus on International Entrepreneurship (25.2%), and 4 students are exchange students (1.9%). Additionally, the teaching methods employed are detailed, with 78 students instructed through non-exercise methods, representing 37.1% of the total, and 132 students engaged in exercise-based learning, comprising 62.9% of the total student population. This information offers valuable insights into the diverse composition of the student body and the instructional approaches utilized within the study.

Data

The examination score from this class served as a key indicator of student performance. The statistics tools employed in this study to analyse the data were IBM SPSS Statistics version 28. The demographic information included gender, academic major, and method of teaching. In addition, IBM SPSS was used in other descriptive analyses such as mean, and standard deviation. Moreover, an independent t-test and analysis of variance (ANOVA) were employed to assess the differences in the student's academic performance. in each variable. To provide more insight, a post hoc (Fisher's least significant difference) analysis was conducted to discover which set of means significantly differed. According to the accuracy of the study, the researcher considers three control variables: instructor, course materials, and class regulation.

Findings

In order to examine the hypothesis, a multiple regression analysis was carried out to assess the influence of gender, academic major, and teaching method on students' academic performance.

Gender and Student Performance

Table 2 Descriptive information on gender and student performance

Gender	N	Average Student performance	Std. Deviation	Mean difference	F	P-Value
Male	70	16.7747	6.99989	0.029	3.207	0.975
Female	136	16.8040	6.00357			
Note: n=206, F = variation between sample means, *** $p < 0.001$, ** $p < 0.01$, *$p < 0.05$						

The results of the independent t-test and post hoc analysis show nonsignificant differences in gender ($p = 0.975$). Although the proportion of female respondents reaches 65%, the standard deviation is lower than in men. Therefore, the observed differences were not significant among genders.

Table 3 Descriptive information and ANOVA results on Academic Major and student performance

Academic Major	N	Average Student performance	Std. Deviation	F	P-Value
Global Business	64	15.6264	6.55120	1.556	0.214
International Marketing	88	17.3716	6.15302		
International Entrepreneur	53	17.1919	6.37920		
Note: n=206, F = variation between sample means, *** p < 0.001, ** p < 0.01, *p < 0.05					

Table 4 Post Hoc analysis for education Academic Major and student performance

Academic Major		Mean		Mean difference	P-Value
A	B	A	B		
Global Business	International Marketing	15.6264	17.3716	-1.74518	0.095
	International Entrepreneur	15.6264	17.1919	-1.56548	0.185
International Marketing	Global Business	17.3716	15.6264	1.74518	0.095
	International Entrepreneur	17.3716	17.1919	0.17970	0.871
International Entrepreneur	Global Business	17.1919	15.6264	1.56548	0.185
	International Marketing	17.1919	17.3716	-0.17970	0.871

The results of the ANOVA and post hoc nonsignificant differences in academic major (p = 0.214). Moreover, post hoc analysis also presents non-significant differences between each group of academic majors in Table 4.

Table 5 Descriptive information on teaching methods and student performance

Teaching methods	N	Average Student performance	Std. Deviation	Mean difference	F	P-Value
Without exercise	78	14.766	6.453	3.264	0.248	***
With Exercise	128	18.029	5.968			
Note: n=206, F = variation between sample means, *** p < 0.001, ** p < 0.01, *p < 0.05						

The results of the Independent T-Test show significant differences on student performance between the two methods of teaching (p <0.001). Moreover, standard deviation on teaching with exercise shows a lower number, which means this group's score is more consistent.

CONCLUSION

The primary objective of this study is to investigate into the factors influence of homework exercises on student performance within the Operation Management class. Additionally, the research investigates the impact of gender, academic major and exercise used in class on student outcomes. The results demonstrated a significant positive effect of homework exercises on students' performance in the Operation Management class, aiding their learning focus and understanding, as highlighted in prior studies

(Rufaida et al., 2013). Furthermore, these exercises have been found to boost motivation levels among students, as suggested by (Ahmad, 2016; Rønning, 2017). Despite the students' status as adults in a college setting, homework exercises serve as essential learning support tools, amplifying their impact on students' learning outcomes, as emphasized in the research by Wijayanti & Ernawati, (2020). This study also agrees that cognitive learning outcomes and foster innovative problem-solving in addition to put extra energy and effort (Junina & Halim, 2020; Melawati et al., 2022; Nurhidayah & Soro, 2020).

This research strongly reinforces the notion that gender has no substantial impact on student performance, as corroborated by Ngamsiriudom et al., (2022). Moreover, it challenges the prevailing belief that academic major significantly influences student performance, highlighting the need for a nuanced understanding of the factors at play in academic achievement.

The crucial implication of this study lies in the demanding need to implement supportive class activities, including homework, exercises, worksheets, or any other materials that facilitate student practice. These activities play a crucial role in boosting students' confidence and enhancing their cognitive skills. However, the use of student exercises or worksheets has been serving as guides for problem-solving while promoting active learning, creativity, and independence. These worksheets empower students and enable educators to provide tailored guidance. The incorporation of notetaking emphasizes memory retention and a continuous, reflective learning process, reflecting a dynamic pedagogical strategy designed to enhance the overall learning experience and outcomes (Trianto, 2009) especially the capability to address real-world problems in mathematics-related (Nurhidayah & Soro, 2020). However, it is imperative to acknowledge the limitations of this research. Although the sample size was considerable, the study focused solely on Business students. Exploring different fields of study or conducting similar research in diverse countries could offer valuable insights and broaden the scope of understanding in this area.

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Coming-of-Age of Chinese American Teenage Girl in Jenny Zhang's *Sour Heart*

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ABSTRACT

This literary research aims to explore the coming of age of Chinese American children portrayed in the selected short stories. Being second generation immigrants, they are perceived as 'the other' in the dominant culture, the United States, where they were born or raised in the early young age. Due to the issue of being underprivileged in terms of race, the short stories reflect the perspectives and behaviors of young immigrant children and how they perceive themselves and grow up in the dominant culture. This study aims to study the insights of characters' mind which are psychologically impacted by American culture, racial discrimination, and identity crisis.

KEYWORDS: Coming-of-Age, Alienation, Sense of belonging, Immigrant Children, Children Literature

INTRODUCTION

In the collection of short stories written by Jenny Zhang, the coming of age of Chinese American girls as a second generation of an immigrant family in the United States is portrayed through the protagonists of each story. In the 19th century, Chinese immigrants moved to The United States for many reasons such as to flee from poverty, political issues, and oppression. Some arrivals aimed to look for career or academic opportunities. Whatever the reasons, one of their goals was to seek a better life and opportunities. During the time, they had encountered several issues of racial discrimination, sexism, cultural conflict, and identity in early arrival. These feelings of hardships were expressed through Chinese American literature narrated about immigrant life, hopes, and journey. According to Zhou (1997), the number of immigrants and their children had significantly increased since 1980. The settlement of Chinese families in the United States extensively broadened and expanded. Their descendants, known as a new second generation, were defined in various perspectives from many researchers. It was significantly different in accounts of one-and-a-half and second generation which was considered as different groups of generations in terms of the process of physical and psychological development, socialization within family members, friends, and people in the society, and Chinese cultural orientation (Zhou, 1997). Some immigrant children were born in the mainland or China and arrived in the United States when they were very young whereas the other group of second generation were born and raised in the United States. Compared to the latter group, there was some historical connection with homeland traditions and practices while the Chinese American children would rely themselves on American culture rather than Chinese culture. Although second generation immigrants were defined in several ways, Dusi, P., Messetti, G., & Falcón, I. G. (2015), agrees that

> "Those who belong to the second generation of immigrants seem to find themselves in a paradoxical situation, even more difficult on a psycho-anthropological level and social-cultural level than their parents. The children of immigrants born in their second countries are forced to share their parents' lack of social belonging, because they are often perceived as foreigners in their own country (561)."

We can see that many Chinese American literatures also reflect the second generation of Chinese American immigrants mostly playing with the theme of cultural identity, hybridity, generation gap, and cultural transition and adaptation.

Jenny Zhang, a Chinese American female writer, and her family were also one of those immigrants living in the United States. She was born in China and immigrated to New York when she was five years old. After the Chinese Cultural Revolution, her father was the first one of the family who immigrated to the United States to pursue a doctoral degree in Linguistics, then three years later she followed her parents since she was in kindergarten. Zhang is a talented writer. She published two collections of poems called *Dear Jenny* and *We Are All Find* and various writing pieces about immigrant teenagers. *Sour Heart* is Zhang's first collection of short stories published. It was also the award-winning collection of short fiction that shared experiences of her childhood through each main character of the short stories. Her stories were narrated distinctively with a transparent point of view of Chinese American girls portrayed by the main characters. In other words, the stories are maintaining authenticity as Zhang was speaking through the main characters' minds in that age and the particular situations that reflected the characters' growing up process.

Numerous works have raised issues involve with poverty, discrimination, lack of educational opportunity, and cross-cultural conflict revealed in Chinese American literatures. As mentioned to socioeconomic status of immigrant group, poverty has impact on growing up process of immigrant children. Zhou (1997) commented that immigrant children or members of the second-generation immigrant, who were born in poor and uneducated family, usually perceived themselves as a product of socially underprivileged environment with drugs, violence, financial inadequacy, and poor education. To identify the living quality of Chinese immigrants from residential desirability, buildings in Chinatown in the United States were not suitable for living because they were decayed and crowded. Children would lack opportunities to gain better standard of living (Kung, 1962).

At this point, the coming of age of Chinese American teenage girls regarded as a second-generation Chinese immigrant is rarely discussed in literary studies and there are adequate rooms to explore. I would like to examine the characters' growing up process to explore identity and psychological development of immigrant children. To understand children as a second-generation immigrant, their hybrid identity would be more accepted, and they should be respected as perceived as a human being regardless of race. In the other words, the awareness of equality could be raised and widely discussed in current social topics.

Research Question:

How does being second generation Chinese immigrants psychologically affects to main characters' coming of age in Zhang's sour heart?

LITERATURE REVIEW

"Being Chinese by heritage, but not by residence; American by birth, yet ethicized, racialized and minoritized within America." (Walsh, 2017, p.609)

This chapter essentially presents the previous studies discussing the coming of age and immigrant children with various theoretical frameworks and approaches. Due to the history of Asian immigrants in the United States, American literature written by American Chinese writers has been greatly produced to narrate their hardship, feelings, and experiences through stories. In this section, coming of age of Chinese immigrant children in the United States would be discussed in literary studies discourse and how it projects a critical perspective on exploration of the characters as an immigrant identity taking into account in the literary works. Indeed, the literary criticism increasingly focuses more on Asian American literary works; thereby, Jenny Zhang's *Sour Heart* is intriguing to further investigate on coming of age in immigrant children's topics.

In this research, psychological development is used to analyze literary works to understand how the text affects readers and what writers need to imply their thoughts through the text. The concept of in-between and alienation which may affect to characters' coming of age will be focused. Green and LeBihan (1996) commented that the relationship between psychoanalysis and literature provide "active practice performed upon the passive text (143)." It could be noted that in the text, we consider the relationship of the literary text as psychoanalysts in relation of interpretation and patients in the situation where emotion has applied to one another. Hereafter, to deploy psychoanalysis in literary works blurred the binary

opposition between literature and its other but psychoanalytic criticism becomes the mere object of interpretation (Felman, 1985).

Second generation immigrants and sense of belonging

I believe that a sense of belonging has a psychological influence on the growing-up process of second-generation immigrants. The study claimed that "belonging" was being a part of the group which requires acceptance by its members (Dusi, Messetti, and Falcón, 2015). In traditional society, being a part of the group can be identified by ethnicity, race, or religion. Since society in nowadays become more diverse, the aspect of sense of belonging seems to be more complex. The second generation of immigrant are forced to confront the difficulties to assimilate to dominant culture in order to construct their identities in order to be part of the group. Healy (2020) agreed that people needed to aware where they belong to know the purpose of their lives. This is important to understand ourselves since we are able to develop identity and identify ourselves as being a part of the society that we belong to. Those who are the second generation of immigrants often find themselves in a confusing situation. It is inevitable to share lack of social belonging experience from their parents because they are perceived as a foreigner in their own country. Being unaccepted in social system could be regarded as discrimination that the immigrants face the loss of belongingness (Hodgins et al, 2015) It was painful to realize that the way immigrants perceive themselves was not how dominant group perceive them and the pain express in grief, anger, severe anxiety, or alienation (see Healy 2019).

Alienation refers to the condition of being isolated and marginalized from a person or social group. In psychology, alienation can be a feeling of loneliness and isolation that a person experiences psychological pressure including sense of not belonging, lack of confidence and excluding themselves from society. It is important to solve alienation issue since it affects to young immigrant children growing up process and psychological development. Research conducted on the relationship between alienation and self-efficiency in young people showing that the increase of psychological alienation might cause the inability to achieve their goals (Zorcec et al. 2023).

Growing up in Dominant Culture: Chinese American as a Second Generation

Adolescence is a certain period of human growing up process as transition from a child to an adult. In general, the World Health Organization (WHO) determines the age range of adolescents from 10 to 19. Each person physically, mentally, and socially goes through this stage differently depending on their personal experiences, cultural background, and environmental condition. As Chinese American girls who were born in the mainland, then moved to the United States with their family, their perceptions toward themselves could be expressed differently in terms of thoughts and behaviors due to their own experiences that they have encountered. In other words, it refers to a new second generation or immigrant children who start the new journey of their life in the United States before adulthood (Zhou, 1997). In general, children in school-age (6 to 10 year) are in the period of learning and understanding about the concepts of the world around them such as parents, friends, and themselves. Moreover, the end of their childhood starts with the beginning of puberty which is in the stage of preadolescence. Since they have been growing up during this period, the way they perceive the world can reveal struggles, difficulties, and frustrations in the condition of "between-world" (Ling, 1990) due to the various external factors such as parental attention, generation gap, culture conflicts and racial discrimination.

Chinese American stories usually have relation with familial relationship, cross culture, racial discrimination, and hardships. Coming of age is also a significant perspective to discuss. Teenage girls are defined as being a woman in their early stage. During the growing up process of Chinese American girls, it is necessary to consider the problematic issues including lack of parental attention, being under privileged as a Chinese American in White patriarchal society, generation gap and cultural conflict.

Influences of Parental Supervision on Adolescent Development

Parents can be considered as the most important factors of children coming of age psychologically and socially. Parents' attitude and nurture influence the construction of identity of young children. In the early period of settlement in the United States, it takes hard effort to start a new life in a racially and culturally unfamiliar places. It could be understood that discrimination against early Chinese immigrants was raised legally and economically due to their race and origin (Kung, 1962). Due to the underprivileged

of socioeconomic status, finding jobs to earn money is probably the first priority of their needs for the settlement.

For immigrant parents, it is believed that high education and multiple skills would be advantageous for their children to gain various opportunities that can be found in the United States. Children, then, are expected to acquire academic success as a ticket for an ideal life. According to Ling (1990), for a member of a minority group, not only a sense of alienation was the result of being rejected by dominant culture but also to be blamed by their parents.

Amy Tan's *The Bonesetter's Daughter* depicted the process of generation gap, cultural and emotional adaptation, and the construction of aging (Walsh, 2017). This article explains how the author conveys messages through the storytelling of domestic daily practice to reveal the construction of aging in the perspective of international, cultural and emotional processes. Similar to Zhang's short stories, the multinational identity of the characters in the older age becomes evidence to visualize the characters' thoughts. Although the main focus is the understanding of aging among Asian American, it depicts the cultural, emotional and psychological development of a Chinese immigrant's daughter in the story. Methodological implication has relation to the emotional experiences of immigrant women. The study moreover involves storytelling, narrative account, unstructured interviews, and people's memories influencing the analysis. Cameron (2012) suggested that to consider stories and storytelling in the views of power, awareness, and cultural difference allows readers a wider understanding of political, cultural and social perspective upon people's life. In *The Bonesetter's Daughter*, Ruth is a Chinese American woman who struggles in a relationship with her mother, Lu ling, due to her mother' illness and aging. Besides, growing up in a Chinese family with ghost and curse beliefs which are seemingly bizarre to her is not easy. Until Ruth finds her mother's story written to her talking about Lu Ling's past, she gains more understanding of what her mother had been through in relation to the sense of homeland and identity. Walsh (2017) implied that the images of Chinese homeland depicted in Lu ling's memories essentially provide the second generation the reconciliation of Chinese culture. It also plays a crucial role in helping Ruth to manage her emotions and her marriage life. Her mother's storytelling thereby shows the potential of being transformed as a Chinese American daughter to understand and perceive the image of an immigrant woman getting older in an unfamiliar culture.

Due to the strangeness and alienation related to immigrant and Chinese American children, their parents would put a great effort to encourage their children to fit in the target culture. Robert (2016) claims that the solution of Chinese American girl, Ai-lan shown in Buck's literary work, *A House Divide* (1995), is being westernized by their mother to focus on physical appearances or being beautiful girls but they cannot academically and economically contribute anything to the society. However, Robert (2016) argued that westernization is not the right solution for minority families in every case since the expression of sorrow reveals through Ai-lan's mother regret for raising her daughter in the wrong way in order to lift the social status. It can be considered that westernization is the significant process inevitably influencing immigrant children who have been growing up in the United States and the process of westernizing is supported by parental supervision. Also, Chinese American girls can be also influenced by American culture from sociocultural factors to make them accept the new culture as a common way of life.

Wood (2012) also examined the mother-daughter relationship of Chinese American immigrants in Amy Tan's *The Joy Luck Club*. The analysis focuses on shared experiences and stories of place which can equip a mother- daughter relationship influencing an American daughter who seeks for Chinese identity to understand her mother. The frustration of unified relationships significantly affects the identity development and growing up process of Chinese American children. Living in a dominant culture, as immigrant children, they inevitably confront the difficult experiences to reach physical and psychological maturity. Similarly, Leung (2022) analyzed a mother-daughter relationship in Amy Tan's *The Joy Luck Club* that parental pressure led to miscommunication between the mother and daughter. The study shows that mothers' high expectations for their daughters' academic success and becomes the result of tension between generations. Hatzimanolis (1991) focused on the coming of age of immigrant children's issues in Angelika Friend's *Heartland* to see the identity development in terms of gender, race, and class in the dominant society and how the main character constructs immigrant experiences.

Despite immigrant parents putting too high expectations on their children, they pressure themselves on financial opportunity rather than spending time with their children. For this reason, parental attention to their children might be neglected causing struggle in immigrant children coming of age which is related to sociological and psychological development. It becomes a problem for immigrant parents that they might be overwhelmed from managing their life and family since they do not have much social and financial support from the government. Socioeconomic status is a significant obstacle to gain opportunity; for example, language barriers also affect their job opportunity. Therefore, it is possible that immigrant children do not receive adequate parental supervision. They, sometimes, struggle with cultural adaptation, social interaction, and communication issues but they cannot seek for advice from their parents as much as they are supposed to. For this reason, relationships with friends, cousins, relatives, and others also have a strong influence on children's development.

To perceive the clear image of multicultural identities, Ayan (2009) compared two main characters from Amy Tan's *The Hundred Secret Senses* which are Olivia and Kwan. Olivia's story represents Western culture which is materialism and self-centeredness whereas Kwan's story is portrayed as Eastern culture. It emphasizes that culture and value play crucial roles in individuals self-perception and conceptualization leading to identity development. Ayan (2009) defined cultural identity as "the feeling of identity of a group or culture, or of an individual as far as she/he is influenced by her/his belonging to a group or culture" (p.61). On account of culture and identity of a second generation of Chinese American, her analysis aims to focus the two teenage girls who are from different cultures are taught to conceptualize and develop their identities by accepting each other. Sociability and friendship, moreover, significantly influence the coming of age of immigrant children due to the racial and cultural differences from the majority. Olivia and Kwan are sisters who share the same father. Kwan is a daughter of the first wife and moves to the United States when she is eighteen years old while Olivia, a half Chinese American, is a daughter of the second American wife. In the story, it clearly shows that Olivia embraces western culture rather than orientalism; meanwhile, Kwan is represented as Olivia's reflection of origin and ethnicity. Throughout the relationship between Olivia and Kwan, Olivia can integrate her identity with Chinese and American culture even though she feels irritated with Kwan's odd behavior and beliefs. Ayan (2009) commented on the Chinese American second generation that they were the representative of cultural transition as their cultural identities were constructed by Chinese culture that they had not experienced and American culture that made them feel unbelonging; therefore, they possibly could not define identity by themselves. For this reason, Amy Tan's *The Hundred Secret Senses* shows an attempt to explain the identity development of sisters who rely their subjectivity on different cultures.

Peer Relation Dominate to Young People

For children in preadolescence and adolescence, a friend is a person who increase intimate relationships function as a comfort zone where they can expose their identities, personalities, and desires. Generally, adolescence was categorized as "teenage brain" (Jensen and Nutt, 2015) referring to being impulsive, irrational, uncertain and emotional, and peer influence (Sulzer, Thein, and Schmidt, 2018). If you take peer relation as one of the salient factors affecting adolescent development, friendship shows complexity in the process of social interaction. For young people, peers are the social group that they spend most of their time with, especially in a school. Peers' opinions become reliable which influence emotion, attitude, and well-being (Brown and Larson, 2009).

Selection of peers is dependent on similarity and hierarchical status to share common interest and then, to build strong bonds of intimacy. Brown and Larson (2009) also suggested that similarity in terms of preferences, value, and interests can ensure their attachment of relationship. However, once one or the other is aware of a distinctive component of peer relation, bonding in adolescent friendship can be insecure. Young people, sometimes, need acceptance from peers rather than family. Being accepted helps emphasize the sense of belonging to the right place and the right social group. It also allows them to adapt themselves psychologically and socially in the society they live in.

As peer relation is grouped by familiarity and hierarchical status (Brown and Larson, 2009), immigrant children would be more comfortable to socialize and fraternize with people in the same group which could be a minority community because they have similar background of second-generation

immigrants who have encounter discrimination, alienation and bicultural identity. Peer groups characterized by familiarity is the concept of "a psychological sense of community" (Fitzpatrick and Ritchey, 2015, p. 150), which is referred to the perception that a person is included in social network which bonding between people in society is created with people who share similar historical background and identity (Nowell & Boyd, 2010). That is to say, in many short stories of Zhang's collection, for example, characters and their friends in the stories would share the same characteristics such as root, gender, and age.

Immigrant Children and the New Culture

There are some cultural problematic concerns with young Chinese American immigrants which are needed to consider. First, for immigrants, especially first and second-generation immigrants, they are perceived to be an outsider considering their origin and appearance despite being born or raised in the United States. As their social status is a minority group which is legally objected from various opportunities and is subjected to discrimination, young immigrants encounter cultural separation and alienation of being a member in their own country where they have grown up. Kung (1962) claimed that people from a host country perceive immigrants as an enemy when a great number of arrivals exploit economic resources which lead to obstacles against assimilation for immigrant groups. Therefore, the sense of being separated from the dominant culture is against young immigrant people since the construction of their identity becomes more complicated with "multiple sense of belonging" (Dusi, Messetti, & Falcón, 2015, p. 564). It is supported that "American-born Chinese Americans" feel alienated living in the United States since their English as a native becomes a question of how they can acquire perfect English (Ling, 1990). This misperception can lead them into the feeling of alienation as they are usually treated as a foreigner who is assumed not be able to speak English as a native speaker.

According to their study, it is claimed that immigrant children are not totally accepted and considered as being different. However, young immigrants find a sense of detachment to their homeland culture since they have less experiences and social interaction with the old culture. They can observe and learn their old culture from familial practices and transitional values influenced by their parents. Fitzpatrick and Ritchey (2015) suggested the positive aspect of being in-between two different cultures are that some families allow children to gain input about their old culture from telling stories, engaging festive traditions. The inclusiveness of old culture has an influence on immigrant children's cultural identities during the growing up process as they can expose their identities in both cultures. For this reason, Ayan (2009) commented that

> "They had to formulate their cultural identities by confronting with their Chinese culture that they have not observed but heard of and American culture that they thought they belonged to but could not be totally become part of, through the memory bridge that helps the transition between the past and present places. Thus, some of the second generation positioned themselves to serve as ambassadors to both their parents and their dominant culture. (p.62)"

It can be noted that immigrant children or the second generation are represented as a mediator of cultural transition. It is more complicated for immigrant parents to account for assimilation to a new culture.

METHOD AND REVIEW OF PRIMARY TEXT: COMING OF AGE IN YOUNG CHINESE IMMIGRANT GIRLS

This study examines the psychological effect and coming of age in young Chinese immigrant Girls, the main characters in Zhang's short stories *Sour Heart*. We employ the method of content analysis and interpretation as the qualitative research methods. The content analysis focuses on the theme of familial relationship, and poverty which affects a young person changing child stage to adulthood.

In literature of coming of age, being an immigrant second generation offers dominant features to explore the ways that the characters believe and act relating to psychological processes during growing up. Coming of age of Chinese American girls reflects various factors which influence their perception towards the world around them and the way that people treat them. Benyei (2016) agrees that every literary work can deliver knowledge and aspect of psychology in one way or another and it represents psychological processes. Hereafter, it is inevitable to avoid interpretations from reference to psychological aspects.

Moreover, to understand their thoughts and behaviors, psychological aspect helps clarify the development stage of adolescents depicted in Zhang's literary works. Wright (2003) agrees that psychoanalytic lenses help explore the combination of author's, characters', and readers' mind. Lastly, this section reviews the primary text to manifest the relation of coming of age of Chinese American teenagers.

Coming of age

As we have discussed the relation of the development stage to adulthood, psychological theory involves human development in every stage since the age of infant to adulthood. Tyson (2006) notes that the pattern of experiences in the stage of childhood and adolescence and adult behaviour are directly reflected in the early experiences. Young people initially create meanings of their life during the transition period through experiences constructed by social and cultural systems to understand their own identity.

To explore coming of age, the concept of sense of belonging and psychological alienation can help elaborate an author's emotions expressed in their literary works through the main character. In Zhang's short stories, we can see that the language used is inexpressible to outside readers. The language used in Zhang's short stories structured in long sentence. For example, in the first story, *We Love You Crispina,* she described the financial status of her family as "my father, realizing she'd been waiting all month to ask for a single ice cream, buys her the ice cream and also a rhinestone anklet, which is why there's never any money for a toilet plunger (4)." The language is raw and sour as if the main characters as Chinese immigrant children or second generation reflect their own thoughts to the world that they lived in.

Young children basically struggle in understanding themselves and seeking their own identity. The sense of loss and being "the other" can cause low self-esteem and insecurity among young people during the transformation and identity development stage. When young people have conflicted feelings, for example about family, they perceive their place in the family and can define themselves as "I'm a failure", "I'm unlovable" or "I'm responsible for my parents' problems" (Tyson, 2006, p.14). This sense of birth of unconsciousness can happen to immigrant children that they are the cause of family hardships, or they are problem makers. Alder considers this behaviour as *The Inferiority Complex* which makes a person perceive himself/herself inferior to others. This behaviour may be caused by parental conflicts or failures. Moreover, young people might feel insecure of finding their identity and losing self-esteem. They sometimes behave differently and have conflicts with themselves. As immigrant children, they possibly find themselves struggling in oppressive dominant structure; then, put effort to resist the cultural repression and value to empower themselves. According to Fox (2010) agrees "coming of age presents an opportunity to grow toward adulthood and gain certain power and privileges, while simultaneously losing certain power and privileges (6)."

The study aims to understand people's mind and solve psychological problems which influence human behaviors. We would like to explore how unresolved painful experiences, fear, guilt, desires, and conflict can be affected to an individual as an immigrant children portrayed from the short stories. We, as human beings, also confront fear, love, desire, and needs which sometimes we cannot unconsciously control.

Review of Primary text

First, we study Zhang's collection of short stories named *Sour Heart*. It is the story about immigrant girls in a Chinese family narrating about their childhood experiences after migrating and settling in New York since 3-year-old until adulthood. Each story is narrated through the protagonist's perspective or writer's persona. In other words, a first-person point of view offers the sense of the author telling her personal story, experience, or memoir to the readers. There are seven short stories in this collection as noted in the following lists:

1. ***We Love You Crispina***
2. *The Empty the Empty the Empty*
3. *Our Mothers Before Them*
4. ***The Evolution of My Brother***
5. ***My Days and Nights of Terror***
6. *Why Were They Throwing Brick*
7. ***You Fell into the River and I Saved You***

Zhang conveys similar messages through each character in each story. The stories are organized in the theme of family relationship, familial inheritance, immigrant experiences, and collective coming of age. Protagonists of each story share the familiar characteristics which are "sour and sweet, wild and willful who bear witness to the journeys of their families (https://www.theguardian.com)." We as a reader can observe the character development and their perspective through the stories.

The narrators of each story are connected by a Washington Heights apartment, which immigrants recently use as temporary housing when arriving in the United States. The first and the last story *We Love You Crispina* and *You Fell into the River and I Saved You*! which are the stories about the family of Christina, the narrator, but the last one is told by an adult version of Christina who recalled her memories about herself and family. The first story takes place in a building in Bushwick surrounded by drug houses and drug dealers. The building is where Christina and her parents live. Her family has moved around from place to place but those places are surrounded with a poor environment and unsafety. When she was walking to the bus stop, she was attacked by Korean gangsters yelling at her and scaring her. It shows that her family lacks financial support to afford a better place to live which is far away from drugs, violence, and crime. Moreover, negative, and cruel experiences of immigrants are reflected in *My Days and Nights of Terror*. Mande is aware of racial discrimination against minority group and violence in a school that she has experienced by herself.

In *Empty Empty Empty*, this story reveals the teenage behaviors intensively involved by peer influence. Lucy, a confident and mean girl who resents her cousin, Frangie, for stealing her mother's love. This shows the intensive childhood friendship which leads to negative competition. Also, this story explores the way of girls' learning their bodies to understand sexual development. They learn to explore their identities to understand themselves and their position in the world. Girls in this age desire to make decisions for being the one they want to be. Jenny in *The Evolution of My Brother,* a fifteen-year-old girl, also longs for independence leaving the family to California for studying philosophy. She wants to distance herself from her family and spend her own life independently without parental protection. Christina also exposed her rebellion that "I shrugged them off and longed to be somewhere where I could say anything I wanted and still be left alone (p.262)."

Young immigrants not only find themselves in the place of a new country, but they also maintain relations with their homeland. In *Our Mothers Before Them*, Anne reminds of her mother's story during the Chinese Cultural Revolution in 1966 moving between China and the United States. She is the witness of her family inheritance passed down for generations that the former arrivals had left for the next generation. Similar to Stacey in *Why They Were Throwing a Brick!* the narrator and grandmother are really close. One day the narrator had to follow her parents to America. Her parents also bring grandma to live in the United States together. However, the parents want to send grandma back to China to live with her husband. In the story, Stacey's grandmother tells her past reflecting the traditional Chinese culture which makes Stacy understands and touches her origin intensively. At the age of nine, sometimes, they unconsciously find themselves devalued as a burden of the family. Cristina feels guilty for her parents for sacrificing themselves for the whole family to get a better life while she is thoughtless and selfish. It can be explained that the feeling of guilt makes her feel that she is not good enough for this family. Christina was treated as the 'other' of the society where she is supposed to feel the sense of belonging. As she was perceived as a child of a Chinese immigrant family, she was sent back to ESL even though she passed ESL for two times with an excellent result complimented by her first ESL teacher.

In the collection of short stories composed by Jenny Zhang, readers can see how these girls have grown up in the new country as an immigrant daughter of Chinese families. Childhood experiences reveal their thoughts of poor standard of living, insecurity, sexual and racial discrimination, and exploration of their own identity. Psychological development also is reflected through the stories that the narrators talk about their childhood in the past and what was in their mind when they were young and what they learn from childhood experiences.

DATA ANALYSIS

The examination of coming of age taking painful experiences as immigrant children in the United States was interpreted as how these experiences affect the characters' development stage. Five short stories of the book which are *We Love You Crispina, The Empty the Empty the Empty, The Evolution of My Brother, My Days and Nights of Terror, and You Fell into the River and I Saved You* were selected and analyzed by content analysis to identify the patterns, theme, and implicit meaning of the text. The psychological patterns of behaviors found in all the main characters of each short story were collected. Then, the data were analyzed to examine the mutual psychological difficulty that influenced the characters' coming of age as immigrant children. The analysis is going to align with the fundamental concept of multiple sense of belonging, alienation, in-between culture, expanding to other concepts such as defenses, anxiety, and fear.

ANALYSIS

Zhang's short stories are narrated from her own experiences when she first arrived at the United States with her family. In the stories, it takes place in New York in the 1990s in the lives of recently arrived Chinese families soon after the Tiananmen Square massacre. The immigrant parents are artists, filmmakers, writers, and poets whose youth and careers and family bonds have been taken away by the mainland's massacre. They push their lives to the USA in the hope of rebuilding what had been lost, and what might still be restored. However, the settlement is not smooth and easy. The immigrant children are also suffering, and they struggle living their life in the U.S. growing up "in-between" culture to understand their own identity. In these short stories, the way her characters experience the trauma in their lives play out as both physical and psychological expressions, in strange and sometimes shocking ways.

To understand immigrant coming of age, we investigate characters' painful experiences in terms of psychoanalysis which is Freud's 'unconscious'. Family institution and 'in-between' culture play important roles in psychological development that we unconsciously behave without admitting ourselves to repression, conflict, and pain.

Tension of immigrant Children growing up in Chinese Family

A family is very important in psychoanalytic theory because we are a product of the role that we are given in the family complex. Tyson (2006) explained that unconscious gives the perception of oneself in the family and react to themselves that they are failure, unwanted, and unlovable. The main characters in Zhang's short story also unconsciously perceive themselves in that way. This is the evident from the first story where Zhang describes the difficulty of immigrant children. In *We Love You Crispina,* Christina cannot imagine how she can be better than her parents and live her life beyond that of them. That is the dream and expectation of Christina as an Asian immigrant second generation:

> "…I would answer them in English, which I also wasn't so good at, but it was understood that while I could still improve in either language, my parents could not, they were on a road to nowhere, the wall was right up against them, so it was up to me to get really good, it was up to me to shine and that scared me because I wanted to stay behind with them, I didn't want to go any further than they could go (6)."

For Christina, the hardship is also poverty and an unfamiliar environment. So, her parents become the comfort zone for her that she can rely on. As an immigrant child, she unconsciously experiences *Anxiety* which can identify her core issue. This is considered development stages that the character goes through *Fear of abandonment* experiences, and she is going to be abandoned if she is not good enough. For this reason, these children will have more pressure to push themselves harder to be good or the best in what their parent expect.

As being a child of Chinese immigrants, they want to be accepted from other people in American society aside from their parents. English is the main goal of Chinese immigrant family to push their children to become successful. In *My Days and Nights of Terror,* Mande spoke to herself that "I was fed, and I was looked after and I was encouraged to be perfect, and I was told over and over that life would always improve, that this was how anyone at all as supposed to live (220)." Mande struggles to push herself speaking English perfectly and she realizes that she cannot resolve this fear unless she has to be free from this world. These painful experiences are part of maturing and establishing our own identities as second-

generation immigrants has internalized for academic to become obliged to desire familial approval which linked to cause of their repressed wounds, fears, and guilt.

Since Chinese immigrants suffered from social status and lack of opportunity in the U.S., immigrant parents may put pressure to their children to achieve educational success. Lee and Lock (2007) argued that Asian parents significantly admired academic achievement more than non-Asian parents. This pressure would push the second-generation immigrant into the psychological stage of *insecurity* leading to inability to be aware of their own feelings and identities (Tyson, 2006). In American Society at that time had negative perception towards immigrants. Immigrant has identified as a 'high-risk population' involving with drug abuse, sex, pregnancy, and crime. This is mentioned in the short story about the discrimination that the author had experienced when she was a kid and expressed through Mande's thought.

> "America was crawling with rapist and addicts, fucked-up nurses at free clinics who gave you live dose of HIV instead of the measles vaccine because they didn't like the shape of your eyes or because they didn't like the way your glasses slipped down the low bridge of your nose or how your head sloped in the back while the front if your face was as flat as an ice hockey rink (185)."

That is why immigrant parents have pressure on their children to get the best in education because they believe that education help them to be accepted and to live a better life. Mande from *My Days and Nights of Terror* perceived herself as "the okay kids, not the bright kids (192)." Besides, her father is disappointed that she is not in the gifted class. This story shows that the character is lost and insecure. She always prays to God to ask for *spiritual support.*

> "I know it's wrong to demand of you…. But I'm so lost. I'm afraid every night before I go to sleep, and I am afraid every morning when I wake. Is it normal to wake up disappointed I've survived another day? Sometimes I think it would be better not to wake up at all (224)."

The way she speaks to God reflects the process of self-defense mechanism to prevent oneself from anxiety which is repression, whereby a threatening or forbidden thought is taken out of consciousness and pushed into the unconscious (Susanu, 2020).

Second generation immigrant children also face the familial pressure in the sense of lack of parental care. In Zhang short stories, the mutual characteristics of immigrant family is low financial status. This issue forces immigrant parents to work hard to earn money to support the whole family but they do not have time for their children. Mande is aware that her parents sacrifice their life and dream to survive in the United States and work hard to support her to have better life. Mande is the character that represents a driving force for their parents to express their unconscious that desires for a better life.

> "I waited for my mom to reveal that, in fact, I was one of the things in her life that kept her from being happy, from realizing all of her dreams, from being the sort of full, brilliantly expansive, and interminably, layered person she wanted to be, that I was the primary cause of her imprisonment (200)."

The way she blames herself to be a burden of her family represents insecurity which is the core issue of unconscious. She believed that without her, her mother can live her own life and pursue their own dream. Christina, the narrator of the first story, also looks at herself as a burden which her parents sacrificed for her and family. Similarly, Lucy, the main character in *The Empty the Empty the Empty,* expresses her guilty to be her parents' daughter because she sometime feels lonely when her parents still were at work, or she asked for something that her parents could not effort for her. Lucy said to herself "I immediately regretted asking. She had this way of looking at me thar made me feel like I had to apologize for being her daughter… (51)."

In the last story *You Fell into the River and I Saved You,* Christina in fourteen years old has distanced from her parents and feel unwanted to her parents. During she was back in China, her mother was pregnant, and she was going to be a sister. This conflict shows that she does not realize that she still long for the love that she needs when she was a child. Christina speaks to herself: "I was sorry for it all and sorry for having been born, that I believed in God now… (266)."

We can see that girls from Zhang's short stories encountered painful experiences from familial pressure either from pressure by Asian parents or lack of parental care caused by poverty,

discrimination, and lack of opportunity. The author reflects unresolved conflicts in her childhood experiences which are unconscious desires to be the only child and the beloved one to their parents, be accepted to the society that they do not belong to. Besides the protagonists in each short stories represent the fear of Chinese immigrant children who cope with their families. We may argue that the hardships of immigrant children have sometimes been endured by and within families.

In-between Identity of Chinese American Children

In the collection of short stories *Sour Heart,* the word *sour* is mentioned many times to emphasize the characteristics of the protagonist in the short stories. Christina, the main character in *We Love You Crispina and You Fell into the River and I Saved You,* is called *Sour Heart* or *Sour* by her parents. However, sour also reflects the attitudes of the different girls who are all the daughters of Chinese American immigrants in the short stories. They are *sour* because they have faced traumatic childhood experiences including being bullied by other children, violence, familial pressure, racism, poverty, and alienation. We can feel that the character has confusion in their own identity and express in *sour* way. Christina expressed to herself when she had a family reunion talking about moving back to Shanghai separating from her father "I wanted to feel tenderness. I wanted to be more generous, but I could not. I was sure I had always been sour (263)." Christina in fourteen years old reflected herself to be the one that she was unable to be. It is because the unresolved core issue when she was a kid.

Most Chinese American immigrant children may struggle in finding their own identity to understand where they belong and how they can feel secure. Christina could not find herself related to both Chinese and American culture since she insisted that she as a Chinese-born girl would not speak Chinese perfectly because she needs to be accepted as an American not Chinese.

> "I was quite not because I didn't have anything to say, but because I was overwhelmed by it all, and I didn't want to anyone to pity me or laugh at me or throw their hands up in the air at the absurdity of a Chinese person who couldn't speak Chinese. I didn't want to promise to learn Chinese perfectly because I still needed people in America to look at me and know instantly that I spoke perfect English instead of looking at me and assuming that I didn't know how just because I was quiet (18)."

The expression of the main character reflects the psychological stage which we can considered as regression relating to her painful experiences from being a Chinese immigrant. Second generation immigrant revealed their struggles to blend in with American culture while they are facing difficulties to relate themselves with Chinese culture that they barely know about. For this reason, she tries to exclude herself from Chinese languages to hide her root identity. In this situation, she would like to stay away from this pressure such as learning Chinese perfectly that may cause anxiety.

In *My Days and Nights of Terror,* Mande looked at her friend and consciously questioned to her own identity: "she looked like an alien (but then again, I was an alien, too that was the box had to check in every form. Did alien have unalienable rights? Were we entitled to liberty and justice?) Alien or not (180)." It reflects that Mande found herself disconnect to American society. The way she describes her friend as a parasite which was "too helpless, too tasty, and succulent to blend in, to not to be noticed, to not be someone's prey (179.)" reflects her unconscious that she would want to know and accept it. This is the process of displacement transferring hidden emotions to manifest at one another (Emmett and Veeder, 2021). Mande also has issue to blend-in when she had to go to college. She questioned to herself:

> "How was I going to be afraid of not going to Harvard when I was afraid to look people in the eye in the hallways at school because everyone in the middle school was either in a gang or going to get beat up by someone in a gang, and I guess which category I belonged to (218)?"

She imagined when she had to move to new school or go to college. As she mentioned, we can see that people who do not belong to the group can be the victim of violence. To survive, she has to blend in herself to the group which may not someone that she would like to be. For Chinese American children, it is difficult to find the place where they belong and be accepted.

Since second generation immigrant children are raised in the American culture, somehow it is inevitable to for them to reveal their desire to be 'the other' and reject their oneself. In *Evolution of My Brother,* Jenny wished she was a white girl who had white parents. She said "I envied white girls whose relationship with their parents were so abysmal that they could never disappoint them. I want white parents who didn't care where I went or what I did, parents who encourage me to leave home instead of guilting me into staying their kid forever (155)." It shows that she tries to get away from her family and refuses one of her own identities which clings to Chinese culture. It is that because she would like to flee from pain, fear and suffering caused by struggling between two cultures. This internal conflict would drive her to fulfil her desire to be someone else that she has longed to. She said "But now I wanted to be free. I wanted to be free to be selfish and self-destructive and indulgent like the white girl at high school my parents worked so hard to get me into…all I did was make me want to get away from my family (154)." She unconsciously behaves in that way because her pain and guilt are repressed. If she could not realize the cause of pain she would get distance from her family, her identity.

DISCUSSION & CONCLUSION

This study is attempted to analyze the psychological effect on Chinese American Children growing up the in the United States. These five short stories in the Zhang's collection narrate the characters' life and experience as Chinese immigrant children who were born in China and moved to the United States when there were young. In *We Love You Crispina, My Days and Nights of Terror and You Fell into the River and I Saved You,* we can understand the characters' experiences, thoughts, feelings towards themselves that shaped by their familial relation and parental supervision, and cultural assimilation.

The coming of age and immigrant children is the universal theme that widely published in American literature industry. Many literary works have discussed about Asian American literary works telling story about discrimination, poverty, cultural conflict, and family issues. In this research, we apply psychological concepts such as loss of sense of belonging and alienation to understand Chinese immigrant children's behaviors, feeling and thoughts which shape them to become a oneself as the process of coming of age. These concept helps readers to shed light on painful experiences that Chinese immigrant children have faced. It shows in the form of fear, guilt, and insecurity caused by psychological unresolved issues.

It is inevitable that Chinese immigrant children may deal with familial conflicts caused by their parents. For immigrant parents, high education would be the way that their children can escape from struggles as an immigrant in the United States. We can see many stories such as Amy Tan's *The Joy Luck Club* express the tension that immigrant children need to bear from their parent. It also demonstrates the generation gap relate to inability of Chinese American daughter to share cultural background. We can also understand the similar issues in Zhang's short stories.

For the second-generation immigrant children, Christina, for instant, the tension came from poverty moving from sharing apartment to another. Lying between her family was the only thing that could comfort her, and she could not live without their parents. However, it is inevitable for Christina to growing up apart from their immigrant parents. Since immigrant children would fulfill their parents' wish to have better life than their parent. They would be inevitably pushed away and leave their parents behind to seek success as their parents' wish. Then, which identity that these immigrant children should adhere to. In the last story, *You Fell into the River and I Saved You!* Christina is grown up. We can see her coming of age through the story. At the beginning, she would like to be free from her family. When she became an adult, she understands the cause of her painful experience and understand how much her parents loved her. During family reunion, she came back home and spend their time with her family and finally find her true self.

The major topic for immigrant children is in-between identity since they are struggling to identify themselves as a part for dominant culture and hardly find themselves related to their parents' origin. Ayan (2009) study agreed that the Chinese immigrant children have sense of unbelonging towards American culture. As we also can see from Zhang's story that Christina thought that she cannot do well for both Chinese and English which refer to the loss of identity. Similar to Mande in *My Days*

and Nights of Terror, she finds herself disconnect to her friend in the college and afraid to blend in with American Society.

In *The Evolution of My Brother,* Jenny is a character that wants to leave her family. She realizes that leaving her family means leaving her 'self' behind. Moreover, the characters recognize themselves when they learn from sibling relationships and realize that she cannot avoid herself as being a daughter and a sister. In *The Empty the Empty the Empty,* the main character discovers herself which is part of the coming of age with friend and peer pressure.

Based on the psychological problems projected in young Chinese immigrant experiences, the result can be summarized as follows: First, immigrant children in the short stories mostly experience the anxiety from pressure and tension of being progress beyond their parents. They are aware how much their parents sacrifice for her, for family, for better life, they might fear that they cannot dedicate themselves as their parents did. This makes them fear to be abandoned because they were not good enough. Second, immigrant parents sometimes push to much expectation on their children. Immigrant children then pressure themselves to be better. Somehow, they realize that they cannot fulfil their parents dream so they look down on themselves and believe that they are less worthy than other people. Low-self-esteem can become the core issue of immigrant children in the growing up process. Lastly, we can see that the characters in the short stories explore the fear of trying to find their identities as being Chinese American children who has confusion which cultural identity they should adhere to. It is not easy for them to develop themselves to be part for dominant culture. As a reader, we can feel the insecurity and inability to understand their emotions and personalities that they would like to be through the author's journey portrayed in the short stories.

Zhang narrates the bittersweet immigrant experiences through the eyes of five different Chinese American girls and this study help us to understand the coming of age of Chinese American immigrants through the lens of psychoanalytic criticism. We can realize that what they unconsciously behave and construct their own identity in the in-between society which is the crucial part in the process of becoming an adult. The loss and insecurity we can feel from these short stories arise the empathy and understanding toward immigrant children and embrace the differences in the society.

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Hotel Business Entrepreneurs in Chiang Mai Post-covid-19 Pandemic: Adaptation Competitive Strategies for Applying a Digital Platform

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ABSTRACT

The significance of digital platforms to the hospitality industry has grown recently. Hotels must compete with one another, particularly in the hotel industry, to draw in travellers. Inferior hotels lose out to those that are not competitive when it comes to bookings from tourists. Even with a wealth of research on digital platforms in the travel sector, knowledge about digital business technology use in hotels remains necessary, particularly in Chiang Mai province in light of the COVID-19 crisis. By analysing the effects of digitalization hotels in Chiang Mai and the variables influencing their use of digital business technologies, this study seeks to close this gap in the literature. This paper will explore a variety of important issues, such as which digital business technologies are now employed in Chiang Mai's small hotels, what influences their adoption, and how that adoption influences the success of the firm. In order to improve their hotel's performance and keep their competitiveness in a market that is changing quickly, Chiang Mai hotel owners and managers will find useful information from this research when making decisions about adopting and using digital business technology. Digital platforms for integrating solutions into hospitality operations, preserving their sustainability and relevance, and boosting profitability in the post-COVID era will be the focus of the research.

KEYWORDS: Hotel business, Digital platforms, Competitiveness, Hospitality industry.

INTRODUCTION

The spread of the COVID-19 virus since the beginning of 2020 has impacted society and the economy. It causes life changes that have never happened before. It also causes serious economic damage on a large scale. Importantly, this crisis has created new experiences. That may cause many types of businesses to be unable to compete or survive if they are still stuck in the old model. Because consumer behaviour has changed. Therefore, the business sector must adapt and change accordingly. To increase the potential of businesses to stand out and survive (Zhang et al., 2022).

COVID-19 situation, as a result, hotels in Chiang Mai are continuously affected. With a hotel closure percentage of 50%, affected hotel operators are unable to resume business (Chen & Kitingern, 2020). Since the number of tourists is still low, it is not worth the various costs and expenses incurred, including the financial problems that will be used to revive the business from the impact of COVID-19. Because it requires a large amount of investment, there must be cash flow for various expenses, including labour, water, electricity, and interest from financial institutions. (The Standard News,2022)

In 2022, measures to control COVID-19 disease in Thailand and around the world there will be more relaxation (Klinsrisuk, & Pechdin, 2022). Thai tourism has begun to recover, resulting in more tourists visiting Thailand, Mrs. Laead Bungsrithong, Advisor to the President of the Thai Hotels Association. (Upper Northern Region) revealed that in the 4th quarter of 2022, the past occupancy rate in Chiang Mai was considered very good. In October last year, Occupancy was at 70 percent in November. The occupancy rate is 75 percent; In December it was 80-90 percent. (Post today news,2023)

When faced with the above situation. This research aims to provide valuable information for hotel owners and managers in Chiang Mai to make informed decisions regarding adopting and implementing digital business technologies to enhance their hotel's performance and maintain competitiveness in a rapidly

changing industry. The research will study digital platforms for implementing solutions within hospitality practices.

RESEARCH OBJECTIVES
1. To study the use of digital platforms in the hotel business in Chiang Mai.
2. To propose guidelines for developing a digital platform to create a competitive advantage for the hotel business in Chiang Mai.

LITERATURE REVIEW

The COVID-19 pandemic has significantly and permanently impacted the hospitality industry. Hoteliers want to innovate their business models to increase competitiveness after the crisis (Chanyasak et al., 2022). This has led to a greater emphasis on adopting artificial intelligence (AI) and automation, which may include tasks such as booking, check-in, check-out, and other guest-facing services, as well as internal processes like accounting, inventory management, and more. Using AI and automation promotes social distancing and protects guests and staff. Secondly, hygiene and cleanliness are essential for customers and staff and are helpful in the recovery process in the post-COVID-19 era. Studies have shown that customers are positively influenced by hygiene and cleanliness while purchasing services (Thanapotivirat, & Jithpakdeepornrat, 2020).

Today's hospitality is transforming into a 100% digital technology-enabled industry powered by online, mobile, cloud, IoT, AI, and blockchain tools and applications. Digital technology is making its way into every aspect of the industry: hotel operations, guest services and communications, revenue management, distribution, CRM, and marketing. Hoteliers must understand, know, and use digital tech solutions in their everyday environment and be able to assess, evaluate, recommend, and acquire technology solutions to improve guest satisfaction, operational efficiencies, productivity, customer service, and revenue (Starkov, 2019). In the hospitality industry, the Internet of Things (IoT) provides integrated services, such as automated door locks, light switches, electric blinds, and voice-assistant devices connected to a network. These allow customers to control or monitor their devices from a central server, such as a mobile phone or a tablet. Moreover, IoT goes beyond convenience and provides more personalized and customized service. It obtains real-time data through continuous tracking from various devices, as well as a collection of customer information that was previously unavailable, such as preferences, routines, and habits (Dwivedi et al., 2022). On the one hand, IoT can collect customers' preferences for in-room features, and the data can then be used to customize the room settings for their next stay (Ineson et al., 2019). On the other hand, IoT with locational information can send real-time personalized recommendations to customers based on their stored preferences. For example, customers may receive messages or advertisements about nearby tourist attractions, local restaurants, or transportation options when they are geographically close to the business or property, based on their preferences, thus improving customer satisfaction through personalized and customized recommendations (Zhu, Wang, & Cheng, 2021).

RESEARCH METHODOLOGY

This research will use qualitative research by questionnaire and then analyze data to conclude. From a study of Hotel Business in Chiang Mai, there are 1091 hotels, based on data from Chiangmai Provincial Administration Organization 2023. There is a research methodology. These are divided into 4 topics as follows:

1. Research scope: A questionnaire used for asking by the owner and manager of the hotel, divided into 4 parts as follows:

Part 1. The questionnaire on general information.
Part 2. The questionnaire on the behaviour of using digital platforms.
Part 3. The questionnaire on the quality of digital platforms
Part 4. Information suggestions

2. Population and sample: The number of samples suitable for the calculation, and the sample size used in the research were determined using the Taro Yamane sample size formula (1973), and the sample size was determined using 95 percent confidence and allowed. There was a sampling error of 5% or 0.05.

Add the formula (Equation)

$$n = \frac{1,091}{1 + 1,091(0.05)2}$$

$$n = 293 \text{ people}$$

The calculated sample group was 293 people, but to prevent data loss, the researcher increased the number to 400 people.

3. Data collection: The researcher collected data from 2 sources. Primary data is a type of data that is collected by researchers directly from main sources through questionnaires. Secondary data research from documents, books, articles, and related research.

4. Data analysis: The statistics used in this study data used the following statistical values: percentage, frequency, mean (X), and standard deviation (S.D.) for data analysis (Mishra et al., 2019). To describe the information presented in the form of a descriptive table.

RESULT

Study on Hotel Business Entrepreneurs in Chiang Mai Post-COVID-19 Pandemic: Adaptation Competitive Strategies for Applying a Digital Platform, the researcher presented the results of the data analysis as follows.

Part 1 General Information

Part 2 Questionnaire on Behavior of using digital platforms.

Part 3 Questionnaire on Quality of Digital Platforms

Part 4 Hypothesis testing the importance of Quality of Digital platforms.

Part 5 Guidelines for Developing a Digital Platform to Create a Competitive Advantage for The Hotel Business in Chiang Mai.

Part 1 General Information.

It was found that 223 respondents were male, accounting for 55.75 percent show In Figure 1. Most were between the ages of 31 - 40 years, with 153 cases, accounting for 38.25 percent Indicated in Figure 2. There were 282 bachelor's degree studies, accounting for 70.50 percent. And Display in Figure 3 were Position Management of Department, 147 cases, accounting for 36.75 percent illustrate in Figure 4. Most had a Duration for Work of 3 – 5 years, totaling 172 cases, accounting for 43.00 percent show in Figure 5.
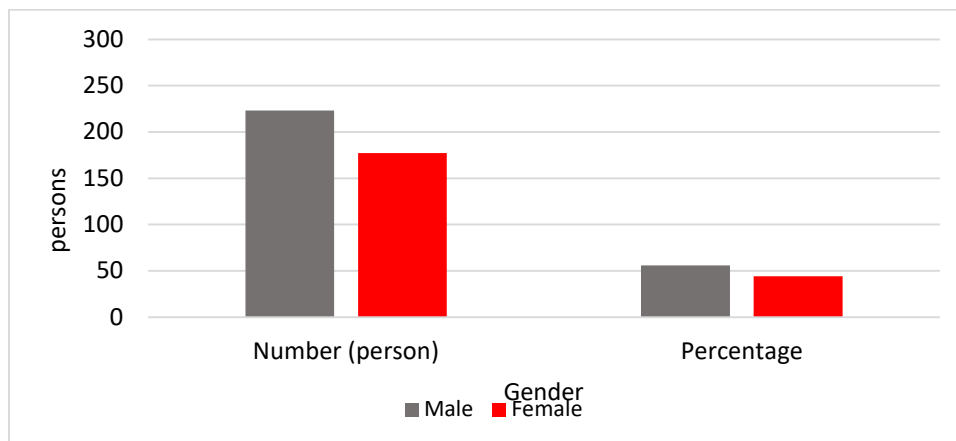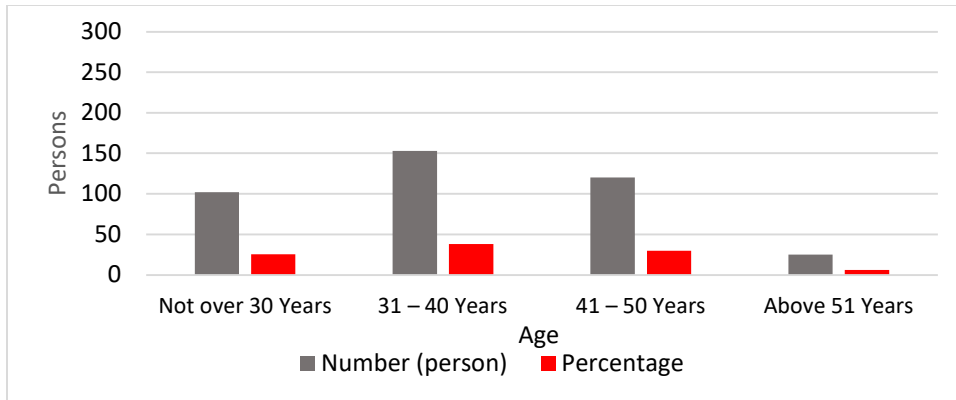

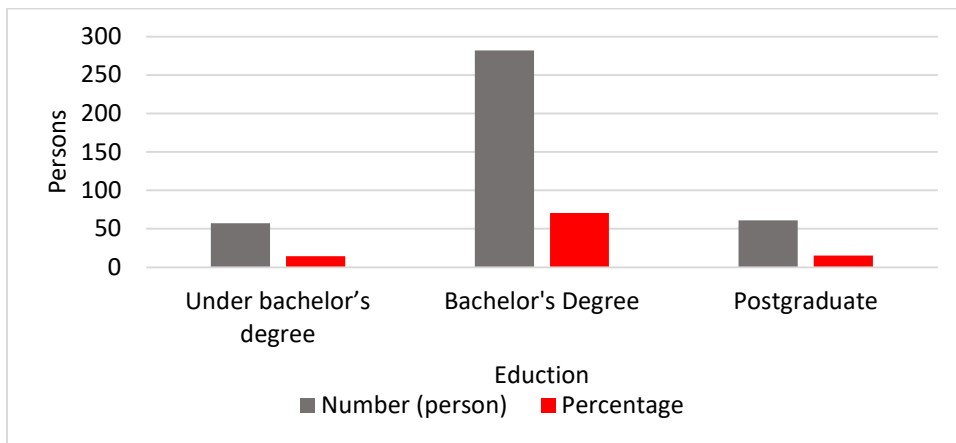**Figure 1: Gender for Questionnaire**

Figure 2: Age for Questionnaire

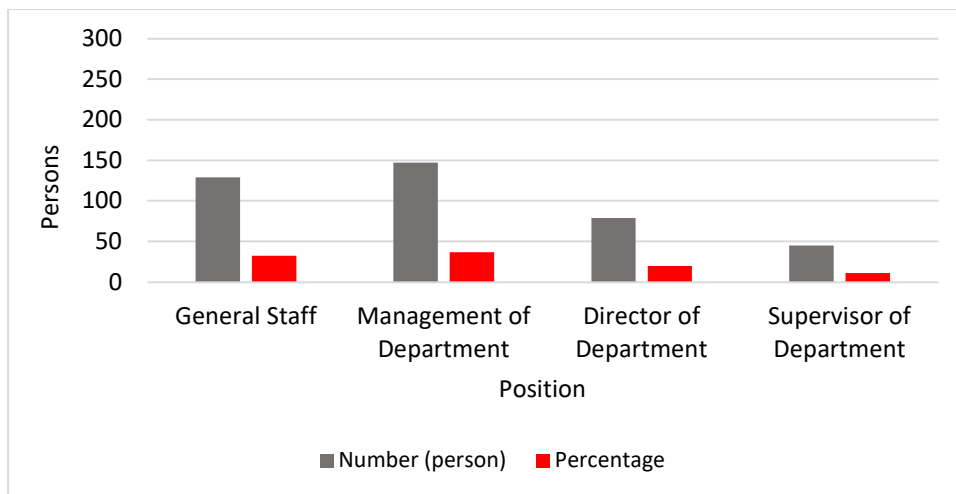**Figure 3: Education for Questionnaire**

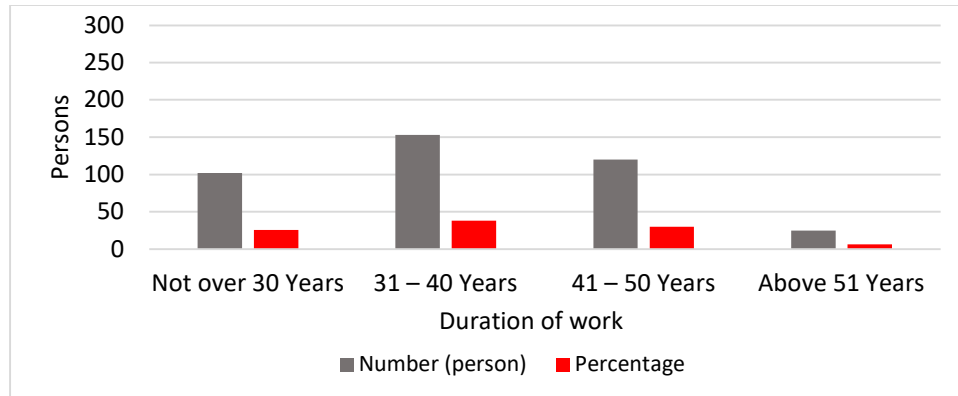**Figure 4: Position for Questionnaire**

Figure 5: Duration for Work

Part 2 Questionnaire on Behavior of using digital platforms.

It was found that the majority of respondents chose to use the Digital Platform type, namely Property Management System (PMS), in 71 cases, accounting for 17.75 percent exhibit in Table 1. The reason for choosing to use the Digital Platform was to directly reach the target group, 153 cases show in Figure 3, accounting for 38.25 percent Screening in Table 2. As for opportunities to use desire to create a public relations promotion, 128 cases, account for 29.22 percent establish In Table 4. The amount that can be paid for the platform: The amount used to purchase the Digital Platform each time is 5,000 - 10,000 baht, 208 cases, accounting for 52.00 percent Show in Table 5.

Table 1 Type of Digital Platform You Choose to Use

Type of Digital Platform You Choose to Use	Number (person)	Percentage
Property Management System (PMS)	71	17.75
Channel Manager	50	12.50
Booking Engines	26	6.50
Digital Marketing Tools	55	13.75
Analytics and Reporting Tools	44	11.00
Guest Engagement Platforms	39	9.75
Customer Relationship Management (CRM) System	25	6.25
Revenue Management System (RMS)	33	8.25
Website and Mobile App	28	7.00
Online Reputation Management (ORM)	29	7.25
Total	**400**	**100.00**

Table 2 Reason for choosing to use the digital platform

The Reason for Choosing to Use the Digital Platform	Number (person)	Percentage
Easy to use	143	35.75
Reaching the target group directly	153	38.25
There are various service options	104	26.00
Total	**400**	**100.00**

Table 3 Who influences in deciding to use digital platforms

Who influences in decision to use digital platforms	Number (person)	Percentage
Myself	69	17.25
Family	42	10.50
Friend / Leader	94	23.50

Who influences in decision to use digital platforms	Number (person)	Percentage
Celebrities or famous people	93	23.25
Platform Owner / Salesperson	102	25.50
Total	**400**	**100.00**

Table 4 What occasions do you choose to use digital platforms.

What Occasions do you choose to use Digital Platforms	Frequency (person)	Percentage
Want to know information about a tourist's stay	72	16.44
Want to create a promotion for public relations	128	29.22
Want to compare prices with competitors	123	28.08
Guideline in planning the hotel's strategy	115	26.26
Total	**438**	**100.00**

Table 5 The amount of money spent on platform.

The Amount of Money Spent on Each Digital Platform Purchase	Number (person)	Percentage
Below 5,000 baht	103	25.75
5,000 – 10,000 baht	208	52.00
10,001 – 20,000 baht	70	17.50
Over 20,000 baht	19	4.75
Total	**400**	**100.00**

Part 3 Questionnaire on Quality of Digital Platforms.

It shows the mean (Mean) and standard deviation (S.D.) and the level of importance of the Quality of Digital Platforms. The level of importance of Quality of Digital platforms overall is at a high level ($\bar{x}$=3.65) Prove in Table 6. When considering each aspect, it is found that the importance level of Quality of Digital platforms is at the number one level, which is System Quality ($\bar{x}$=3.71) Show in Table 7 and can be easily used 24 hours a day ($\bar{x}$=3.85) demonstrate in Table 8. Provide information that matches your information-seeking needs and provide complete information about rooms, dates, times, and various conditions ($\bar{x}$=3.64). The platform helps to receive sufficient information to make decisions about choosing services and Operation and management are easier ($\bar{x}$=3.70) illustrate in Table 9. The function can be viewed quickly ($\bar{x}$=3.66) Show in Table 10.

Table 6 Quality of digital platforms.

Quality of Digital Platforms	$\bar{x}$	S.D.	Significance Level Results
System Quality	3.71	0.43	High
Data Quality	3.62	0.45	High
The benefits of Digital platforms	3.64	0.47	High
Function	3.64	0.45	High
Total	**3.65**	**0.37**	High

Table 7 Quality of digital platforms in system quality.

Quality of Digital Platforms System Quality	$\bar{x}$	S.D.	Significance Level Results
1. Can be easily used 24 hours a day	3.85	0.58	High
2. It is easy to use	3.73	0.62	High
3. Can retrieve complete information such as date, time, and number of guests	3.68	0.60	High

4. Usage on the platform ensures confidence regarding customer payments	3.66	0.57	High
5. Quick access to information	3.62	0.59	High
Total	**3.71**	**0.43**	**High**

Table 8 Quality of digital platforms in data quality.

Quality of Digital Platforms Data Quality	$\bar{x}$	S.D.	Significance Level Results
1 Provide information that matches your information-seeking needs	3.64	0.59	High
2. Provide complete information about rooms, dates, times, and various conditions	3.64	0.61	High
3. The information obtained is easy to view and comprehensive	3.60	0.59	High
4. Current information is displayed	3.62	0.58	High
5. The information received is correct	3.59	0.59	High
Total	**3.62**	**0.45**	High

Table 9 Quality of digital platforms in benefits.

Quality of Digital platforms The benefits of Digital platforms	$\bar{x}$	S.D.	Significance Level Results
1. The platform helps to receive sufficient information to make decisions about choosing services	3.70	0.59	High
2. Operation and management are easier	3.70	0.60	High
3. Confidence in the system	3.63	0.61	High
4. Benefits to work planning	3.61	0.59	High
5. The data can be used to prepare customer information	3.59	0.57	High
Total	**3.64**	**0.47**	High

Table 10 Quality of digital platforms in function.

Quality of Digital platforms Function	$\bar{x}$	S.D.	Significance Level Results
1. The icons on the platform are easy to understand	3.65	0.58	High
2. The icons are not complicated to access	3.63	0.59	High
3. Information can be viewed quickly	3.66	0.60	High
4. Each category is clearly divided	3.65	0.61	High
5 There is security protection	3.64	0.58	High
Total	**3.64**	**0.45**	High

Part 4. Hypothesis testing the importance of Quality of Digital platforms.

H_0: Individual factors (Duration for Work) that are different. Overall, the level of importance of Quality of Digital platforms is no different.

H_1: Individual factors (Duration for Work) that are different. The overall level of importance of the Quality of Digital platforms is different.

Table 11 Results of hypothesis testing classified according to individual factors (Duration for Work) and level of importance of quality of digital platforms in general.

Quality of Digital platforms	Duration for Work								F	Sig.
	1 – 2 years (98 People)		3 – 5 years (172 People)		6–7 years (74 People)		Over 7 years (56 People)			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
System Quality	3.63	0.38	3.71	0.41	3.68	0.48	3.85	0.49	3.121	0.026*
Data Quality	3.49	0.37	3.65	0.47	3.62	0.44	3.71	0.48	3.638	0.013*
The benefits of Digital platforms	3.51	0.38	3.68	0.50	3.66	0.48	3.75	0.46	3.981	0.008*
Function	3.56	0.40	3.64	0.46	3.71	0.46	3.72	0.45	2.309	0.076
Total	**3.55**	**0.30**	**3.67**	**0.39**	**3.67**	**0.37**	**3.76**	**0.38**	**4.237**	**0.006***

From above table, the results of testing the hypothesis classified by individual factors (Duration for Work) found that the respondents had different levels of importance of quality of digital platforms overall (P=0.006) and when considering each aspect, it was found that the respondents the level of importance of Quality of digital platforms was not different in Function (P=0.076) and different in system quality (P=0.026), data quality (P=0.013) and the benefits of Digital platforms (P=0.008). At the significant level of 0.05 demonstrate in Table 11.

H_0: Individual factors (Duration for Work) that are different. The level of importance of Quality of Digital platforms System Quality is no different.

H_2: Individual factors (Duration for Work) that are different. The level of importance of the Quality of Digital Platform System Quality is different.

Table 12 Results of hypothesis testing classified according to individual factors (Duration for Work) and level of importance of quality of digital platforms in system quality.

Quality of Digital platforms System Quality	Duration for Work								F	Sig.
	1 – 2 years (98 People)		3 – 5 years (172 People)		6 –7 years (74 People)		Over 7 years (56 People)			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. Can be easily used 24 hours a day	3.84	0.58	3.79	0.53	3.83	0.59	4.07	0.68	3.336	0.019*
2. It is easy to use	3.62	0.58	3.3	0.58	3.67	0.64	4.00	0.73	4.751	0.003*
3. Can retrieve complete information such as date, time, and number of guests	3.63	0.56	3.73	0.56	3.55	0.66	3.80	0.67	2.530	0.057
4. Usage on the platform ensures confidence regarding customer payments	3.57	0.55	3.69	0.55	3.64	0.65	3.71	0.59	1.182	0.316
5. Quick access to information	3.51	0.61	3.64	0.58	3.68	0.61	3.67	0.54	1.725	0.161
Total	**3.63**	**0.38**	**3.71**	**0.41**	**3.68**	**0.48**	**3.85**	**0.49**	**3.121**	**0.026***

From the above table, the results of testing the hypothesis classified by individual factors (Duration for Work) found that respondents had different levels of importance of quality of digital platforms in system quality (P=0.026) and when considering each item, it was found that respondents had the importance level of quality of digital platforms system quality is no different for can retrieve complete information such as date, time, and number of guests (P= 0.057). Usage of the platform ensures confidence regarding customer payments (P= 0.316) quick access to information (P= 0.161) and different in can be easily used 24 hours a day (P= 0.019) it is easy to use (P= 0.003). At the significance level 0.05 show in Table 12.

H_0: Individual factors (Duration for Work) that are different. The importance level of Quality of Digital platforms Data Quality as a whole no different.

H_3: Individual factors (Duration for Work) that are different. The level of importance of Quality of Digital platforms Data Quality as a whole is different.

Table 13 Results of hypothesis testing classified according to individual factors (Duration for Work) and level of importance of quality of digital platforms in data quality.

Quality of Digital platforms Data Quality	Duration for Work								F	Sig.
	1 – 2 years (98 People)		3 – 5 years (172 People)		6 –7 years (74 People)		Over 7 years (56 People)			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1 Provide information that matches your information-seeking needs	3.50	0.56	3.66	0.58	3.63	0.60	3.80	0.64	3.392	0.018*
2. Provide complete information about rooms, dates, times, and various conditions	3.50	0.54	3.64	0.61	3.70	0.63	3.78	0.65	3.063	0.028*
3. The information obtained is easy to view and comprehensive	3.50	0.54	3.65	0.65	3.62	0.58	3.60	0.52	1.455	0.226
4. Current information is displayed	3.51	0.56	3.69	0.61	3.58	0.54	3.67	0.54	2.339	0.073
5. The information received is correct	3.47	0.56	3.61	0.64	3.59	0.52	3.71	0.56	2.031	0.109
Total	**3.49**	**0.37**	**3.65**	**0.47**	**3.62**	**0.44**	**3.71**	**0.48**	**3.638**	**0.013***

The results of testing the hypothesis classified by individual factors (Duration for Work) found that respondents had different levels of importance of quality of digital platforms in data quality (P=0.013) and when considering each item, it was found that respondents had the importance level of Quality of Digital platforms. Data quality is no different: The information obtained is easy to view and comprehensive (P=0.226) current information is displayed (P=0.073) the information received is correct (P=0.109) and differs in provides information that matches your information-seeking needs (P=0.018) provide complete information about rooms, dates, times, and various conditions (P=0.028). At the significant level of 0.05 is established in Table 13.

H_0: Individual factors (Duration for Work) that are different. The importance of Quality of Digital platforms and the benefits of Digital platforms are no different.

H_4: Different individual factors (Duration for Work) The importance level of Quality of Digital platforms and the benefits of Digital platforms are different.

Table 14 Results of hypothesis testing classified according to individual factors (Duration for Work) and level of importance of quality of in the benefit of digital platforms.

Quality of Digital platforms The benefits of Digital platforms	Duration for Work								F	Sig.
	1 – 2 years (98 People)		3 – 5 years (172 People)		6 –7 years (74 People)		Over 7 years (56 People)			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. The platform helps to receive sufficient information to make decisions about choosing services	3.56	0.55	3.71	0.61	3.77	0.60	3.82	0.57	2.927	0.034*
2. Operation and management are easier	3.51	0.54	3.75	0.62	3.70	0.65	3.85	0.51	5.046	0.002*
3. Confidence in the system	3.56	0.55	3.68	0.65	3.56	0.64	3.69	0.56	1.246	0.293
4. Benefits to work planning	3.51	0.57	3.62	0.61	3.64	0.60	3.71	0.56	1.630	0.182
5. The data can be used to prepare customer information	3.42	0.59	3.64	0.60	3.62	0.56	3.67	0.54	3.675	0.012*
Total	**3.51**	**0.38**	**3.68**	**0.50**	**3.66**	**0.48**	**3.75**	**0.46**	**3.981**	**0.008***

The results of testing the hypothesis classified by individual factors (Duration for Work) found that respondents had different levels of importance of quality of digital platforms in the benefits of digital platforms (P=0.008) and when considering each item, it was found that respondents to the questionnaire had a high level of importance: Quality of Digital platforms. The benefits of digital platforms were not different in confidence in the system (P=0.293) benefits to work planning (P=0.182) and were different in the platform helps to receive sufficient information to make decisions about choosing services (P=0.034), operation and management are easier (P=0.002) and the data can be used to prepare customer information (P=0.012). At the 0.05 significance level is displayed in Table 14.

H_0: Individual factors (Duration for Work) that are different. The level of importance of the quality of digital platforms in function is no different.

H_5: Different individual factors (Duration for Work). The level of importance of the quality of digital platforms in function is different.

Table 15 Results of hypothesis testing classified according to individual factors (Duration for Work) and level of importance of quality digital platforms in function.

Quality of Digital platforms Function	Duration for Work								F	Sig.
	1 – 2 years (98 People)		3 – 5 years (172 People)		6 –7 years (74 People)		Over 7 years (56 People)			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. The icons on the platform are easy to understand	3.58	0.49	3.61	0.59	3.72	0.66	3.76	0.53	1.886	0.131
2. The icons not complicated to access	3.59	0.58	3.57	0.55	3.70	0.67	3.69	0.53	2.307	0.076
3. Information can be viewed quickly	3.51	0.59	3.68	0.64	3.75	0.54	3.71	0.49	2.926	0.034*
4. Each category is clearly divided	3.56	0.59	3.69	0.65	3.64	0.55	3.67	0.54	1.095	0.951
5 There is security protection	3.56	0.59	3.63	0.60	3.67	0.59	3.75	0.47	1.358	0.255
Total	**3.56**	**0.40**	**3.64**	**0.46**	**3.71**	**0.46**	**3.72**	**0.45**	**2.309**	**0.076**

The results of the hypothesis test classified by individual factors (Duration for Work) found that the respondents had no different levels of importance of the quality of digital platforms in function (P=0.075). And when considering each item, it was found that the respondents had the level of importance of Quality of digital platforms in function was not different for: The icons on the platform are easy to understand (P=0.131) the icons not complicated to access (P=0.076) each category is clearly divided (P=0.951) there is security protection (P=0.255) and different in information can be viewed quickly (P=0.076). At the significant level of 0.05 indicated in Table 15.

Part 5. Guidelines for Developing a Digital Platform to Create a Competitive Advantage for The Hotel Business in Chiang Mai.

For the study of Hotel Business Entrepreneurs in Chiang Mai Post-COVID-19 Pandemic: Adaptation Competitive Strategies for Applying a Digital Platform. The researcher has summarized guidelines for developing digital platforms to create a competitive advantage for the hotel business in Chiang Mai province. Developing digital platforms to create a competitive advantage starts with system developers or organizations that want to use digital platforms in their management plans, public relations including creating an advantage over competitors must study the quality of the system by using the digital platform, customers will have a better user experience, being able to search for many different formats in one place and making better choices. Depending on the quality of the system, developing the system to be more efficient to understand the target group or organization that will use it. Entrepreneurs must study various information to respond to the use of the digital platform system. Before deciding to use that form, the digital platform will help with the ability of the management of the hotel has increased make a difference in service channels. Especially when hotels or operators turn to communication tools as a channel for receiving services that are more convenient and faster, reducing operating costs. This creates maximum satisfaction for service recipients. The use of technological information also helps create innovation, which will help increase the organization's competitiveness.

Objective 1. To study the use of digital platforms in the hotel business in Chiang Mai. It was found. that respondents tend to use the type of digital platform that they choose Property Management System (PMS). The reason for choosing to use a digital platform is to reach the target group directly, and who influences in deciding to use digital platforms is the platform owner or salesperson, the reason they choose to use digital platforms is to create a promotion for public relations. And the last one they can pay for the platform 5,000 – 10,000 baht.

Objective 2. To propose guidelines for developing a digital platform to create a competitive advantage for the hotel business in Chiang Mai. Important factors in developing digital platforms for creating a competitive advantage in the hotel business, it was found 4 factors as follow:

1. Quality of Digital platforms in system quality
2. Quality of Digital platforms in data quality
3. Quality of Digital platforms in benefit
4. Quality of Digital platforms in function

DISCUSSION AND CONCLUSIONS

The study on hotel business entrepreneurs in Chiang Mai post-covid-19 pandemic: Adaptation competitive strategies for applying a digital platform found that the gender is male, aged 31 – 40 years, has bachelor's degree education, position in management of the department, and has duration for work 3 – 5 years, consistent with the research of Phimolsathien, (2022). Developing marketing strategies for a 3-star hotel business in Phuket province from the perspective of Gen Y and Gen Z tourists. It was found that males had bachelor's degrees Pathalung, (2018). Have an income of less than 20,000 baht. The respondents tend to use the type of digital platform that they choose Property Management System (PMS). The reason for choosing to use a digital platform is to reach the target group directly, consistent with the research of (PURIWAT, & TRIPOPSAKUL, 2021). It was said that strategies for driving the business with data and the cornerstone of the digital age. It can analyze customer behavior and create strategies to meet a customer's needs more directly. The overall study of the importance of the quality of digital platforms is at a high level. When considering each aspect, it was found that the level of importance of the quality of digital platforms was at the highest level, consistent with the research of Wongprateep, (2021). He studies the Factors for success in customer relationship management by applying IT to develop service innovations A case study of a boutique hotel in Pattaya (Chompucum et al., 2022). The research found that boutique hotels in Pattaya use information technology as a tool to collect hotel customer databases and contact customers via email and social media. Each boutique hotel survives based on its customer database. Proceed to select the most convenient and popular customer service channels for customer relationship management (LAOHAJAROENYOT, 2016). It was said that the operating system must be easy to understand and convenient to search for information. Both personal information and payments are safe. And has an interesting appearance such as colors, text, and animations Yoo, & Donthu, (2001).

The study of Hotel Business Entrepreneurs in Chiang Mai Post-COVID-19 Pandemic: Adaptation Competitive Strategies for Applying a Digital Platform. There are suggestions and guidelines as follows. System quality: The system should be set up to be able to support 24 hours a day, making it easy for operators to work. Retrieve required information in its entirety, such as guest name, number of rooms, and number of guests. Moreover, the platform has a system to protect personal information and payments safely. Including quick access to information. Data quality. There are many channels and many ways to use digital platforms. If the platform is not reliable creating safety and Protecting user privacy will be dangerous to the user's life and property. Consider the use of digital platforms to add value to products. and services on the platform Including creating a community on the platform to create a special experience for service users. Management should consider using digital platforms that are appropriate for the size of the business, which will lead to collecting and researching customer data. Customer organizations and help businesses understand their customers. The data warehouse will be the first change in service innovation development for competitors.

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Sustainability in Real Estate Investing Focused on Digital Transformation in Thailand

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ABSTRACT

The COVID-19 pandemic has created economic stress. However, it also provides opportunities for growth and innovation in specific industries, and the real estate industry is one of them. This study explores different approaches to digitization, including the use of cloud-based technologies, online trading platforms, and big data analytics. Aims to examine the role and degree of influence of variables such as the impact of digital transformation and economic stability on strategic sustainability realities, real estate profitability in Thailand and their average differences to determine which variable has the greatest influence. The research results show that the capital used by both parties in real estate enterprises is a key factor in determining stakeholder profitability. The profitability and value of a real estate company are affected by the collaborative efforts of all parties. Real estate businesses rely heavily on the trust of investors to generate revenue. As online transactions increase, future research may involve e-real estate or e-REITs.

KEYWORDS: Sustainability, Real Estate Investing, Digital Transformation.

INTRODUCTION

1.1 Overview of the research problem

The real estate market is one of the markets with an important position and role for the national economy, having a direct relationship with the financial and monetary markets, the construction market, the material market. construction, labor market. Effective development and management of this market will make an important contribution to the process of promoting socioeconomic development, creating the ability to attract investment capital sources, make practical contributions to the process of sustainable urban and rural development in the direction of industrialization and modernization in Thailand.

1.2 Urgency of the research problem

The current Covid-19 pandemic situation shows the urgency in renovating and developing business administration of real estate investors. Therefore, the management of the real estate market in order to promote the positive aspects and limit the negative effects is a matter of concern and research. The use of the past 5 years real estate data in Thailand to analysis the development of the competitive position in the industry and each field in which they focus on investing to build projects aimed at sustainable development and point out the advantages and disadvantages of policies in the process of the real estate construction and development.

1.3 Research objectives

Through the study we can see the fluctuations of real estate in the market, demonstrating their market share dominance and solutions to escape from crises as well as overcome difficulties. overcome the weaknesses in corporate governance, see the strengths that need to be promoted and changed to match the sustainability development trend of the current technology era.

LITERATURE RIEW

1. Economic Reports

1.1 The Thai real estate market is anticipated to register a Compound annual growth rate (CAGR) of more than 5% over 2023-2028. The rise in prices due to inflation and economic slowdown affects the market, creating a slowdown in property demand. However, the market is expected to recover in the coming time, supported by government policies and other factors. However, the residential

segment is showing substantial growth. Thailand quickly gained international recognition with many business and real estate investment options. Thailand attracts investors from all over the world due to its wealth of possibilities. As expected, properties will cost more in central Bangkok and other sought-after areas. Rental homes are more in demand for tourists and long-term inhabitants in cities like Bangkok. The same higher rental rates apply to islands like Koh Samui or Phuket, where real estate is in high demand from locals, foreign visitors, Thais, and ex-pats looking for a luxurious getaway from the mainland or city life.

      1.2 Despite Thailand's ease of COVID-19 in Q3 2021, the residential property price index has constantly declined, while the supply index has steadily increased. In the first half of 2021, the retail industry continued to be negatively impacted by the spread of COVID-19, severely affecting the shopping center. Sales at some stores in the center have dropped more than 50% since 2020. In April 2021, the Thai government rolled out the second phase of its one-million-unit low-cost housing scheme, with an estimated budget of around THB 30 billion (USD 923 million) to THB 50 billion (USD 1.54 billion). The second phase offers a lower interest rate and raises the ceiling price of housing units to THB 1.2 million (USD 36,904), up from THB 1 million (USD 30,753) in the first phase. In Q1 2021, the total supply of office space in Bangkok increased to 5.42 million sq. m. as one new building with a net leasable area of 24,000 sqm was completed. In 2020, the total supply increased by 179,500 sqm for the entire year. This is the most significant annual supply increase recorded over the past decade (Mordor Intelligence, 2023).

2. Consultant Reports

      2.1 The impact of the Covid-19 pandemic has resulted in a sluggish real estate market for the past two years. However, this trend will change in 2022 as the market turns towards positive growth. This shift in the market is attributed to the lower number of newly launched real estate projects in the past two years, which decreased the risk of oversupply. Nonetheless, the real estate industry still faces inflation rates, household debt rates, development costs, and loan restriction protocols. Despite these challenges, there are positive factors that indicate a brighter future for the industry, such as government policies and the gradual economic recovery. It is important to consider both the positive and negative factors to gain a comprehensive understanding of the real estate market in Thailand (Agency for Real Estate Affairs, 2022).

      2.2 The Thailand Property Classified Market is anticipated to experience significant growth, with a projected 21.0% CAGR during the period of 2021-2026F, providing a highly profitable opportunity for Property Classified investors. While the real estate digital classifieds sector is still in its early stages of development, the listings currently feature primarily builders and brokers. However, the introduction of innovative technology-based services, such as 360-degree views, convenient listing management, and subscription options, suggests that the future focus will likely be on individual users. As a result, advertising efforts are expected to shift towards targeting individuals on both the buying and selling side, potentially alleviating resistance to online real estate transactions by individual users (Sanya Bahal & Yash Chawla, 2022).

METHODOLOGY

      To launch a successful and scalable real estate platform in Thailand, it is crucial to understand the demands and preferences of consumers, predict market trends, and detect cross-border opportunities. With the real estate market in Thailand continuing to expand, it is also vital to have a comprehensive knowledge of market values and regulatory requirements to design a platform that caters to the needs of buyers and sellers. Data collection and analysis are indispensable tools that enable startup founders to make informed decisions and identify new prospects in this rapidly evolving market. Real estate startups can develop innovative strategies and create value for customers in a dynamic and competitive industry by leveraging the insights gained through data analysis.

1 Data Collection

      1.1 The real estate industry in Thailand is one of the essential industries in the country. In 2021, the real estate sector contributed approximately 436.7 billion Thai baht to Thailand's gross domestic product (GDP), which indicated a steady increase since 2011 (Statista Research Department, 2023). The Thai real estate sector has also attracted foreign investors, drawn to the country's stable economy and the high potential for returns on investment. As a result, the real estate industry remains an important sector in Thailand's economy, providing an avenue for investors to make a significant

impact and contribute to the country's sustainable growth. In the realm of the Thai real estate market, digitalized resources present a potent instrument that can be utilized by both emerging startups and established companies to explore the market's potential and attain prosperity.

　　　1.2 In a report on Thailand's digital market, Leesa-nguansuk and Wangbunyen (2020), The Thai digital industry value is expected to climb 1.2% to 655.6 billion baht this year and surge 12.9% in 2021, driven by digital transformation, 5G tech and the adoption of artificial intelligence and the Internet of Things (IOT), says the Digital Economy Promotion Agency (DEPA).
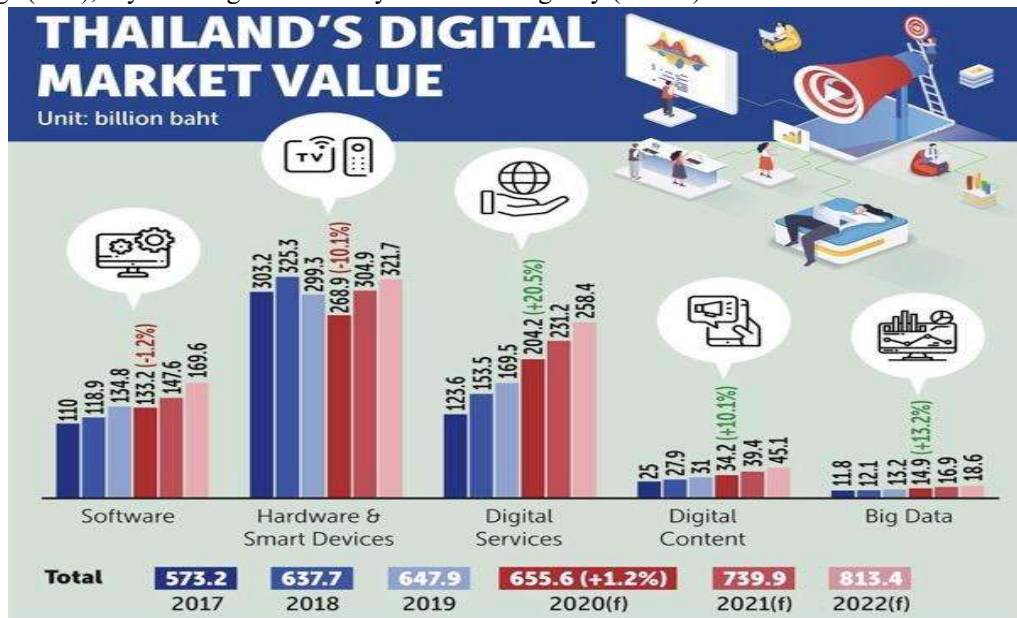
Figure 1 Thailand's Digital Market Value (Source: DEPA/IMC Institute)

　　　1.3 Based on Ruler Analytics' Marketing Attribution and Reporting Analysis 2021, the top three key marketing channels are websites (90.7%), blog content (89.2%), and email marketing (69.2%). However, many marketers continue to use offline channels, such as events, press, and print marketing (Dacanay, 2022). As shown in Figure 4.2 below, a website is essential for real estate startups to establish their brand and image while providing reliable and accurate information to potential clients.
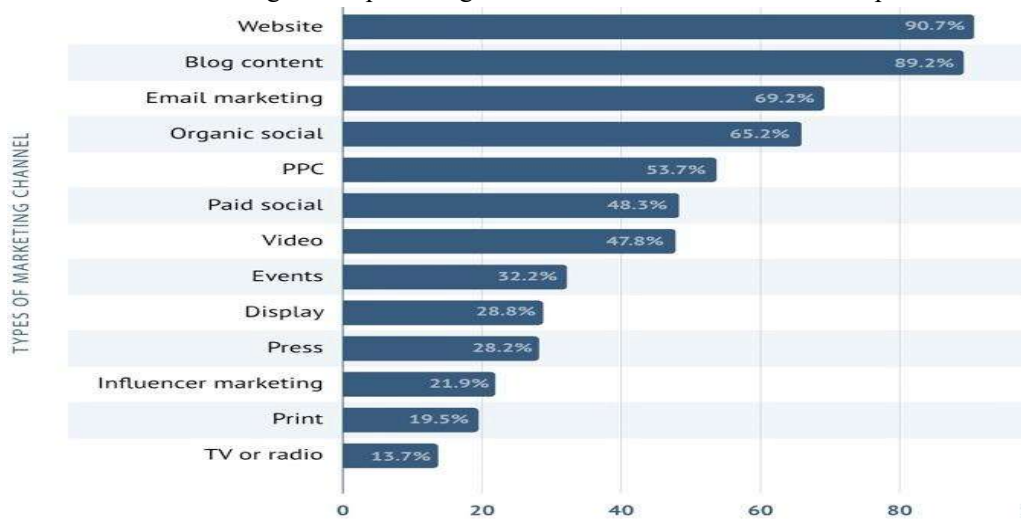
Figure 2 Real Estate Marketing Channels (Source: NAR)

　　　The National Association of Realtors (NAR) has reported that homebuyers of all age groups increasingly rely on the internet as a primary source of information during home buying. In particular,

41% of recent buyers' initial steps in the home buying process involved searching online, with 97% using the internet throughout their home search.
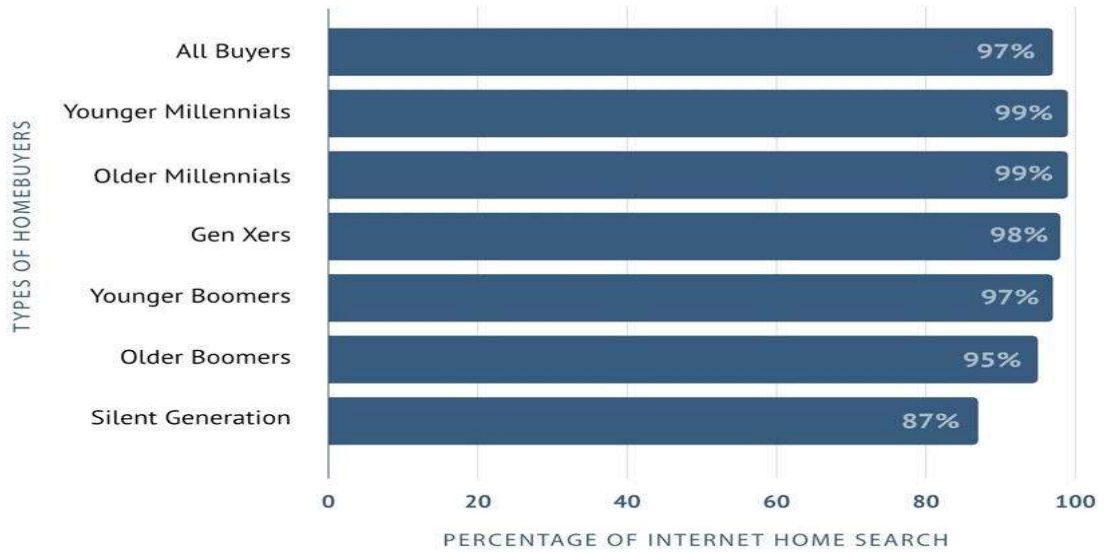
Figure 3 Internet Usage in the Home Search Process, *by age* (Source: NAR)

The real estate industry has undergone a significant transformation through digitalization, leading to enhanced customer satisfaction and experience at all stages of the buyer's journey. In today's real estate market, catering to the needs of millennials is a key factor for the success of a real estate platform. In 2021, 55 percent of millennials or Generation Ys who were 35 years and older in Thailand planned to buy a house. In comparison, only one percent of millennials aged between 22 to 24 years old planned to own a house (Statista Research Department, 2023). As the largest group of home buyers, millennials' preferences and purchasing habits significantly impact the market.
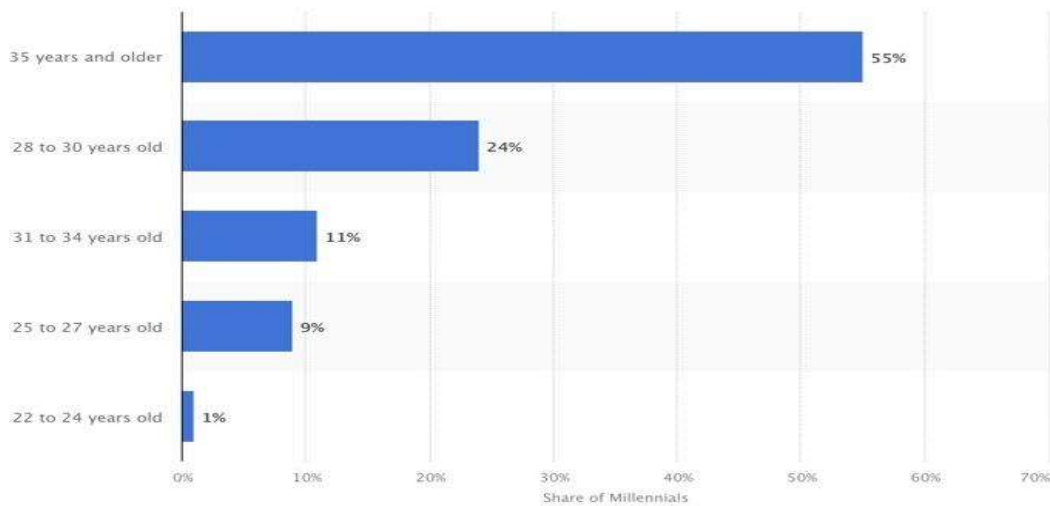
Figure 4 Share of Millennials Plan to Purchase a Home in Thailand in 2021(Source: Statista)

This study underscores the importance of digitalization in the real estate industry and its potential to drive growth and innovation. The COVID-19 pandemic has accelerated the need for the industry to embrace digital solutions to improve efficiency, accessibility, and transparency in real estate transactions and services. By embracing digitalization and innovation, startups can take advantage of the industry's potential for growth and provide solutions that address pain points and improve the overall customer experience. Startups have a unique opportunity to launch a real estate marketplace that leverages emerging technologies such as artificial intelligence, immersive virtual tours, and intelligent

chatbots to create an engaging customer experience. Additionally, as highlighted in this paper, the potential benefits of cross-border e-commerce concerning the Chinese property market present an attractive opportunity for startups seeking to enter the real estate industry, as well as the importance of appealing to millennial home buyers. Ultimately, the paper provides a roadmap for startups seeking to enter the real estate industry and underscores the importance of digitalization as a driver of sustainability growth and innovation.

RECOMMENDATIONS

Business markets are increasingly volatile as well as becoming increasingly complex. Large production and business companies in general and prominent as enterprises producing real estate activities in particular are facing many difficulties. In order to survive as well as develop, companies need to build for themselves many appropriate business orientations and strategies on the research, research and analysis infrastructure of the external business environment, the surface environment and the environment. investment in order to be able to make the most of opportunities, reduce many potential risks from the operating environment, and promote the advantages and limit the disadvantages of the real estate business as a valuable industry. with its own characteristics, along with strong financial conditions, potential for calling for capital, long-term investment time, and very high barriers to entry or exit from the market. Thailand real estate market is in its infancy as well as going up, so it is still very young. matching creates many difficulties for large enterprises operating in this digital transformation industry. Stemming from that fact, the strategic planning of operations is absolutely necessary for large company dealing in real estate. It aims to bring a large enterprise with a directional and operational purpose, for example, from the side of many departments and individuals to the community purpose of large enterprises, avoiding the whole situation, dispersing available resources will cause problems. business weakening. Today's operating market is changing very quickly, with global competition. The analysis clarifies the influence of the external environment on the building of the company's business strategy: such as macro factors, micro factors in quite detail. Since then, it has shown the opportunities for the company in the real estate business such as: High economic growth, stable political and legal environment. But besides that, it also pointed out the challenges that the company has to face in the coming time to stabilize its digital business activities such as: continuously high inflation... Analysis and clarification of the internal

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Credential Control Balance: A Universal Blockchain Account Model Abstract From Bank to Bitcoin, Ethereum External Owned Account and Account Abstraction

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ABSTRACT

Blockchain market value peaked at $3 trillion, fell to $1 trillion, then recovered to $1.5 trillion and is rising again. Blockchain accounts secure most on-chain assets in this huge market (Web-12). This paper initiates **a universal blockchain account model** from a comprehensive review of blockchain account development, encompassing both academic and industry perspectives. This paper uses a **model analysis** method to analysis the account progress and **create** high level **new account model**. And it uses **systematic literature review** method to search, filter, analysis and evaluate the papers about **account models** and analyzes related technology **trade-offs**. Searching with key words: blockchain, account, private key and security in WOS, Scopus and Bitcoin and Ethereum community repositories, this research provides in-depth insights into the design and evaluation of account models, from traditional bank accounts to Bitcoin, EVM-adaptable, and abstraction accounts. Through data-driven **comparisons** of account models (security, cost, adoption), this study also explores future directions and provides an overview of cross-model account theory, guiding further blockchain research. This paper leaves deeper dives into model change drivers, application technology advancements.

KEYWORDS: Blockchain Account, Private key, Security, Privacy, Mass Adoption

INTRODUCTION

Account is a common-sense concept cause of bank account in your daily life. Richard and Peter's paper lists several bank account types. For example, there are deposit and custody accounts. They rely on three main bank services. These services include payment, insurance, and intermedia (Davies, 2010). Like the early bank account, a blockchain account is a deposit and payment account type now. It will develop into more complicated account types like bank account. This will go with the future of blockchain. Satoshi Nakamoto defined the blockchain and first blockchain account in Bitcoin white paper(Nakamoto, n.d.). Blockchain account hold a digital signature, control bitcoin balance, which provides strong control of ownership.
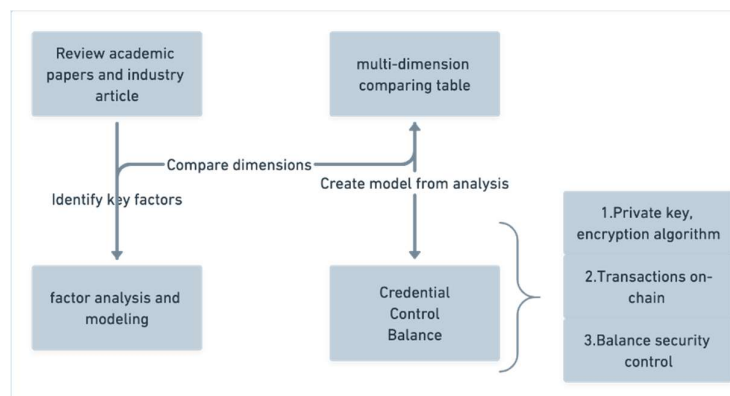
Figure 1: research flow

The crypto market is a rising market, it will become an important market that affect everyone. Speculation and bubbles aside, the crypto market boom also reflects the continued growth of the crypto industry.
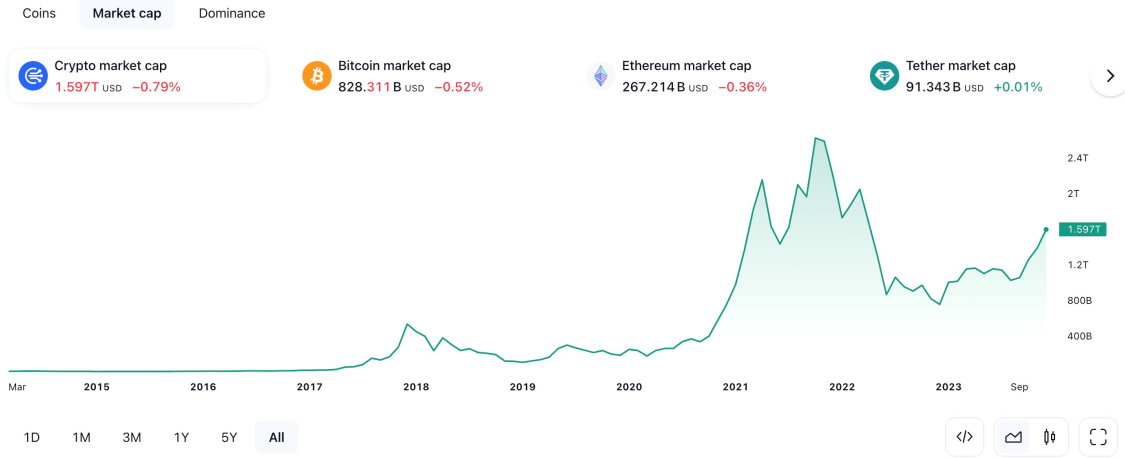
Figure 2: total market value of crypto market at Nov, 2023

Blockchain accounts are evolving. Digital signature(Diffie & Hellman, 2021) and applied algorithm RAS(Rivest et al., 1978), and Merkle hash algorithm(Debnath et al., 2017) technology, and ECDSA(Elliptic Curve Digital Signature Algorithm) (Johnson et al., 2001) and more, are improving the account security level. But some questions remain and wait to implementation (Web-10). These include serious security questions, low TPS (Transaction Per Second) and long verification time. The complex transaction flow, easy-to-lose private key, high technical usage threshold, and high gas cost are also issues. Security, Continence/UX (User Experience,) and Cost, these challenges could hinder widespread human benefit in the digital future.
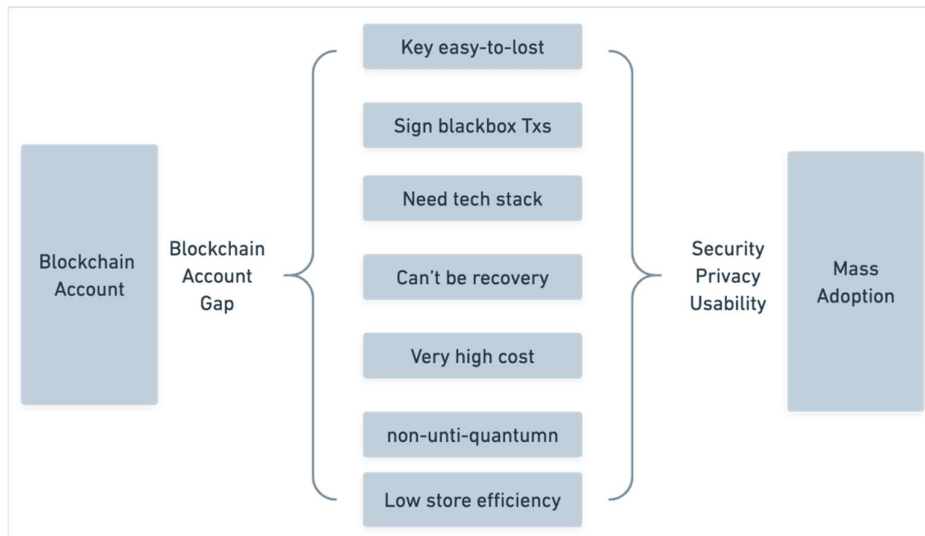
Figure 3: Gap between now account and future

We can set an assumption model with common sense experience: **credentials control balance**. This model is based on an abstract from the bank account. Blockchain account will launch many abilities around these.
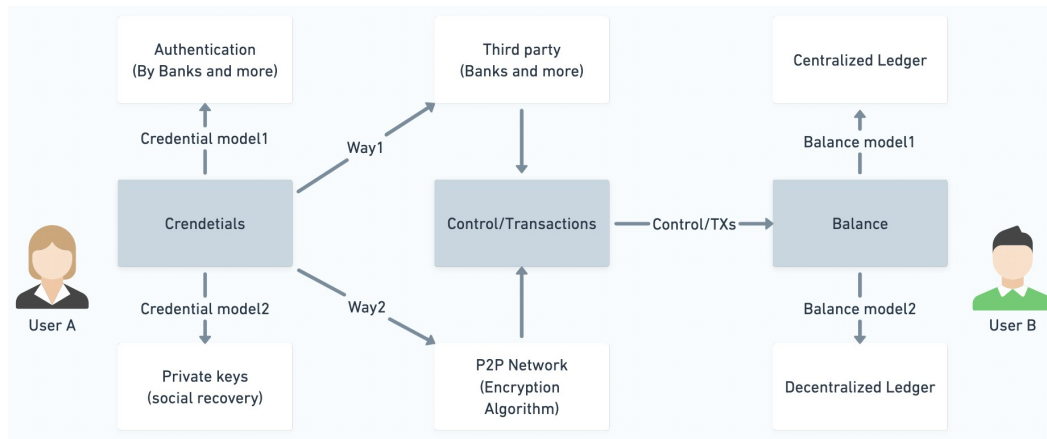
Figure 4: a universal account conception model

The Bitcoin account model (also Blockchain account model) comprises credential, control and balance model. The **credential submodel** is the digital signature based on decentralized consensus. The **control submodel** is hash algorithm and transactions based on a PoW network (Proof of Work) and signature verification methods. The **balance submodel** is UTXO (Unspent Transaction Output) which is like much money with changeable denomination. It is safe and none-double-spending. Bitcoin account model enables P2P transactions "**without the need for a trusted third party**"(Nakamoto, n.d.).

EOA (External Owned Account) is the second type blockchain account in Ethereum (Web-11), but it is easy to lose and be hacked. EOA keeps most assets of the EVM adaptable chains. The EIP55(Web-4) protocol follows a convention for account computation which inherit from BIP39(Web-1) and more. It uses the ECC(Elliptic Curve Cryptography)/Secp256k1(Secure elliptic curve cryptography parameters)(Web-13) (Brown, n.d.) and SHA256(Secure Hash Algorithm)(Web-7) hash encryption method to computation private key to public key which is more security. You must keep your private key carefully. Lost once, lost all.

AA (Account Abstraction) (Web-10) is a developing account type in EVM adaptable chains. It's found in chains like Ethereum, Layer1, Layer2, and more. It empowers mass adoption by breaking the transaction flow into many modules to extend its abilities. The owner address, produced by the private key, is a slot of an on-chain contract. Social recovery can change it. The contract can accept different signature algorithms. The gas payment can be delegated by outer sources. It has many improvements but also has some problems. For example, it has a complex system architecture. It is hard to build and is difficult to keep address consistency. It also has high gas fees. UTXO, EOA, and AA are the prevailing blockchain account models.

Blockchain is a rising industry. There are many public Chains like Ethereum, Optimism, BSC(Binance Smart Chain), Arbitrum and more. Most of the chains follow the pattern of the Bitcoin: using key pairs including private key to sign a digital signature, using public key to verify the signature and transaction execution, which produced by crypto algorithms.

Name	Protocols ⇕	Addresses ⑦ ⇕	1d Change ⇕	7d Change ⇕	1m Change ⇕	TVL ⇕	Stables ⇕
1 ◆ Ethereum	1004		-0.77%	-0.49%	+11.12%	$32.985b	$71.486b
2 ▽ Tron	29		-0.06%	-4.06%	-6.14%	$7.804b	$52.174b
3 ⬢ BSC	690		+0.30%	-3.05%	+8.98%	$3.488b	$32.58m
4 ◈ Arbitrum	526		-1.32%	-0.72%	+7.98%	$2.589b	$2.125b
5 ● Solana	123		+1.94%	-3.71%	+33.98%	$1.368b	$1.919b
6 ⬡ Polygon	513		+0.55%	-4.27%	-2.65%	$850.44m	$1.31b
7 OP Optimism	218		+0.37%	-7.41%	-2.89%	$839.51m	$606.12m
8 ◢ Avalanche	359		-0.16%	-7.76%	-14.43%	$804.13m	$1.104b
9 ◉ Manta	32		-0.32%	+3.63%	+659%	$429.17m	
10 ◆ PulseChain	34		-2.61%	+96.70%	+182%	$412.22m	
11 ⊖ Base	208		-0.35%	-6.63%	-10.76%	$401m	$297.29m
12 ✦ Cardano	33		-0.13%	-5.69%	-15.68%	$351.87m	$19.12m

Figure 5: a total locked value rank in Blockchain on Defilama
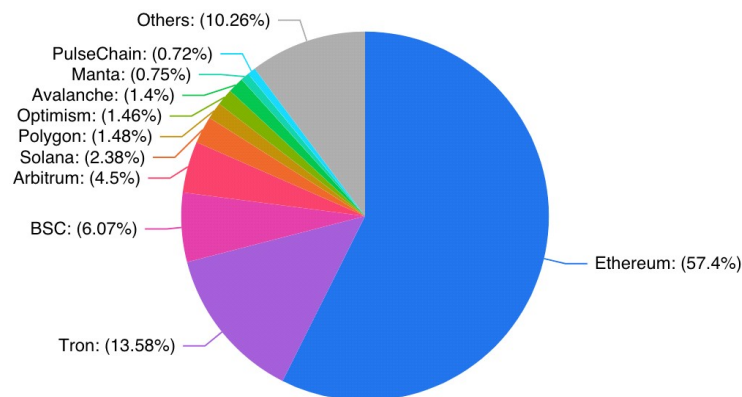
Figure 6 : a pie diagram of market share

This paper used a systematic literature review method. It collects and research most papers about blockchain account. The research purpose is to provide a total review of blockchain account development. It is also to evaluate the **account models**. It compares different account model **trade-offs** using the statistical tables method. Also, we have a model graph to clarify the account's basic actions and interaction flow. We will provide a review of the academic history of a blockchain account.

This research analysis all the structure of the blockchain account model at different times. It launches a new conception, **Universal Blockchain Account: Credential Control Balance**, which means blockchain use hash function and digital signature of Elliptic curve to be a unique and secret credential of your account. And use blocks aggregating all the transactions hashes to guarantee the control of your asset. Use UTXO and Merkle tree and Verkle tree to store and change your balance quickly and security. It will evaluate every model by a triangle: security, convenience, and cost. The models should meet the needs of future mass adoption.

LITERATURE REVIEW

The conception of an account has evolved over centuries, shifting from simple paper ledgers to modern digital bank accounts, and now venturing into the world of blockchain. This journey signifies a crucial transition: trust and accountability are moving from centralized institutions to individuals empowered by technology.

Traditionally, accounts relied on centralized verification and assurances (think Richard and Peter's accounting(Davies, 2010)). Blockchain technology, pioneered by Satoshi Nakamoto(Nakamoto, n.d.), replaces this with cryptographic proofs and distributed consensus, as explored in works on digital trust and signatures (Debnath et al., 2017). This transformation, fuelled by concerns for privacy and control (highlighted in Bitcoin's white paper (Nakamoto, n.d.) and related research(Debnath et al., 2017)), paves the way for a new era of account management, where users have direct control over their assets while maintaining system integrity.

But how do we ensure secure interactions within a blockchain network? Creating unique and secure blockchain account credentials is key. Cryptographic tools like digital signatures and hash functions form the foundation of account security. Users generate a key pair (private and public) following standards like RFC2459, without relying on central authorities(Housley et al., 1999). The public key, hashed into a unique identifier, becomes the user's blockchain address.

Losing these credentials in a decentralized system can be devastating. Rigorous best practices for recovery and backup are crucial. Literature on digital signatures emphasizes the use of mnemonic phrases ,derived from secure wordlists (Web-2) and Hierarchical Deterministic (HD) wallets(Web-3) to enable recovery from lost private keys. Newer protocols, like social recovery without mnemonics, promise even more robust self-sovereign identity management within blockchain systems.

The core significance of blockchain technology is ability to manage asset balances and facilitate transactions in an environment where there is no centralized trusted entity. Unlike traditional bank accounts, where financial institutions act as trusted intermediaries for balance management and transaction validation, blockchain networks utilize decentralized consensus mechanisms to achieve the same goals. The Bitcoin network's Unspent Transaction Output (UTXO) model is the earliest and most prominent embodiment of this principle, a new paradigm pioneered by Satoshi Nakamoto's seminal white paper(Nakamoto, n.d.). Each UTXO represents a piece of unspent discrete digital currency and is effectively a bearer instrument. Users transact by consuming these UTXOs and generating new UTXOs in chained blocks, thus ensuring that each unit of cryptocurrency is uniquely recorded in the network ledger with a certain capacity (Chakravarty et al., 2020). This mechanism inherently facilitates auditing by establishing a transaction history that does not rely on intermediaries, but on cryptographic verification. Meanwhile, the literature also points to a range of account-based models, including the Ether platform, where individual account balances are updated with each transaction, much like a traditional bank ledger; however, these updates are propagated network-wide by consensus, without the need for a trusted third party (Chakravarty et al., 2020). The blockchain-based mechanism is not only about eliminating centrality in financial operations, but also about providing implicit security and transparency to every participant in the network.

The account infrastructure within blockchain ecosystems can vary substantially, manifesting in differing models of transaction processing and state maintenance. At the core of Bitcoin's approach is the Unspent Transaction Output (UTXO) model, an innovation that meticulously catalogs each fraction of Bitcoin as either spent or unspent, thereby ensuring accuracy in balance computation and resistance to double-spending without necessitating a trusted authority (Nakamoto, n.d.). In contrast, Ethereum embraces an account-based paradigm, primarily through External Owned Accounts (EOAs) and, more recently, Account Abstraction (AA) models. EOAs operate akin to conventional bank accounts with nonce-based transaction ordering, simplifying the state transition logic but paradoxically elevating the risk of key mismanagement and loss (Li et al., 2020). Account Abstraction seeks to ameliorate this by transforming user accounts into smart contracts, permitting more complex access control options, including recovery mechanisms and delegation of transaction fee payments, which are pivotal for user accessibility and security (Web-10). There are some other blockchain account models. Internet Computer(ICP) create a inner-building account model with strong account abilities like instant subaccount with different DApps(Decentralized Application) for high privacy(Web-5).

In the cryptographic domain, account access and security have begun to intertwine with biometric modalities, striving toward enhancing the user experience while simultaneously bolstering security safeguards. The FIDO (Fast Identity Online) protocol epitomizes this expansion, supporting biometric solutions, such as fingerprint recognition, for the verification of blockchain operations, addressing usability without undermining security considerations(Merkle, 1987). A variety of platforms are venturing beyond traditional credentials: Internet Computer Protocol (ICP) leverages user fingerprints for account authentication, thereby intertwining innate biological traits with cryptographic processes, a frontier that is engaging yet not fully charted in terms of privacy implications and inclusivity (Farrugia et al., 2020). And Ethereum community is also evolving the account model based on ERC4337. They try to build a native account abstraction by build-in-client protocols which will improve the efficiency and security, and lower the complexity and cost (Web-6).

Alternatively, Layer2 solutions such as StarkNet and Polygon are exploring scalability and efficiency, signifying an iterative progression towards more refined account models that endorse both functional performance and user assurance (Ma et al., 2021). Some ZK-SNARKs chains try to find a more privacy account model using ZK proof to verify data or transactions without leaking of the original data (Guan et al., 2022). Each model harbours distinct advantages and limitations, mapping a diverse landscape wherein blockchain account infrastructures converge toward a nuanced equilibrium of security, utility, and inclusivity.

A pivotal aspect of blockchain technology is its capacity to sustain a peer-to-peer account balance system without necessitating the intermediation of trusted entities—a stark departure from central authority reliance observed in traditional financial systems. The very bedrock of this decentralized maintenance of account balances is the ingenious application of consensus mechanisms. Such mechanisms foster agreement among network participants on the valid transactions, effectively ensuring the integrity and verifiability of balance updates. Chief among these are protocols like Proof of Work (PoW) and Proof of Stake (PoS), which, despite their divergent operational tactics, serve the unifying goal of distributed trust (Cao et al., 2020). The literature sheds light on these paradigms, such as "Trust and electronic reputation" and more reputation exploring in organizations and individuals are try to build trust on electronic reputation (Web-8) (Zinko et al., 2007) (Web-9).

"An overview of PKI trust models" and more Public Key Infrastructure (PKI)(Buchmann et al., 2013) (S. Khan et al., 2023)(Perlman, 1999), elucidating the evolving notions of digital trust with Certification Authority (CA). But within blockchain network of trust, individual nodes collectively undertake the role traditionally filled by banks or CAs, with technical trust replacing institutional trust. However, the reliance on purely technical consensus has brought forth challenges, notably the scalability trilemma where decentralization, security, and speed engage in a delicate balancing act. So inherited from the mathematics form PKI, blockchain account use the private key and public key system(Koblitz, 1994). The sources dive deep into the intricacies of consensus-driven balance management, offering incisive viewpoints on the current state and envisaging potential enhancements to the digital ledger landscape.

Security considerations are at the core of blockchain account models, as the integrity and trustworthiness of these systems are paramount in their widespread acceptance and success. Over the years, various security breaches and vulnerabilities have been identified, ranging from code exploits in smart contracts to social engineering attacks targeting private keys(Atzei et al., 2017). Notable incidents have underscored the importance of rigorous security measures, fuelling research into the robustness of blockchain systems and the tables of potential attacks. For instance, some studies have focused on detecting illicit activities over blockchain networks, revealing the need for improved monitoring and fraud detection mechanisms (Farrugia et al., 2020). To mitigate such risks, the adoption of advanced encryption techniques, including the Elliptic Curve Digital Signature Algorithm (ECDSA) with threshold signature(Goldfeder et al., 2015) and further refinements like Schnorr signatures, has been proposed. Additionally, multi-signature methods(with threshold signature) have gained traction as they require multiple parties to sign off on transactions, adding an extra layer of security to prevent unauthorized asset transfers (Goldfeder et al., 2014). This methodology diversifies the risk associated with single private key control, a design that has been shown to significantly enhance the security posture of blockchain accounts (Andrychowicz et al., 2016). The continuous evolution of encryption standards and the introduction of multi-signature wallets are emblematic of the persistent efforts to secure blockchain accounts against the varied threat landscape they face.

The privacy importance in blockchain account can't be overemphasized, as it underlies the principles of user autonomy and security. In the blockchain context, the emergence of cryptographic tools such as zero-knowledge proofs and ZK-SNARKs has provided important information for privacy enhancement in blockchain systems (Ma et al., 2021)(Guan et al., 2022) . Zero-knowledge proofs allow the validation of transactions without revealing underlying transaction data, so preserving privacy while maintaining the transaction integrity. ZK-SNARKs—concise non-interactive arguments of knowledge—further streamline these proofs by minimizing computational overhead and interaction between prover and verifier. Fundamental research has established that such methods can be robustly applied in account models to confer privacy on transactional data while still ensuring accountability and verifiability, critical aspects in the blockchain(Ma et al., 2021)(Guan et al., 2022).

And the realization of privacy rights requires trade-offs. The cryptographic protocols are computational intensity, may get challenges to the scalability and latency on blockchain network, potentially impacting transaction throughput and leading to higher costs. The complexity of privacy-preserving techniques may contribute to a higher bar for user comprehension and participation, potentially affecting widespread adoption. Now zero-knowledge techniques provide a compelling privacy ability. It could help to create like a Email account for mass adoption in human digital future.

The blockchain future for mass adoption depends on the blockchain accounts is rely on both technical and human-centric barriers. **Usability** is important; a user's interaction with blockchain technology must be intuitive and seamless to get a widespread acceptance (Brünjes & Gabbay, 2020). Studies have shown that the perceptions and understanding of blockchain among potential users profoundly influence their willingness to adopt the technology (Tsai et al., 2018). Indeed, the complex nature of blockchain can be scary for non-technical users, which can hinder its mainstream using. **Security** is typically at the forefront of user concerns, a robust protective measure that do not compromise usability. **Privacy**, too, is a critical consideration; users must be confident that their transactions and balances remain confidential. Yet, achieving high level security and privacy often comes with an expense of ease-to-use, shaping a trade-offs that researchers and developers must navigate. Designers of blockchain systems are thus challenged to find an equilibrium that addresses these factors, ensuring that the secure and private management of digital assets does not stop potential users through the complexity.
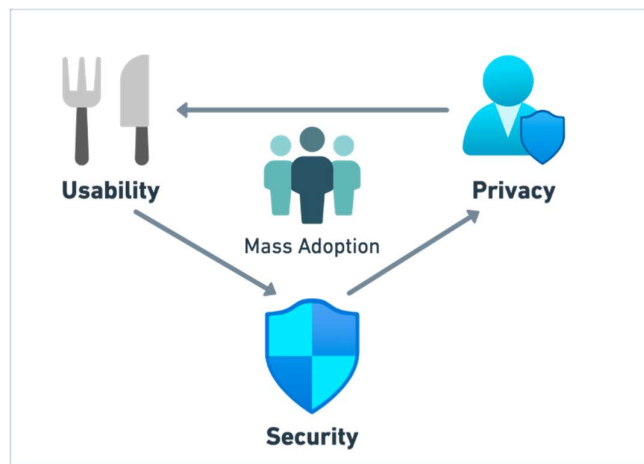

Figure 7: account trade-offss model

Despite the growing volume of research about blockchain, there is a noticeable absence of comprehensive universal model focusing specifically on blockchain account models (Wood & others, 2014). Like an oversight is critical; as the quantity of digital transaction systems expands, it becomes more important to understand the full spectrum of account models—from old bank accounts to practical blockchain variants. The evolution from traditional banking systems to the decentralized architecture offered by blockchains need an in-depth examination of the core components inherent to these models. The trade-offs between usability, security, and privacy have evolved over time. Consequently, an extensive analysis that bridges the gap between foundational banking principles and

the innovative paradigms introduced by blockchain technology is not just secured, but crucial. This gap underlines the research community's imperative to develop a universal account model that not only **explain** the technical mechanism along the contiguity of account evolution but also the shifts in paradigms that may influence the course of future **developments** in account management and governance.

The future of blockchain account build on both keeping the immutable core principles about the system trust and meet evolving user expectations. The immutable transactions and the cryptographic blockchain networks remain elementary to users' confidence and the technology's integrity. Recent trends particularly in enhancing user experience and providing regulatory compliance forecast a future where blockchain accounts must balance security with convenience (Atzei et al., 2017). Scalability solutions, whether on-chain advancements or off-chain protocols, continue to evolve to meet the demands of a growing user base(D. Khan et al., 2021). The integration of blockchain technology in various sectors – from finance to healthcare – encourages multidisciplinary research, aiming for a universal account model that simplifies user interaction while maintaining robust security measures. Scholars and industry practitioners are thus tasked with forging pathways towards mass adoption, crafting complicated yet user-friendly interfaces, and ensuring interoperability among diverse blockchain ecosystems (D. Khan et al., 2021). This universal account model aspires to be a blueprint for mass adoption, embodying the trade-offs and synergies between technological capabilities and user needs.

METHODOLOGY

The methodology of this research is paramount to its efficacy and coherence in addressing the multifarious challenges ingrained in blockchain account technology. **A systematic literature review** methodology is the key point of this study, carefully selected to dissect and navigate the intricate of security, privacy, and obstructions in both **academic** articles and **industry** area.
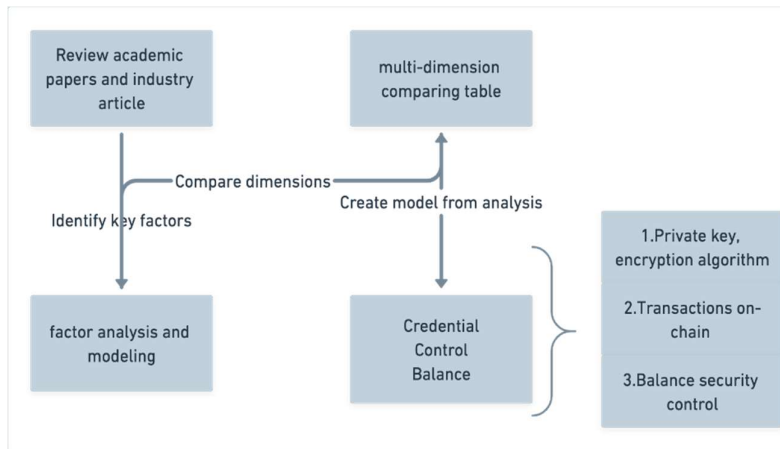
Figure 8: a universal conception account model

This methodology is aligned with the scholarly requisites of comprehensiveness, objectivity, and replicability, which are vital for engendering a robust framework capable of examining the evolution and adoption of blockchain accounts. The agility of this approach allows for the encapsulation of diverse perspectives, engendering a holistic understanding that illuminates both the technical intricacies and the societal implications of blockchain account technology. Beyond mere review, the intent is to construct a nexus of knowledge that can potently inform future innovation, policy-making, and academic inquiry into the digital expanse that blockchain account technology continues to unfurl.

Blockchain account is a practice model in crypto industry, so we use a **model analysis method** to analysis and evaluate the models related to account. There are five phase of industry as the analysis: Bank account, Bitcoin account, EOA account and others, Abstraction Account (Contract Account) and Other EVM Account. It represents the account original source and the development route.
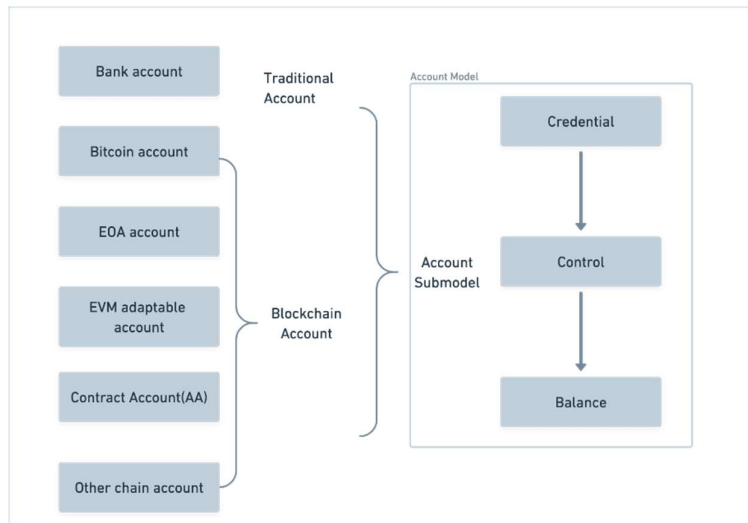
Figure 9: a universal conception account model

This paper split account into **three submodules: credential, control and balance** with the analysis of the account history. It can give a more precise analytical audience and decision-making perspective for follow-up. We use a three-dimension assessment model: security, convenience, and cost which sets privacy as part of the security and splits usability into convenience and cost.

The data collection strategy for this systematic literature review hinged upon a meticulous **aggregation** of industry improvement proposals and scholarly articles that probe the intricacies of blockchain account technology. By considering technical documentation and empirical findings provided by the blockchain industry, particularly white papers and enhancement protocols, this review synthesizes a plethora of data points to form a comprehensive picture of the security, privacy, and usability developments over time. To this end, an **extensive table matrix** was engineered to effectively compare the characteristics, strengths, and vulnerabilities of various blockchain account models. This detailed table not only allows for a clear visualization of comparisons across the research targets but also elucidates the evolution and range of each model, thereby providing an overarching access point for analysis and discussion.

To elucidate the complex interrelations inherent in blockchain account models, our analytical approach leverages a combination of visual and tabular representations. **Diagrams** serve as a foundational tool to visually articulate the intricate relationships between the various components of blockchain accounts—credential, control, and balance—within each model. These schematic illustrations allow for an intuitive comprehension of the nuanced dynamics and structural differences across models. Furthermore, we construct comprehensive tables that facilitate a side-by-side **comparison** of the blockchain account models under study. These tables are instrumental in highlighting discrepancies, delineating **trade-offs**, and contrasting the relative merits and demerits, especially in the realms of security, privacy, and ease of use. Through this **dual-strategy analysis**, we strive to present a clear and accessible synthesis of the data collected, catering to both visual learners and those who prefer detailed, quantitative assessments.

Through this kind of methodology, we would get **muti-dimension review** and give some changing road of the private key making, signature making and verifying, transaction building and block out method, balance modifying and assets moving between multi-accounts. The security tricks in such steps, the convenience of interaction in these complicated flows, the privacy and cost trade-offs on these account model behaviours.

RESULTS AND DISCUSSION

summary about credential, control, balance, discuss about different model detail on these three sub model. Some references.

Blockchain account secures trillions of crypto assets on the blockchain. But we are **suffering** with the high-tech requirements for opening new blockchain account, private key easy to be lost and

many contemporary questions. And the key problem is mass adoption for the future. There will be many questions in security, convenience and cost. We need give a total review on blockchain account and improve it.

Blockchain account is also follow basic account cognition: credential control balance. Blockchain must provide a decentralized credential to remove the trust of third party. Different blockchain account model use different technology to implement decentralization. So "credential control balance" change into "d-credential d-control balance in d-ledger". The first letter "d" means decentralized.

The trade-offs in these models using variant techniques are influenced by a uneven rules. Bitcoin use UTXO balance model to avoid double-spending which is the question discussion mostly in Cryptography Mailing List, Before Bitcoin, B-money is invented by Wei Dai which focus distribution and cryptography security. Bit Gold conception is published by Nick Szabo, which focus on the computing recourse consumption (Popper, 2015).
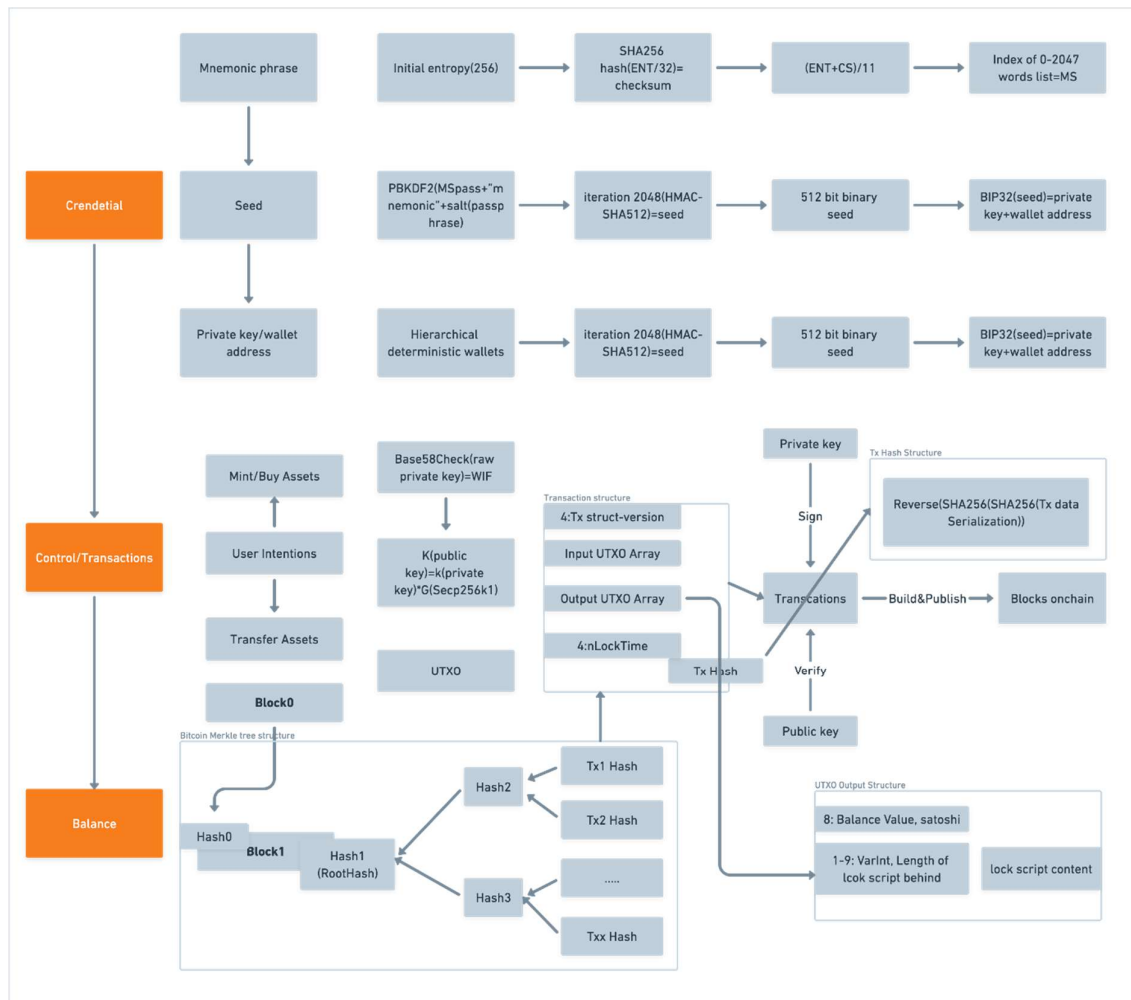
Figure 10: Bitcoin Account Procedure Analysis

The above graph is a detail review of the Bitcoin account mechanism, you can also check the real on-chain blocks and transactions at here (Web-15)(Web-16).

EOA is focus on Engineering convenience, so inherit the credential model, change some algorithm and method, like the control model HD Wallet (Hierarchical Deterministic Wallet), balance model using Merkle tree. And extend the control model to EVM (Ethereum Virtual Machine) with signature.
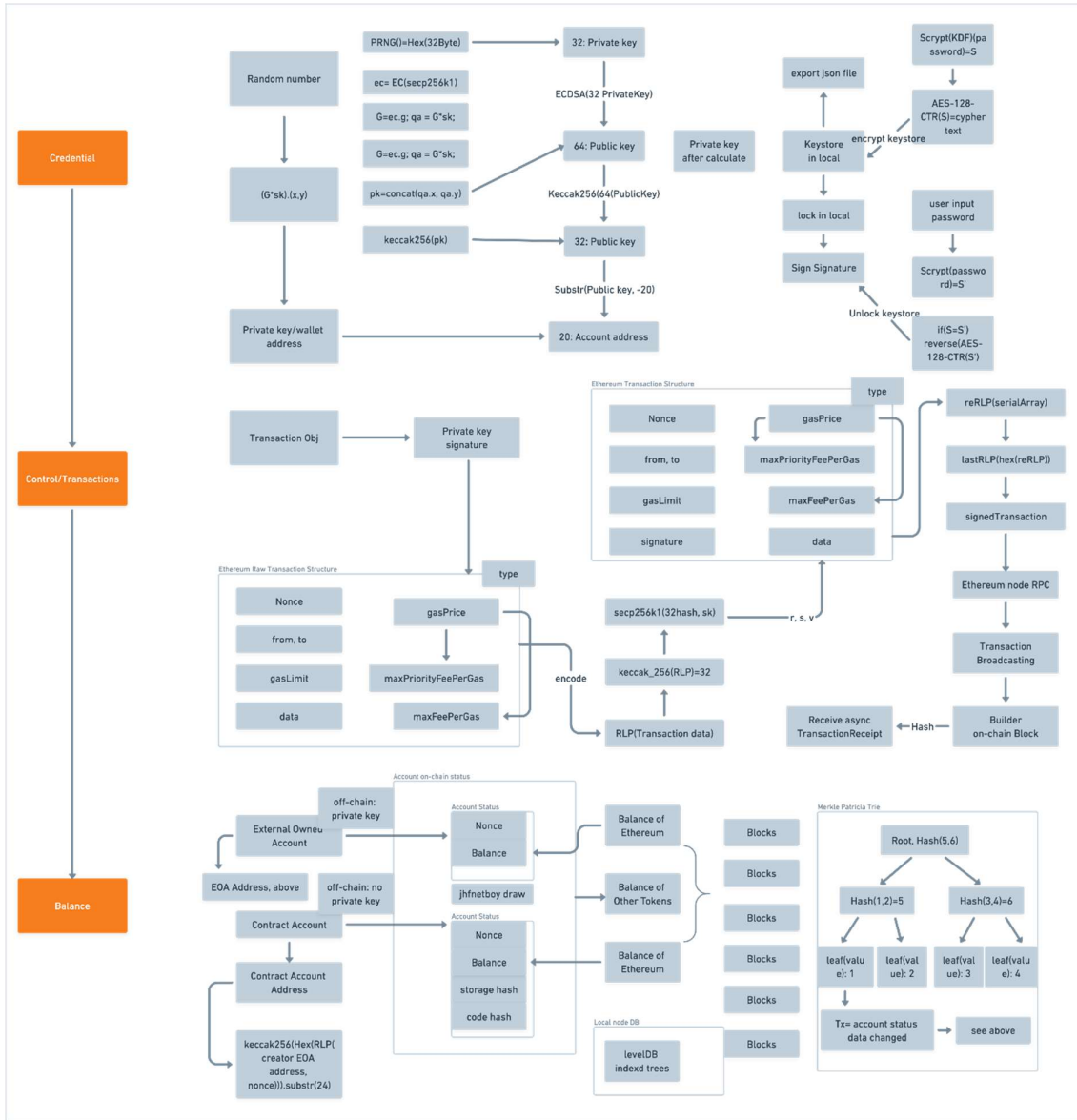
Figure 11: Ethereum Account Procedure Analysis

The above graph is a detail review of the Ethereum account mechanism, you can also check the real on-chain blocks and transactions at here (Web-17) (Web-18) (Web-19).

Account Abstraction focus on the system scalability, not only the balance model, it focus on security like social recovery mechanism, different signature algorithm supporting, Entry point contract monitor and more. It focuses on convenience liken gas fee payment by third party support and programming contract to support session key, Deadman's switch, 2FA with fingerprint, multi-sig with complicate personal or enterprise flow supporting. We can check the simple comparison between the normal EOA transaction and contract account transactions.
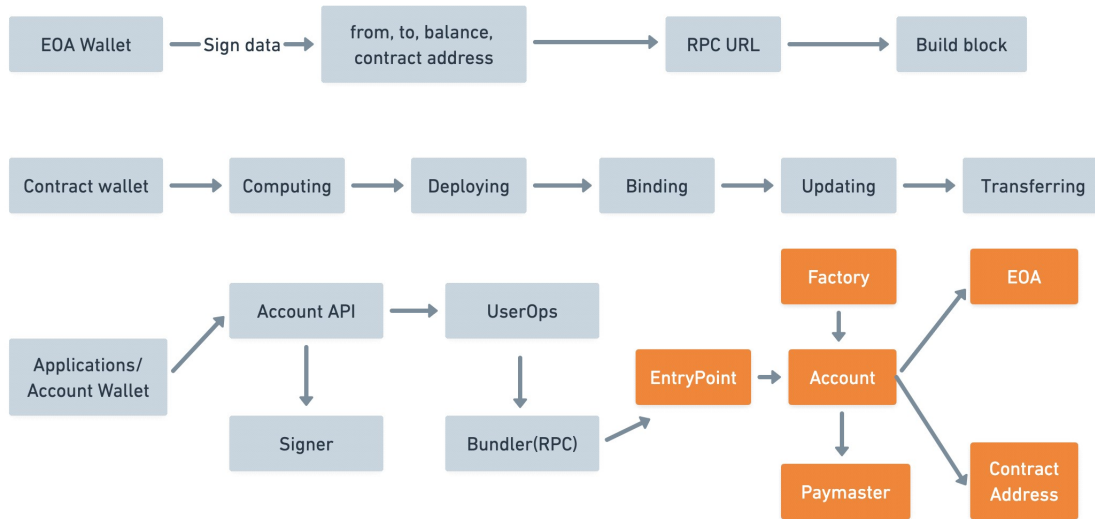
Figure 12: Ethereum Contract Account Procedure Analysis

Account Abstraction, It also need more revised on cost and composability with a balanced evaluation triangle: security, convenience and cost. Or not, the blockchain model of Ethereum can't support the mass adoption of future with billions of users. The industry is trying to launch RIP7560 (Web-6) to build a native Account Abstraction, but we need more ramp up. So, we should dive into this research area to face this challenge.

This research create an array of cutting-edge software tools and techniques in this research. Central to our computational approach was the utilization of Visual Studio Code, an extensible code editor that provided an efficient ecosystem for scripting and testing our analytical algorithms. We augmented this with Code Pilot, an AI-powered coding assistant, that helped streamline the development process by suggesting code snippets and facilitating the debugging of smart contract code. The combination of these tools allowed us to maintain a high level of precision in our analysis. Each step in our data processing and assessment workflow was documented meticulously to facilitate the replication of our research, thereby upholding the integrity and validity of our systemic review. The algorithms and tests implemented were crafted to be transparent and comprehensive, ensuring that our findings and conclusions could faithfully be explored and tested by fellow researchers and industry practitioners.

We select and create blockchain account models with systematic literature review and model analysis, we choose those the most profound impact models on the industry and provide the broadest insights into security, privacy, and adoption area. Consequently, our investigation covers important models such as Bitcoin's UTXO-based system and Ethereum's account-based framework, as these ecosystems represent significant milestones in blockchain technology and are widely recognized within both academic and industry spheres. In addition to these, we considered other emerging and less conventional models that may influence the future trajectory of blockchain account technology. By surveying these varied models, our study encapsulates a diverse demographic, spanning from early adopters embedded in the Bitcoin network to participants in advanced Ethereum smart contract platforms, and further to users of alternative blockchain infrastructures. The relevance of these models to our research aims stems from their substantial contribution to the blockchain landscape, shaping our understanding of how different account structures grapple with the challenges of security, privacy, and mass adoption.
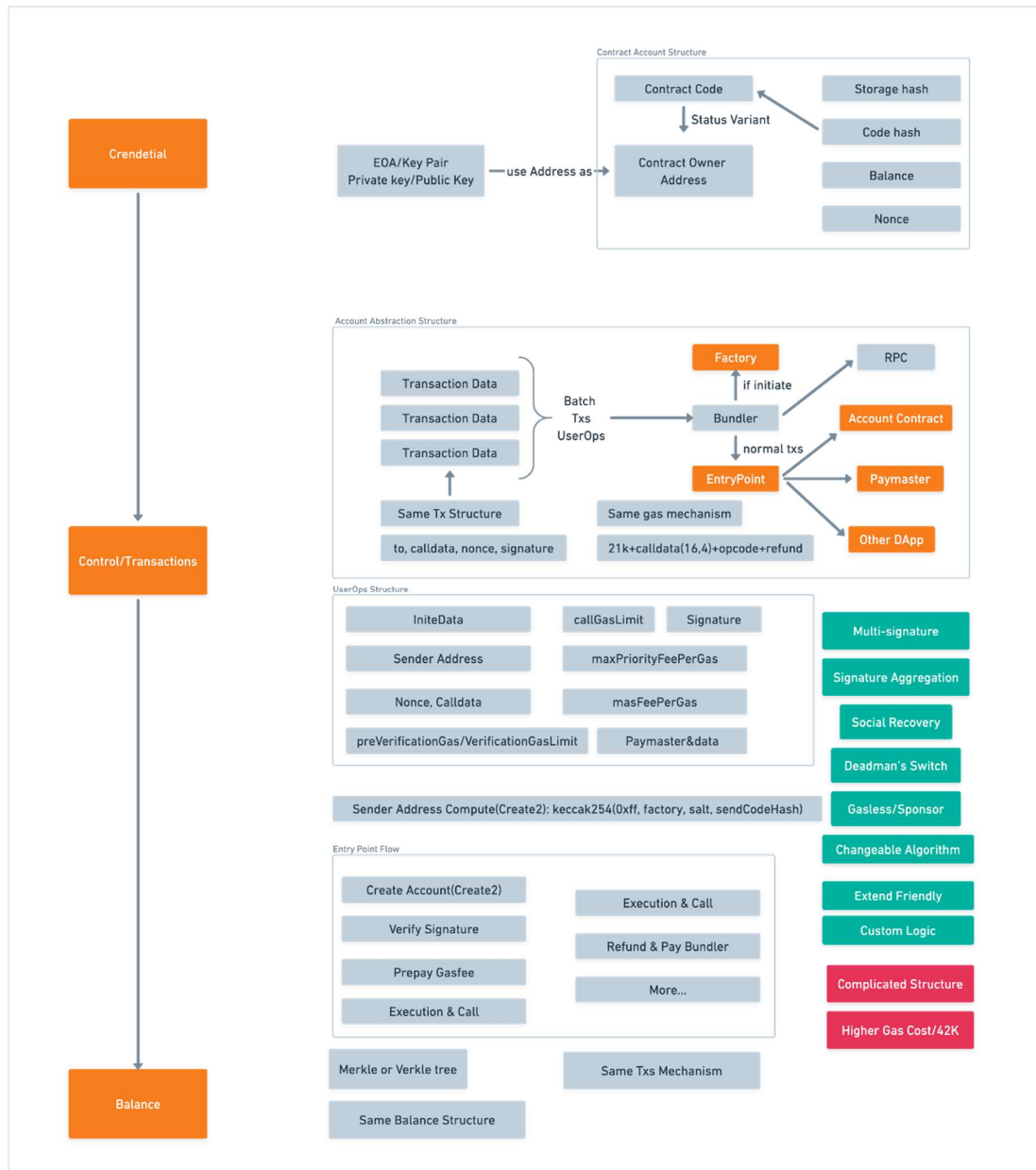
Figure13: Ethereum Account Abstraction Procedure Analysis

Our analytical framework dissected blockchain accounts into three fundamental submodules: credential, control, and balance, to offer a granular perspective on the intricacies of account models. The 'credential' submodule focuses on the authentication mechanisms that ensure rightful ownership, typically through cryptographic key management. 'Control' addresses the mechanisms that govern how transactions are initiated and recorded on the network, including consensus algorithms and smart contracts. Lastly, the 'balance' submodule reflects the methods for maintaining and updating the record of asset ownership. These submodules form the backbone of our comparative model review, interacting synergistically to produce an account's operational profile. To assess these components holistically, we employed a triadic lens of security, convenience, and cost — essential criteria for evaluating the propensity for mass adoption of blockchain technology. This multi-dimensional assessment model illuminates the trade-offs and interdependencies existing within and across blockchain account models, providing insight into their capabilities and limitations from the standpoint of end-user adoption. Through this structured decomposition and assessment approach, our study aims

to unravel the intricate fabric of blockchain account security and usability, paving the way for more informed design decisions that could foster wider acceptance.

Submodel	Behavior	Attributes/Tradeoffs	1: Bank Account	2: Bitcoin Account	3: EOA of Ethereum
Credential	Create	Who create the key	Centralized Authorities	Mathematics and Encryption Algorithm(MEA)	MEA
		Random number	No		
	Encrypt	How to encrypt	Personal password	PBKDF2(MSpass+"mnemonic"+salt(passphrase))	PRNG()=Hex(32Byte);ECDSA(32 PrivateKey)
	Keep	How to keep	keeping using rights	memonic or bare priate key or json file	keystore
	Transaction	Who can launch Tx	User/Authorities	Only User with Private Key(OUPk)	OUPk
Control	Encrypt	Txs with encryption	bare database	spec256k1(ECDSA)	spec256k1(ECDSA)
	Verify	How to verify	Trust Authorities	Trust enryption and key pair verification	Trust enryption and key pair verification
Balance	Logic	Where is the number	Centralized ledger	Decentralized ledger with scattered UTXOs	Decentralized ledger with different account changing Merkle tree
	Storage	How to save	RDBS	Blocks include Merkle tree and Txs, Secp256k1, SHA256	Blocks include Merkle tree and Txs, secp256k1, keccak_256
	Index	Search and interacte	RDBS	Merkel tree	Merkel tree

Figure 14: Ttrade-offs of account comparison evolution table part1

Submodel	Behavior	Attributes/Tradeoffs	4: AA of Ethereum	5: Other Blockchain Account	6: Universal Blockchain Account
Credential	Create	Who create the key	MEA	MEA	MEA
		Random number			
	Encrypt	How to encrypt	the same with EOA	like keccak and ECDSA	changeable; like keccak and ECDSA
	Keep	How to keep	EOA keystore & contract field with social recovery	EVM adaptable are keystore	keystore and social recovery and pubilc guardians
	Transaction	Who can launch Tx	OUPk and relation	OUPk	OUPk and trust network
Control	Encrypt	Txs with encryption	spec256k1(ECDSA)	spec256k1(ECDSA) and other way	spec256k1(ECDSA) and changeable encryption algorithms
	Verify	How to verify	Trust enryption and key pair verification and social relation	Encryption or MPC or mix method	Trust enryption and key pair verification and social relation and DTrust network
Balance	Logic	Where is the number	Same with EOA	Like EOA	Like AA with more friendly interface
	Storage	How to save	Same with EOA; improve Verkle tree future	Like EOA and other encryption algorithms	Like EOA and AA with changeable encryption algorithms
	Index	Search and interacte	Verkle tree	Merkle tree or other index	Merkle tree and future Verkle tree and mult-layer index

Figure 15: Ttrade-offs of account comparison evolution table part2

The research methodology employed herein is designed to systematically examine the landscape of blockchain account technology, yet it is not without specific scope limitations. Foremost among these are the decision to concentrate on the account models themselves, rather than probing into the multifaceted reasons that underpin the observed trade-offs in security, convenience, and cost. Consequently, while providing a granular analysis of blockchain account types — from their cryptographic foundations to their operational dynamics — this study does not delve into the broader application layer choices such as the strategic utilization of decentralized exchanges (DEXs) and other synthesized account constructs. Moreover, the account models selected for review, though representative of significant industry milestones, do not encompass an exhaustive inventory of all potential or nascent models. The rationale for such exclusions is manifold, encompassing feasibility within the research time frame, the current stage of industry adoption, and the practical usefulness to the readership in understanding the prevailing state of blockchain account security and operability. These delimitations are explicitly acknowledged to maintain clarity on the intended scope of this review and to signal opportunity scopes for subsequent research endeavours.

CONCLUSION

This paper reviews the academic articles and industry technology proposals and documents. It create **a universal model** from bank model and Bitcoin account model, Ethereum account and more. It is baed on a total view of blockchain industry account development to guide the future research.

The core conclusion is not only a universal model that explains all blockchain accounts in one model: **Credential Control Balance**. But also includes a universal model with **a tradeoff triangle model** to keep evolution balance. It is a **triangle of security, privacy, usability** to future mass-adoption.

And this research also get a series of **comparison tables**, which lead the direction and **regulate** the **trade-offs** of the model evolution gains and losses. This table contain items about the **basic behaviors and attributes** of every sub model. The most basic **decisions** we have to measure and choose from are based on different variations of these attributes and behaviors.

This paper finds that, blockchain account comprises **three sub models: credential, control and balance**. From Bitcoin to EOA, to AA and Native AA, blockchain account try to improve their security and convenience. Although there are many questions in security, convenience and cost for future mass adoption. It is also simple **description** of account model: credential control balance.

But it important in overall **consideration of three elements: security, privacy and usability**. Trillions of assets are secured by blockchain accounts, billions of users will step into these human digital public goods. This research points out the that these trade-offs of convenience and cost are complicated and be caution of the decentralization of those improvements of blockchain account.

We think the roadmap of Account Abstraction is right. The **challenge** is, that the two shortcomings of improving **convenience** and lowering the **cost** of use, while simultaneously improving the resulting security reduction in parallel. Otherwise, it won't be possible to match future large-scale applications.

It is possible to use this universal blockchain account model to analysis and **improve** the reality account model. We use the **comparison table** to evolute the AirAccount project model, balance the security, privacy and usability.

Let us just exploring the blockchain future like Ninja Turtles with a cooperative mindset (Web-14).

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Modelling of Physical Objects in the Senior Housing Project on a Digital Twin Platform

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ABSTRACT

In the era of digital innovation Using technology like the digital twin It is changing both the industrial and household sectors. This research focuses on the application of Digital Twin technology in housing projects for the elderly. Recognizing the potential for increasing flexibility Reduce resource use and increase overall productivity This study was inspired by smart cities around the world. Its aim is to bridge the gap between the physical world and the digital world with Internet of Things (IoT) tools.

The objective of this study includes creating a comprehensive model for a housing project for the elderly. Assessment of the adequacy of infrastructure and offers efficient methods for managing infrastructure. This research uses Digital Twin technology to monitor and improve the living environment of the elderly. It addresses key factors such as air and noise pollution, lighting conditions and weather effects. Comparing digital twin technology in residential projects provides valuable insights. It provides guidelines for selecting the most suitable technology for effective management.

In the end This research looks to support the well-being of the aging population by offering recommendations for the adoption of digital twin technology. This study aims to increase the efficiency of housing project areas so that they can be used effectively by the elderly. By shifting from a traditional document-based approach to a proactive and adaptive approach to infrastructure maintenance and improvement.

KEYWORDS: Digital Twin, Internet of Things (IoT), Infrastructure, Smart City, Cloud Computing

INTRODUCTION

The rapid advancement of digital technologies has revolutionized various sectors, including urban development and elderly care. Among these technologies, Digital Twin technology stands out as a groundbreaking approach, offering a bridge between physical and digital realms. This technology, primarily driven by the Internet of Things (IoT), Artificial Intelligence (AI), and Cloud Computing, creates dynamic virtual models of physical entities, enabling real-time monitoring, analysis, and simulation. Its application in urban infrastructure projects, particularly in senior housing, presents an opportunity to enhance the quality of life for the elderly while optimizing resource management.

Senior housing projects, catering to a demographically significant and growing segment of the population, require specialized infrastructure and services to meet the unique needs of the elderly. As the world grapples with an aging population, the demand for smart and responsive elderly care

solutions becomes increasingly critical. Traditional methods of managing housing projects often fall short in addressing these specialized needs, leading to inefficiencies and suboptimal living conditions.

This research paper delves into the application of Digital Twin technology in senior housing projects. It aims to demonstrate how this technology can model physical objects and infrastructure, leading to improved management and operational efficiency. By integrating IoT data into a digital twin platform, this study explores the possibilities of enhancing the living conditions for the elderly, ensuring that their specific needs are met with precision and care.

In doing so, the paper contributes to the growing body of knowledge in the field of smart city technologies, highlighting the role of digital innovation in addressing the challenges of elderly care. The integration of Digital Twin technology in senior housing projects not only aligns with the goals of smart city development but also opens new avenues for research and application in elderly care and urban infrastructure management.

RESEARCH OBJECTIVES

The overarching aim of this research is to harness the capabilities of Digital Twin technology to enhance the operational efficiency and quality of life within senior housing projects. To achieve this aim, the study sets forth the following specific objectives.

Develop a Digital Twin Model: Create an accurate and dynamic digital twin model of a senior housing project. This model should replicate the physical infrastructure, utilities, and services to facilitate real-time monitoring and simulation.

Integrate IoT Data: Seamlessly integrate data from IoT devices within the housing project into the digital twin. This integration aims to capture real-time information about the environment, utilities usage, and resident interactions.

Simulate Scenarios for Improved Care: Utilize the digital twin model to simulate various scenarios, including emergency situations, utility failures, and everyday activities. The goal is to identify potential challenges and devise strategies to enhance safety and comfort for the elderly residents.

Optimize Resource Management: Analyse data from the digital twin to optimize the use of resources such as energy, water, and space. This objective focuses on increasing efficiency, reducing costs, and minimizing environmental impact.

Evaluate User Experience: Assess the impact of the digital twin model on the residents and staff of the senior housing project. This evaluation should consider factors like ease of living, accessibility, and overall satisfaction.

Innovate Elderly Care Practices: Explore innovative approaches to elderly care through the application of digital twin technology. This involves examining how technology can be used to cater to the unique health and lifestyle needs of the elderly.

Contribute to Smart City Development: Align the findings and applications of this research with the broader goals of smart city initiatives. The study aims to demonstrate how digital twin technology can be a key component in developing smarter, more responsive urban environments.

Inform Policy and Best Practices: Provide insights and recommendations for policymakers and practitioners in the field of urban development and elderly care. The research should inform best practices for incorporating digital technologies into housing projects for the elderly.

Through these objectives, the research seeks to not only enhance the immediate environment of senior housing projects but also contribute to the larger discourse on technology's role in improving urban living and elderly care.

LITERATURE REVIEW
Mobile Sensing and Modelling Air Pollution in Urban Neighbourhoods

In the exploration of urban air quality management, the role of mobile sensing technologies emerges as a pivotal tool for the detailed assessment and mapping of air pollution levels. These innovative methods offer a dynamic and comprehensive approach to understanding the spatial and temporal distribution of pollutants across urban landscapes. By harnessing the power of mobile sensors, researchers and policymakers can pinpoint pollution hotspots with precision, facilitating targeted interventions. The adaptability of mobile sensing platforms allows for the real-time tracking of environmental changes, presenting an invaluable resource for the proactive management of air

quality. Such technology not only enhances the accuracy of pollution monitoring but also enriches our understanding of the factors contributing to air pollution in densely populated areas. Consequently, this approach empowers the development of effective strategies and policies aimed at mitigating the adverse effects of air pollution on urban dwellers, ultimately contributing to the creation of healthier and more sustainable urban environments.

Procedure of Invoking a JSON-based Web Service

The document on invoking JSON-based web services delves into the procedural nuances and technical intricacies involved in utilizing JSON (JavaScript Object Notation) for the efficient execution of web service requests. JSON, recognized for its simplicity and lightweight nature, serves as a cornerstone in the realm of data interchange, facilitating seamless communication between clients and servers. This guide meticulously outlines the steps necessary to construct well-formed requests that are sent to web services, detailing the methods by which such requests can be crafted, transmitted, and subsequently managed.

The narrative further elucidates on the critical aspects of handling responses from web services, emphasizing the importance of parsing and interpreting the JSON formatted data returned by the server. This process is pivotal for extracting valuable information and integrating it within various applications, thereby enabling a dynamic and interactive user experience. Additionally, the document explores the broader context of integrating with web APIs, showcasing the versatility of JSON in accommodating diverse application needs.

Through a combination of theoretical insights and practical examples, the literature offers a comprehensive exploration of leveraging JSON in the context of web services. It underscores the efficacy of JSON as a data format that not only streamlines communication across different platforms but also enhances the interoperability of web applications. This guide serves as an invaluable resource for developers and IT professionals seeking to harness the full potential of JSON-based web services, providing a roadmap for implementing robust and efficient web solutions.

Cloud Computing

The evolution and adoption of cloud computing have significantly transformed the landscape of information technology by introducing an innovative model for delivering and accessing computing resources over the internet. Cloud computing emerges as a paradigm shift, moving away from traditional on-premises IT infrastructure to a more dynamic, flexible, and scalable approach. This model encapsulates a variety of services, including Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS), each offering different levels of control, flexibility, and management to meet the diverse needs of businesses and individuals.

IaaS provides a virtualized computing infrastructure managed over the internet, allowing users to rent virtual machines, storage, and networks on a pay-as-you-go basis. This model frees organizations from the capital and operational costs associated with managing physical servers and data centre infrastructure. PaaS offers a development environment as a service, giving developers the tools and components needed to build and deploy applications without worrying about underlying hardware and software layers. SaaS, perhaps the most widely recognized model, delivers software applications over the internet, eliminating the need for installations, maintenance, and patch management by end-users.

Cloud computing's deployment models - public, private, hybrid, and community - cater to different organizational requirements and sensitivity levels concerning data control, security, and compliance. The public cloud provides services over the internet to multiple customers, whereas the private cloud is dedicated to a single organization. The hybrid cloud combines both, offering the flexibility to move workloads between private and public environments as needs and costs fluctuate. Community clouds are shared among organizations with common goals and requirements.

Beyond its models, cloud computing's core value lies in its scalability, allowing businesses to easily adjust resources in response to their needs, and in its cost-efficiency, which lowers the barriers to entry for small businesses and startups. By leveraging cloud technologies, organizations can enhance their agility, foster innovation, and drive business growth in an increasingly digital world.

Digital Twin Concept

The concept of Digital Twins represents a groundbreaking advancement in how we interact with and manage physical systems in the digital age. At its core, a Digital Twin is a dynamic, digital representation of a physical object or system across its lifecycle, utilizing real-time data to mirror the

physical world. This concept, which crosses the boundaries between the physical and virtual realms, allows for a detailed analysis, simulation, and optimization of systems in ways previously unimaginable.

In various sectors such as manufacturing, healthcare, urban planning, and more, the implementation of Digital Twins has started to redefine traditional operational processes. For instance, in manufacturing, Digital Twins facilitate the virtual testing of production lines and processes, enabling the identification and resolution of potential issues before they occur in the physical world. This predictive capability significantly reduces downtime and increases efficiency, leading to cost savings and enhanced productivity.

Moreover, in the healthcare sector, Digital Twins of human organs can simulate physiological responses to treatments in a controlled virtual environment. This revolutionary approach has the potential to personalize healthcare, making treatments more effective and less risky by predicting outcomes before actual procedures.

The integration of IoT devices plays a crucial role in feeding real-time data into Digital Twins, enhancing their accuracy and utility. By continuously updating with real-time data, Digital Twins evolve, offering insights that inform better decision-making. However, the widespread adoption of Digital Twins also presents challenges, including data privacy concerns, the need for substantial computational resources, and the requirement for interdisciplinary expertise to develop and manage these complex systems.

Despite these challenges, the future prospects of Digital Twins are vast, offering a glimpse into a world where the lines between the physical and digital blur, leading to more efficient, sustainable, and personalized solutions across all walks of life. As technology advances, the potential applications of Digital Twins are bound to expand, heralding a new era of digital transformation.

Digital Twin Agent for Super-Aged Society

In the context of an increasingly aging global population, the deployment of digital twin technology presents a novel and transformative approach to addressing the multifaceted challenges faced by the super-aged society. This innovative application of digital twins seeks to enhance the quality of life for the elderly, offering a fusion of technology and care that personalizes and improves healthcare outcomes and living conditions.

Digital twin technology in the super-aged society context functions by creating virtual replicas of elderly individuals. These replicas are dynamically updated with real-time health data collected through various IoT devices and sensors. This continuous stream of data allows for the monitoring of health conditions, enabling proactive interventions and personalized healthcare plans. The digital twin acts as a comprehensive health management platform, integrating data from medical records, wearable devices, and environmental sensors to provide a holistic view of an individual's health status.

Furthermore, this technology extends its utility beyond healthcare into assisted living environments. Digital twins can simulate and analyse the living conditions of the elderly, identifying potential hazards or areas for improvement in their immediate surroundings. By doing so, it ensures that living spaces are not only safer but also more conducive to independence and well-being.

The personalization capabilities of digital twins also pave the way for more tailored healthcare services. By understanding the unique health trajectories and needs of each individual, healthcare providers can offer treatments and interventions that are more aligned with the personal health profiles of elderly patients. This level of customization is critical in managing chronic conditions and preventing acute health episodes.

In summary, the application of digital twin technology in the super-aged society represents a forward-thinking solution to the complex challenges of aging. By harnessing the power of real-time data and virtual simulation, it offers a pathway to enhanced healthcare, safer living environments, and ultimately, a higher quality of life for the elderly. This integration of technology into aged care signifies a significant step towards more compassionate, efficient, and personalized care for aging populations worldwide.

Air Pollution and Mortality in Elderly Urban Population

The detrimental impact of air pollution on urban populations, especially among the elderly, has become a critical public health concern. Studies have increasingly pointed to the strong correlation between elevated levels of urban air pollution and the heightened risk of mortality and morbidity in

older adults. These findings underscore the urgent need for comprehensive strategies to mitigate the adverse health effects associated with air pollution exposure in this vulnerable demographic.

Air pollutants, notably particulate matter (PM2.5 and PM10), nitrogen dioxide (NO2), and ozone (O3), have been closely linked to a range of negative health outcomes, including respiratory and cardiovascular diseases, which are particularly prevalent in the elderly. The exposure to these pollutants can exacerbate existing health conditions, leading to increased hospital admissions, higher healthcare costs, and, most critically, elevated mortality rates.

The research highlights the necessity of adopting targeted policy measures aimed at reducing air pollution levels in urban centre. These policies could include the implementation of stricter emission standards for vehicles and industrial processes, the promotion of cleaner public transportation options, and the development of green urban spaces to help absorb pollutants. Additionally, the establishment of air quality monitoring networks provides vital data that can inform both public health advisories and long-term urban planning efforts to minimize pollution exposure.

Furthermore, the literature emphasizes the importance of interventions tailored to protect the elderly population. These may involve community health programs that offer guidance on minimizing outdoor activities during high pollution episodes, improving indoor air quality, and ensuring that health care systems are equipped to manage pollution-related health issues more effectively.

In summary, the mounting evidence of air pollution's impact on the health of elderly urban residents calls for a concerted effort from policymakers, urban planners, and health professionals. By prioritizing the reduction of air pollution and implementing protective measures for vulnerable populations, cities can significantly improve public health outcomes and enhance the quality of life for their older inhabitants.

A Knowledge-Based Approach for PM2.5 Air Pollution Effects Analysis

In addressing the critical environmental challenge posed by PM2.5 air pollution, a novel knowledge-based approach emerges as a strategic solution to decipher the complex interactions between particulate matter exposure and public health impacts. This methodology integrates a multifaceted framework that leverages advanced data collection, analysis, and interpretation techniques, aimed at offering a comprehensive understanding of PM2.5 pollution effects. The foundation of this approach rests on the utilization of knowledge-based systems, which amalgamate data from diverse sources, including real-time air quality monitoring, epidemiological studies, and environmental models, to construct a holistic view of air pollution dynamics and its health implications.

Central to this approach is the development of sophisticated algorithms and models that can accurately predict PM2.5 concentration levels in various environments, ranging from urban centres to rural areas. By harnessing the power of big data analytics and machine learning, the system can identify patterns and trends in air pollution, enabling the prediction of potential health risks associated with varying levels of exposure. This predictive capability is crucial for the formulation of effective public health advisories and the implementation of preventive measures.

Moreover, the knowledge-based system provides a platform for the dynamic integration of public health data, including hospital admission rates, respiratory and cardiovascular health records, and mortality statistics. This integration facilitates a deeper analysis of the correlation between PM2.5 exposure and health outcomes, enriching our understanding of the vulnerability of specific populations, such as the elderly, children, and individuals with preexisting health conditions.

By offering actionable insights and evidence-based recommendations, this knowledge-based approach empowers policymakers, public health officials, and environmental agencies to devise targeted strategies for air quality improvement. These strategies may encompass stricter air pollution control policies, the promotion of clean energy sources, and the enhancement of community health resilience against air pollution. Ultimately, the adoption of this sophisticated approach signifies a pivotal step towards mitigating the adverse effects of PM2.5 pollution on public health, fostering a cleaner, healthier environment for future generations.

IoT and Smart City

The advent of the Internet of Things (IoT) has ushered in a transformative era for urban development, heralding the conceptualization and implementation of smart city initiatives worldwide. At the heart of this revolution lies the integration of IoT technologies, which serve as the foundational pillars for enhancing urban infrastructure, services, and quality of life. Through the deployment of a

vast network of sensors and smart devices, cities are becoming more interconnected and responsive, paving the way for a new paradigm of urban living.

Smart city solutions, as discussed in the literature, encompass a broad spectrum of applications, from optimizing urban mobility and energy consumption to improving environmental monitoring and public services. These applications are not only instrumental in addressing the pressing challenges of urbanization, such as traffic congestion, energy sustainability, and pollution, but also in creating a more livable, efficient, and inclusive urban environment.

One of the key areas where IoT technologies are making significant inroads is in urban mobility. By leveraging real-time data from sensors and GPS devices, cities can streamline traffic flow, reduce congestion, and enhance public transportation systems. This results in not only a more efficient transportation network but also a reduction in greenhouse gas emissions, contributing to environmental sustainability.

Energy management is another critical aspect of smart cities, where IoT technologies enable the monitoring and optimization of energy usage within urban infrastructures. Smart grids, intelligent lighting, and energy-efficient buildings are just a few examples of how IoT is being utilized to reduce energy consumption and promote the use of renewable resources.

Furthermore, environmental monitoring through IoT devices offers unprecedented capabilities for tracking air quality, water levels, and pollution in real-time. This provides valuable insights for city planners and environmental agencies to implement proactive measures in safeguarding public health and the environment.

In summary, the integration of IoT technologies in smart cities represents a promising avenue for enhancing urban living. By harnessing the power of data and connectivity, cities can not only address current challenges but also anticipate and adapt to future needs, ensuring a sustainable, efficient, and vibrant urban future.

RESEARCH METHODOLOGY

This study aims to develop and evaluate a digital twin model for senior housing projects through a systematic methodology that incorporates both qualitative and quantitative research methods. The approach is designed to ensure a comprehensive analysis, encompassing the integration of digital twin technology within the context of smart city development and elderly care. The methodology is structured into several distinct phases as outlined below

Literature Review

A comprehensive review of the existing literature will be conducted to establish a theoretical foundation for the study. This will involve examining scholarly articles and reports on digital twin technology, smart city initiatives, and elderly care models. The review aims to identify current best practices, challenges, and gaps in the existing body of knowledge, guiding the development of the digital twin model.

Digital Twin Model Development

Design- The digital twin model will be conceptualized, outlining its architecture, components, and functionalities. This phase includes designing the physical layout of the senior housing facility, incorporating essential utilities, resident areas, and the integration of Internet of Things (IoT) devices.

Data Integration- Data from IoT devices within the housing facility will be integrated into the model. This includes sensors monitoring utilities, resident activities, and environmental conditions, enabling real-time data capture and analysis.

Simulation- Simulations will be created within the digital twin model to replicate real-world scenarios, testing emergency responses, utility management, and daily operations, facilitating the identification of potential improvements.
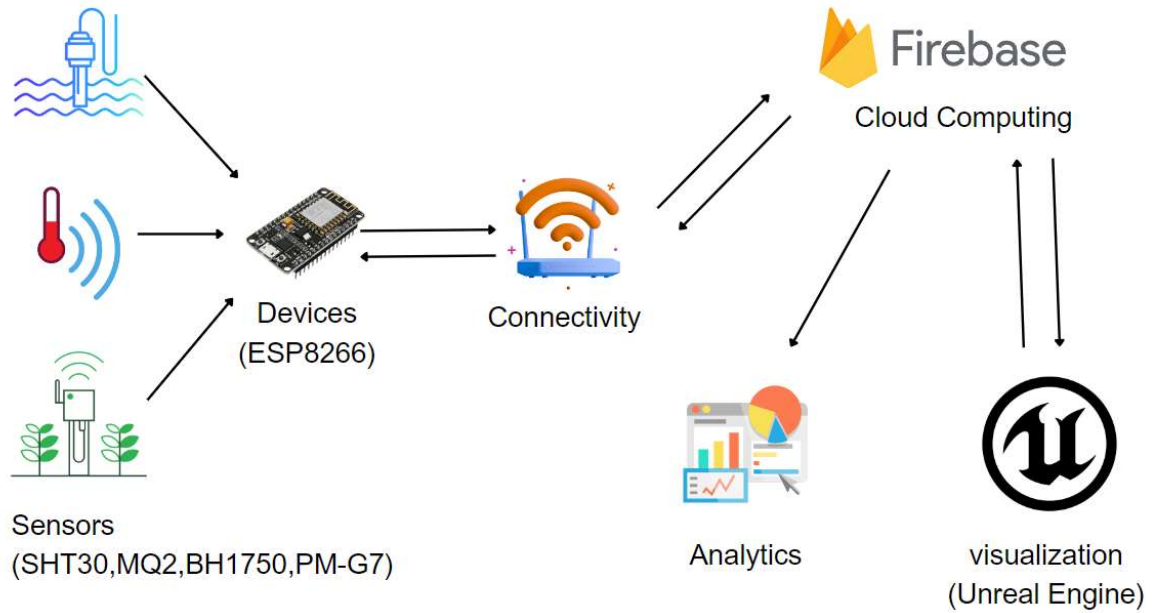
Figure 4: Digital Twin Platform framework

Data Collection

  Primary Data- Real-time data collection will be conducted using IoT devices within the senior housing project, focusing on energy usage, water consumption, and resident movement patterns.
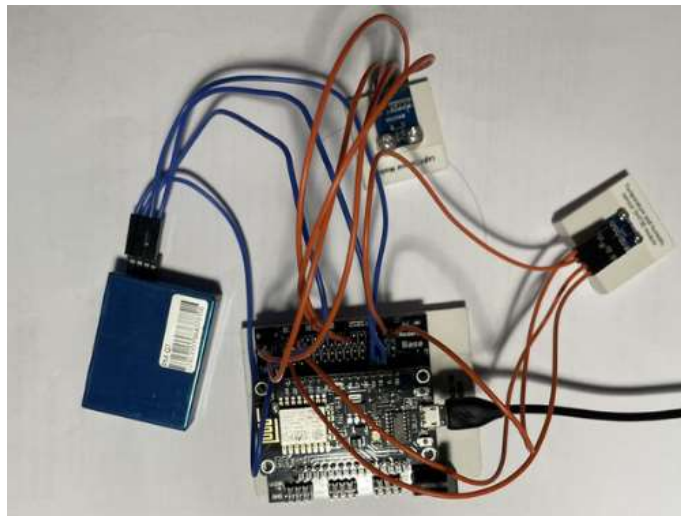

Figure 2: Esp 8266 & Sensors

  Secondary Data- Additional data will be gathered from existing records, reports, and relevant studies to support and complement the primary data collected.

  Data Analysis- Statistical and computational methods will be applied to analyze the collected data, aiming to identify patterns, trends, and inefficiencies within the system.
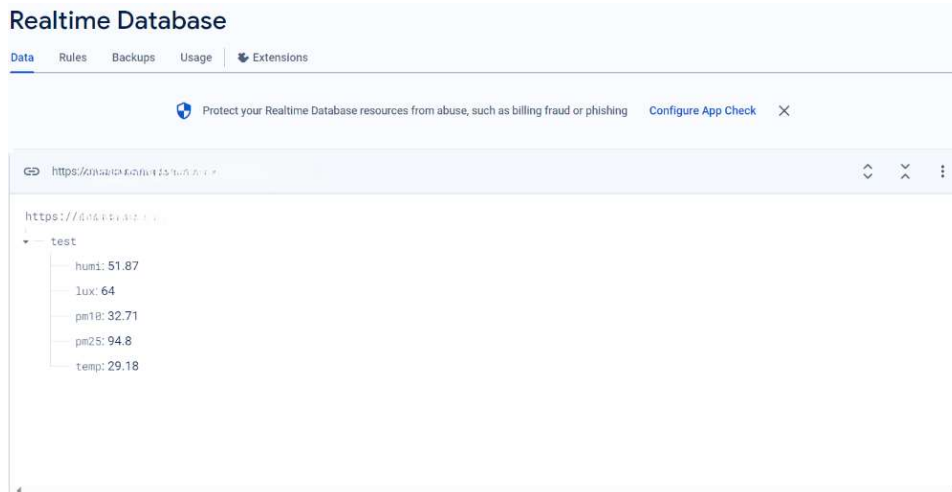
Figure 3: Realtime Database on Firebase

Model Validation

   Testing- The digital twin model will undergo rigorous testing to ensure its accuracy and reliability in reflecting the physical environment and its capability to respond to various operational scenarios.

   Feedback Incorporation- Based on stakeholder feedback and testing outcomes, the model will be refined to address identified issues and enhance its effectiveness.
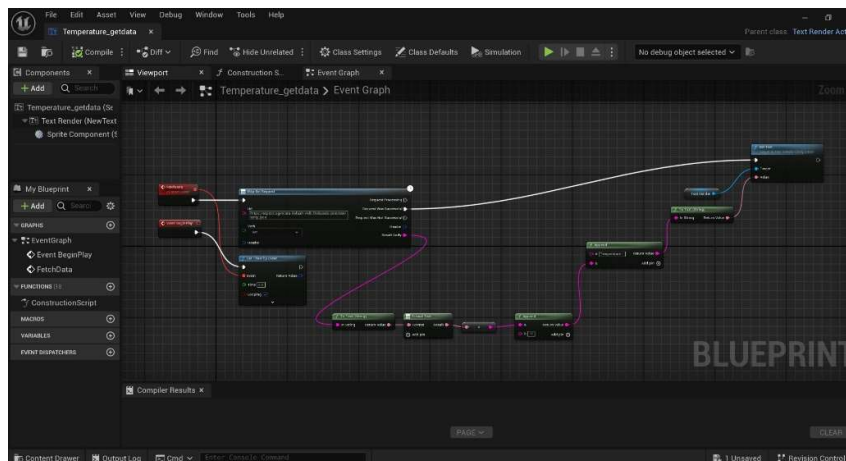

Figure 4: Unreal Engine 5 Blueprint base on C++

Evaluation and Assessment

   Performance Metrics- The model will be evaluated using predefined performance metrics, including resource optimization, resident satisfaction, and operational efficiency, to assess its impact and value.

   Comparative Analysis- A comparison will be made between the digital twin model and traditional management methods of senior housing facilities to highlight the benefits and potential improvements offered by the model.

   Ethical Considerations

   The study will adhere to stringent ethical standards, particularly concerning the privacy and consent of residents involved. All data collection and analysis methods will be designed and implemented with these considerations at the forefront.

Figure 5: Digital Twins base on Unreal Engine 5

By employing this comprehensive methodology, the study will rigorously develop, test, and evaluate a digital twin model for senior housing projects, contributing valuable insights and practical solutions for enhancing elderly care and facility management within the context of smart city development.

RESULTS

Results section for a research paper on the successful implementation and integration of Digital Twin technology in a senior housing project requires a structured approach that covers various key aspects of the project. Below is a format tailored for a research paper, including sections on technical implementation, operational efficiencies, safety enhancements, user interaction, comparative analysis, challenges, and future directions.

Implementation and Integration of Digital Twin Technology

The Digital Twin model was successfully deployed using an array of IoT devices, including SHT30 (temperature and humidity sensors), MQ2 (gas sensors for smoke and hazardous gases detection), BH1750 (light intensity sensors), and PM-G7 (particulate matter sensors), integrated with ESP8266 microcontrollers for efficient data collection. These devices were strategically placed throughout the senior housing facility to monitor environmental conditions continuously. Data collected by the sensors were transmitted in real-time to Firebase, utilizing Cloud Computing for analytics. This setup allowed for the dynamic modelling of the facility's physical environment, enabling precise control and monitoring.

Integration involved seamless communication between the IoT devices and the cloud platform. AI algorithms were employed to analyse the data for patterns and anomalies, facilitating proactive adjustments to the environment and predicting potential issues before they could escalate.

Operational Efficiencies and Environmental Monitoring

The implementation of the Digital Twin model improvement in the regulation of temperature and increase in air quality. Energy consumption was reduced to optimized heating, ventilation, and air conditioning (HVAC) systems.

Safety Enhancements and Emergency Response

Emergency Simulations: Through simulations, the Digital Twin system accurately predicted emergency scenarios, reducing response times.

Proactive Safety Measures: Continuous monitoring and AI analysis allowed for immediate adjustments to environmental conditions, mitigating risks and hazards.

User Interaction and Experience

Usability: Both residents and staff found the system easy to use, appreciating the intuitive interfaces and real-time environmental data visualization.

Impact on Daily Life: The enhanced living conditions were highly valued, with specific praise for features visualized in Unreal Engine 5, which provided immersive and interactive experiences.

Comparative Analysis with Traditional Management Methods

Cost Savings: The project reduction in operational costs due to optimized resource use.

Resident Well-Being: Improvements in environmental conditions contributed increase in resident satisfaction scores.

Challenges and Lessons Learned

Despite its success, the project faced challenges, such as integrating disparate systems and ensuring data privacy. These were overcome through rigorous testing and adherence to best practices in cybersecurity. Lessons learned include the importance of cross-disciplinary collaboration and continuous system monitoring for optimal performance.

Future Directions and Potential for Scalability

The research concluded with optimistic views on the scalability of Digital Twin technology. Potential expansions include broader applications in smart city initiatives and further integration of emerging technologies. Suggested areas for further research include the use of machine learning for predictive analytics and the incorporation of more advanced sensors for finer environmental control.

DISCUSSION AND CONCLUSIONS

This study embarked on developing a digital twin model for senior housing projects, integrating a blend of IoT technology, data analytics, and simulation within a unified framework. The results have illuminated the profound potential of digital twins in enhancing the operational efficiency and quality of life for the elderly.

The integration of IoT data into the digital twin model allowed for real-time monitoring and simulation of the senior housing environment. This technological synergy facilitated an unprecedented level of insight into daily operations, resident interactions, and utility usage. The simulations of emergency and routine scenarios highlighted the model's capability to predict and effectively respond to various challenges, ensuring resident safety and comfort.

The significance of this research lies in its contribution to smart city development and elderly care. By harnessing digital twin technology, the study offers a proactive approach to managing senior housing facilities. The findings underscore the potential for digital twins to revolutionize facility management, from optimizing resource use to improving emergency responses.

Despite its successes, the study faces limitations. The reliance on IoT devices introduces concerns regarding data privacy and security. Additionally, the complexity of accurately simulating real-world scenarios necessitates ongoing refinement of the digital twin model to capture the nuances of human behavior and environmental changes.

Future research should focus on enhancing the model's predictive accuracy and exploring the integration of more advanced AI algorithms for better decision-making. Further investigation into the ethical considerations surrounding data collection and privacy in senior housing is also essential. Expanding the digital twin concept to encompass a wider range of smart city applications presents an exciting frontier for exploration.

In conclusion, the development of a digital twin model for senior housing projects represents a significant stride toward smarter, more responsive urban living environments. The study's findings highlight the model's effectiveness in improving operational efficiency and resident quality of life. As cities continue to grow and the population ages, digital twins offer a scalable solution to meet the complex needs of senior housing, paving the way for broader applications in smart city initiatives. This research not only advances our understanding of digital twin technology but also sets a foundation for future innovations in elderly care and urban development.

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Deciphering Customer Sentiments: An Exploration of Preferences and Attitudes in Online Reviews A Study of Longji Rural Hotels

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ABSTRACT

The emergence of digital techniques and Web 3.0 has revolutionized the travel industry. User online review comments and electronic word-of-mouth (eWOM) generated on social media or platforms with social networking influence consumers' purchasing behaviour significantly. Ctrip.com, a prominent online travel agency (OTA) in China, has disrupted the industry by partnering with tourism and hotel service providers around the world and boasting millions of users. However, there is a dearth of research exploring the experiences of customers staying at self-owned rural hotels in ethnic minority places, especially using big data techniques. This study employs text mining and sentiment analysis to scrutinize 3393 online reviews of ten Longji rural hotels on Ctrip.com. Through sentiment polarity classification, and VADER calculates the sentiment value, to gain insight into customers' attitudes and preferences of rural hotels. The results indicated that satisfaction with hotel surroundings and facilities is the most positive emotion that users associate with, and is a crucial factor in their decision-making. Moreover, the study implied that Ctrip.com consumers may tend to favour positive reviews. The study's findings are discussed in terms of their impact on hotel product and service development, consumers' purchasing behaviour, and eWOM marketing.

KEYWORDS: Sentiment analysis, Text mining, Customer preference and attitude, Rural hotels

INTRODUCTION

The diversification of the tourism industry and the promotion of economic activities aimed at increasing the income of local communities have become central concerns for governments and organizations alike. Several studies, including those conducted by Chin et al. (2014) and Nooripoor et al. (2021) have demonstrated that the development of rural tourism is one approach that can address these concerns. Even after the Covid-19 pandemic, there has been a marked increase in the demand for travel outside urban areas. This trend is accompanied by a counter-urbanization phenomenon, with more and more people choosing to escape city life and seek refuge in the countryside.

As a result, the popularity of country accommodations, or rural hotels, has grown significantly. Customers are increasingly seeking personalized and unique experiences that cater to their specific tastes and preferences. As a result, the development of rural tourism has emerged as a critical tool for promoting economic growth and enhancing the well-being of local communities. The trend towards counter-urbanization and the increasing demand for personalized travel experiences underline the importance of this approach in the post-pandemic era.

This research focuses on the hospitality sector of the rural tourism business. For the past ten years, the hospitality and tourism academia field has put more weight on identifying the vital attributes of traditional five-star hotels or chain hotel establishments that contribute to customer satisfaction (Salem, 2014). Research on customers' preferences and attitudes toward rural hotels and tourism through big data mining techniques is limited. However, the obtained evidence highlights attributes that are similar to those identified in traditional hotel establishments. For example, Wiles and Crawford (2017) indicate that the four most significant attributes that determine rural hotel consumers' experiences are the scenery, the foods, the amenities, and the interaction with hosts. However, some of the immaterial attributes start to dominate the relevant study results, some studies have marginally

revealed concern for eWOM, socio-culture, host-guest relationships and social networks (Gharzouli et al., 2022).

This change in research interest reflects the main objects of this study, which are the tourist's opinions and emotions about rural hotels through mining online review comments. The interest in consumers' sentiments finds justification in a trend towards customer behaviour study throughout the hospitality and tourism (H&T) sector. This trend caused the appearance of eWOM marketing in online social networking sites, which proved itself an effective way for H&T operators to earn customer attention and consumption (Gharzouli et al., 2022). According to previous scholars, this research field is quite new that requires more academic studies.

This research has studied the 10 rural hotels each with comments over 200 lines of Longji village, and gathered 3394 lines of comments with 155,130 words (*translated into English) from Ctrip.com. Longji was chosen as the research setting because it is a typical ethnic minority area with economic and cultural prosperity due to the development of agritourism known as Longji Terrace Fields. The village has fourteen naturally formed minority villages, known as Dazhai, Pingan, Jinzhu Zhuang, Huangluo Yao, ancient Longji and so on. The local income was mainly from rice agriculture in the past. But with the development of rural tourism and hospitality, Longji Village has achieved economic prosperity, ethnic minority culture preservation, ecological sustainability, and employment growth. The eWOM of tourists has an important impact on the marketing and sustainable development of the H&T industry in rural tourism destinations (Reyes-Menendez et al., 2020), such as Longji Village.

This study has two objectives. Firstly, it seeks to recognize the preferences revealed by consumers on Ctrip.com, a prominent OTA in China which encourages consumers to generate comments after consumption, linked with the components they regard as the most valued. Then, it seeks to understand what attitude the consumers may have after experiencing the rural hotel products and services, and how would they influence the final evaluation of a hotel.

LITERATURE REVIEW
Rural hotel and tourism
Rural tourism encompasses all tourism activities that take place in rural areas, making use of the natural environment, landscape, culture, and heritage to offer visitors an immersive and authentic experience (Lane, 1994; McComb et al., 2017). This type of tourism benefits both visitors and rural communities, promoting sustainable development and preserving local traditions and values (Cunha et al., 2020; McComb et al., 2017).

A rural hotel is an emerging form of tourism lodging that combines the features of homestays and commercial hotels (Dey et al., 2020). It is an upgraded version of a traditional homestay, decorated in a tourist-friendly and commercial style (Wilson-Mah, 2024). Rural hotels are typically owned by individuals or families residing in villages (Gao & Wu, 2017). Tourists can experience the cultural and traditional village community living (Kachniewska, 2015) and enjoy the ecological and natural scenery of agriculture or farming (Kachniewska, 2015). In some developing tourist destinations, rural hotels employ front desk, steward, and housekeeping staff from the local community, providing a more authentic experience to customers (Guan et al., 2019).

The hospitality industry encourages rural communities to participate in the tourism industry (Briedenhann & Wickens, 2004). Travellers can interact with the host families, form direct relationships with locals, and experience the unique lifestyle and culture at comparatively lower accommodation costs (Schuckert et al., 2018). Rural hotels are known by various terms, including country hotels or inns, agritourism accommodations, agro-lodges, eco-lodges, rural guesthouses, B&B, rural lodges, farm stays, rural retreats, and village inns (Fennell, 2008; Oppermann, 1996; Tew & Barbieri, 2012). Hereafter, all these variants will be referred to as rural hotels in this paper.

Customer preference and attitude of rural hotels
Customer preference refers to the specific choices and inclinations of customers regarding various aspects or qualities of a product or service. It can be understood as the criteria and quality that customers consider important when evaluating and selecting hotels for their trips. To identify customer preferences in the context of hotel online reviews, it is essential to understand the aspects or attributes that are important to customers when making a decision (Zhu et al., 2021). Bian et al. (2022) stated that customers' preferences for hotel attributes differ based on various factors, such as the type of

customer and their travel purpose. The categories of hotel attributes that customers care about include service quality, room type, surroundings, price, transportation, facilities, catering, sanitation, parking, environment, and epidemic prevention (Bian et al., 2022). Customers who aim to relax during their trips are more likely to rate all attribute categories positively (Bian et al., 2022).

In the context of customer behaviour, "attitude" refers to a customer's evaluations, feelings, and tendencies towards an object (Ajzen, 2014; Cohen et al., 2014). It is a psychological construct that represents an individual's degree of liking or disliking an item, formed through experiences, information received, and interactions with the product or service (Eiser, 2001; Yuksel et al., 2010). Attitude can be influenced by various factors like social influences, personal values, and perceived needs (Li & Cai, 2012). Although attitudes tend to be relatively enduring (Haugtvedt & Petty, 1992), they can change based on new information, experiences, or persuasive communications (Hill et al., 2013). A positive attitude towards a brand or product typically leads to favourable behaviours such as repeat purchases and positive word-of-mouth (Hogan et al., 2004), while a negative attitude might result in unfavourable behaviours like negative reviews and complaints (Browning et al., 2013).

Potential travellers often use social media sites and OTA platforms to read reviews before making travel decisions. In addition, eWOM allows other customers to get a good idea about the destination and the quality of hospitality services provided. Understanding and analyzing opinions shared by tourists on social and commercial networks provides valuable information for both travellers and businesses in the H&T industry. It helps travellers make informed decisions while allowing hotel owners and marketing managers to understand customer preferences and improve their services in a way that is beneficial to both the customer and the business operators (Gharzouli et al., 2022). In this research, the exploration for preferences and attitudes encompassed a range of elements including service and amenities satisfaction, location and environment opinion, cultural expectations, and H&T sustainability.

Text mining and sentiment analysis

Text mining refers to the process of extracting valuable information and insights from large volumes of unstructured text data. It involves the use of linguistic and statistical techniques to analyze and interpret text, such as online reviews, social media posts, and surveys (Park, 2023; Serrano et al., 2021). It involves applying various algorithms and statistical models to discover patterns, relationships, and insights within the text (Nilashi et al., 2021). This process typically includes tasks such as data pre-processing, sentiment analysis, topic modelling, and aspect identification (Serrano et al., 2021). Through text mining, patterns, trends, sentiments, and other relevant information can be extracted from the text data, providing valuable insights for businesses and researchers (Mostafa, 2013). It allows for the identification of key themes, sentiments, and topics within the text, which can be used for various purposes such as customer sentiment analysis, opinion mining, content analysis, and more. Overall, text mining enables the transformation of unstructured text data into structured and actionable information (Park, 2023).

Sentiment analysis, also known as opinion mining, is a vital sub-field of the Natural Language Processing (NLP) discipline that deals with processing textual data (Zvarevashe & Olugbara, 2018). It is a methodology used to analyze and understand the subjective information provided by users in review comments (Serrano et al., 2021). For hotel reviews, NLP-based techniques are also applied for sentiment analysis in the hospitality industry (Gharzouli et al., 2022). It employs data mining techniques to extract and process the sentiments expressed by users towards specific topics or attributes of hotels. Sentiment analysis can determine whether users have positive or negative emotions towards certain aspects of their stay, such as the cleanliness of the property or the location (Serrano et al., 2021).

This paper used text mining to identify the most frequently used words in comments to explore consumers' preferences for hotel attributes and used sentiment analysis to identify the overall sentiment and preferences of consumers based on their review comments.

METHODOLOGY

The data mining process mainly includes data collection, data cleaning, data classification, data clustering and data visualization. To use data mining in consumer preference and attitude research, this paper conducted the data mining process in three steps which are data collection, pre-processing and analysis.

To target the research objectives, this research proposed an online hotel review analysis based on text-mining techniques. Firstly, the Octopus data collector is used to crawl online review comments of rural hotels, and it is necessary to preprocess these reviews. Secondly, the 'spacy,en_core_web_md' word segmentation algorithm of Python is used for word segmentation and keyword extraction, and word cloud is provided for visualizing customer preferences. Thirdly, the VADER toolkit, which is suitable for sentiment analysis of English texts on social media, is selected to calculate the sentiment value of these reviews. With sentiment score distribution graphs, customer attitudes are indicated.

The results are verified by accuracy rate, precision rate, recall rate and F1-Score. The process proposed in this study has solved the following problems well: with the characteristics of online hotel reviews, constructing an H&T dictionary and stop word list to optimize the effect of word segmentation; Extracting keywords from online hotel reviews and visualizing them with word cloud images to obtain rural hotel consumers' preferences, so that hoteliers can make more improvements on marketing and service; Performing sentiment analysis on consumer opinions, and visualized data by sentiment score distribution graphs to reflect customer emotions.

Data collection

In this research, the data collection is realized through the technology of a web crawler, which is a URL that continuously obtains various web contents from Internet pages through hyperlinks and document retrieval methods. The main program of the web crawler is jointly completed by three modules: URL manager, web page downloader and web page parser (Chang, 2022). The technique used in this research is Octopus data collector, which is a commonly used web crawling software that can simulate real user behaviour through unstructured data.

The database was retrieved through Octopus. The software collected data from the Top-Ten-Favoured rural hotels from Longji village, each with more than 200 pieces of review comments. The raw data included hotel name, consumer ID, room type, check-in time, travel type, rating scores, and consumer review comments. To study the hotel customers' preferences and attitudes based on content analysis, the review comments were extracted and translated from origin Chinese into English through machine translation (Google API) to be processed. The consumer review comments collected were from the last three years which ranged from October 2020 to September 2023. As a result, the final dataset contained 3394 unique comments with 155,130 words.
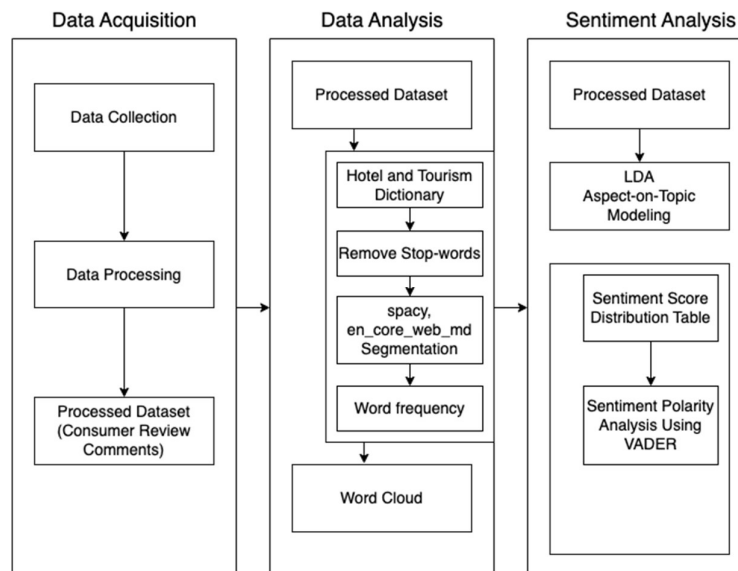

Figure 1: Workflow of text mining

Data processing

In the stage of data pre-processing, the main task is to eliminate duplicate and stop words to get an effective database. Text segmentation and part-of-speech tagging are carried out for a cleaned dataset. Text segmentation is the basis of text classification and analysis. This paper used the

Weiciyun.com (Micro-Word Cloud, MWC) analysis system for word segmentation, word frequency and sentiment analysis. MWC is a commonly used auxiliary research tool for scholars in the field of data mining research, using the English word segmentation algorithm based on 'spacy,en_core_web_md', which is an advanced natural language processing tool that uses deep learning techniques to efficiently and accurately implement English text segmentation tasks. The models used include OntoNotes 5, ClearNLP Constituent-to-Dependency Conversion and WordNet 3.0, which provide rich language information and semantic knowledge. We imported the raw data into the WMC analysis system in Excel format. Then, a data pre-processing step was carried out to clean the collected data. Tasks such as English word segmentation, stopping words, part-of-speech tagging, and word frequency statistics can be completed. Firstly, we eliminated punctuation marks, numbers, and special characters (#, @,",/, and\). Then we used a stop words list from RANK NL, to exclude the words that might distort the analysis. Lastly, we gathered a dataset with 3238 lines of comments with 90,670 words after data pre-processing.
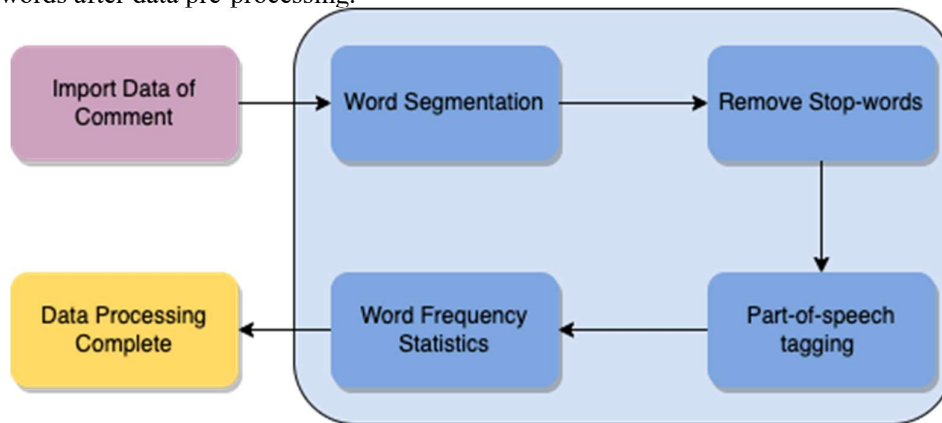

Figure 2: Workflow of data processing through MWC

Data analysis

This study aimed to explore the attitudes and preferences of rural hotel consumers after their stay, and sentiment analysis was used as the method to achieve this objective. The process involved extracting and processing subjective information from consumer review comments to understand their emotions towards a specific topic.

The research relied on VADER (Valence Aware Dictionary and sEntiment Reasoning), which is an approach to sentiment analysis through computational linguistics established by Hutto & Gilbert (2014). This tool uses dictionaries to identify polarity (positive, negative, or neutral) and emotional intensity in a text. Hutto & Gilbert (2014) compared VADER to seven other sentiment analysis lexicons, including Linguistic Inquiry Word Count (LIWC). It has a correlation coefficient of 0.881, comparable to human raters, and an F1 score of 0.96, outperforming human raters. Additionally, VADER combines lexical features with five general rules that reflect grammatical and syntactical conventions used by humans when expressing sentiment intensity. This enables VADER to accurately assess sentiment in different types of text, such as product reviews on social media. The tool also considers reinforcement words, negative words, degree adverbs, emoticons, punctuation marks and other web-based language expressions in the text to calculate the overall emotion score of the text.

Sentiment analysis was carried out in several stages. The first stage consisted of an initial approach to the preferences of rural hotel consumers through the identification of prominent aspects when they post reviews online spontaneously and freely. For this purpose, on the one hand, the terms most frequently mentioned by hotel customers were identified and represented in a bar chart. On the other hand, MWC was used to obtain a conceptual map with latent semantic dimensions identifying the terms' hidden relationships with each other. The second stage was to implement preference analysis using Latent Dirichlet Allocation (LDA), which aids in the identification of the latent aspects in a large dataset of review comments (Li et al., 2018) to extract dimensions of attractions (Nilashi et al., 2021). LDA is an unsupervised probability generative scheme that randomly produces observed contents (Panichella, 2021), and is a mechanism used for topic extraction from a textual corpus (Clifton et al., 2004). The algorithm estimates the latent themes, then proceeds to classify each word

to a theme, and finally assigns the theme for each word. Once the latent aspects were obtained, their theta coefficients were calculated, specifically, the probability that a text is associated with a specific aspect. After these coefficients were established, their average were calculated, thereby shedding light on the preferences (Luo & Tang, 2019) of rural hotel consumers expressed in their review comments. The final stage was an analysis of attitudes, which was conducted by identifying the sentiment polarity of each review comment through text mining. The VADER's Sentiment Lexicon was proposed as an analysis framework.

Table 1: The terms frequency of customer review comments

Rank	Terms	Frequency	TF-IDF	Rank	Terms	Frequency	TF-IDF
1	good	3373	0.0085	26	eat	439	0.0052
2	boss	2175	0.0092	27	platform	435	0.0051
3	hotel	1818	0.0103	28	balcony	433	0.0049
4	room	1776	0.0088	29	recommend	427	0.0047
5	terrace	1095	0.0077	30	luggage	423	0.0046
6	see	932	0.0073	31	owner	419	0.0049
7	scenery	926	0.0067	32	home	419	0.0050
8	rice	841	0.0072	33	stay	414	0.0049
9	delicious	817	0.0065	34	enthusiastic	397	0.0044
10	service	785	0.0062	35	breakfast	391	0.0045
11	beautiful	770	0.0064	36	bamboo	384	0.0051
12	clean	674	0.0058	37	chicken	364	0.0046
13	view	670	0.0062	38	facility	360	0.0044
14	mountain	629	0.0065	39	pick	358	0.0043
15	time	621	0.0061	40	live	346	0.0043
16	lot	596	0.0058	41	family	345	0.0043
17	parking	586	0.0058	42	car	339	0.0045
18	help	586	0.0057	43	walk	337	0.0044
19	location	579	0.0054	44	observation	328	0.0043
20	food	569	0.0055	45	store	326	0.0043
21	take	542	0.0056	46	child	315	0.0044
22	wine	496	0.0053	47	send	310	0.0041
23	warm	485	0.0050	48	free	310	0.0042
24	environment	466	0.0048	49	taste	309	0.0040
25	comfortable	462	0.0050	50	great	304	0.0040

The process of sentiment analysis was executed in several stages. Firstly, an initial approach was implemented to gauge the preferences of rural hotel consumers. This was done by identifying the significant aspects of their reviews that they shared spontaneously and freely online. To accomplish this, the team identified the most frequently used terms by hotel customers and represented them in Table 1. Additionally, the researchers used MWC to create a conceptual map that revealed the latent semantic dimensions of the terms and their hidden relationships.

The next stage involved the implementation of preference analysis using Latent Dirichlet Allocation (LDA) to extract the latent aspects of a processed dataset of review comments, which supported in identifying the dimensions of attraction. LDA is an unsupervised probability generative scheme that randomly produces observed contents, and it helps to identify the themes present in a textual corpus. The algorithm estimates the latent themes, classifies each term to a theme and assigns the theme for each term.

Subsequently, the researchers calculated the theta coefficients of the latent aspects, which gave them an idea of the probability that a text is associated with a specific aspect. This allowed them to determine the preferences of rural hotel customers expressed in their review comments. Finally, the

team analysed attitudes by identifying the predominant emotions in each review comment through text mining. The VADER's Sentiment Lexicon was proposed as an analysis framework to execute at this stage.

In summary, the sentiment analysis was carried out in several stages, enabling the team to gauge the preferences of rural hotel consumers. The research employed various techniques, including word cloud and LDA, to extract latent aspects and calculate theta coefficients that were used to determine customer preferences. Finally, the researchers identified the predominant emotions through sentiment analysis using VADER's Sentiment Lexicon as a framework.

RESULTS

Preferences of rural hotel consumers

In the initial phase of the sentiment analysis, we conducted a descriptive analysis to explore the preferences of rural hotel consumers. We used the "spacy, en_core_web_md" dataset to unify all the terms. Next, we selected every term that appeared more than 300 times, resulting in a total of 50 key terms. Figure 3 presents a bar chart with the 50 most frequently mentioned terms. The chart provides a hierarchical visualization approach (Hunt et al., 2014) and shows the exact frequency of each term. We observed that "good" and "boss" were the most frequently mentioned terms, with over 2000 times, indicating the overall perception of Longji Village hotel consumers.
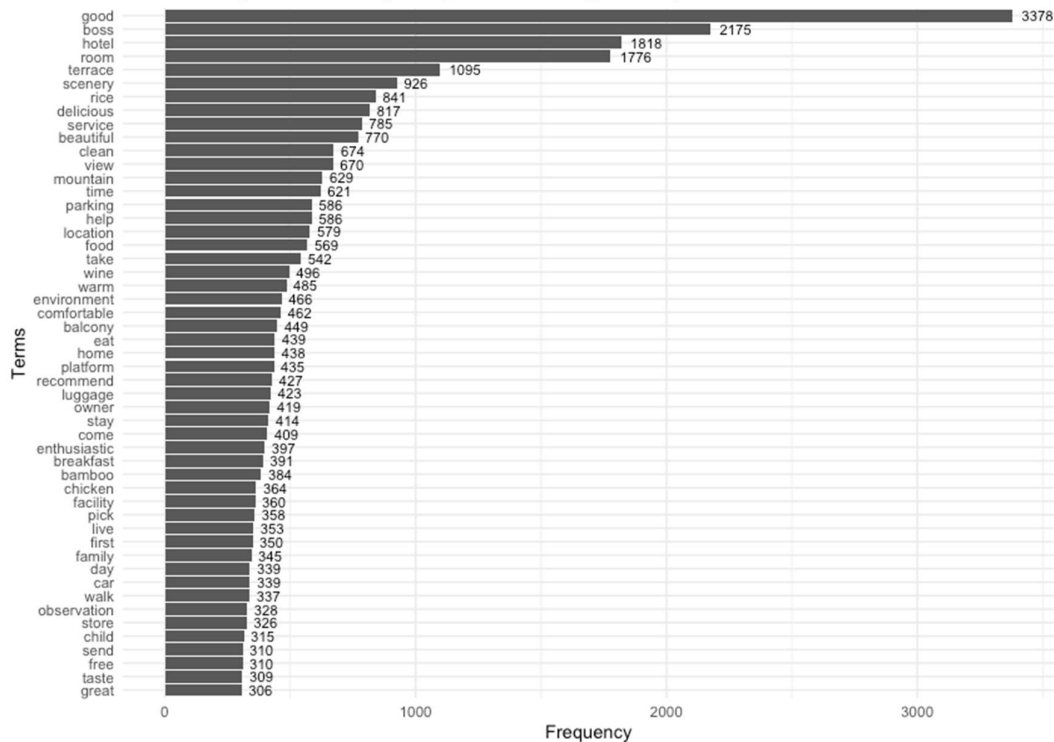

Figure 3: The 50 most frequently mentioned terms

We then noticed that terms focusing on lodging attributes such as "hotel" and "room" were popular, as well as words related to the surroundings of the property like "rice," "terrace," and "scenery." Additionally, terms such as "comfortable" and "clean" were related to the features of the hotel, while "warm" and "enthusiastic" referred to the characteristics of its service. A lot of positive emotions such as "delicious," "great," and "beautiful" were also mentioned, and there was a lack of negative emotion terms.

After that, we performed a relational semantic analysis using MWC, which allowed us to obtain a network map of the relevant keywords. This technique is especially useful for big data analysis (Brochado et al., 2017; Cheng & Jin, 2019), and researchers interpret the results. Figure 4 presents a network map in which the node represents the keyword, and the connecting line relates to the co-present value of any two terms. The node size has a positive correlation with the frequency,

while the thickness of lines is highly related to the co-present values. It shows that the four most prominent terms are "hotel," "boss," "room," and "beautiful." The term "boss" reflects the importance of the satisfactory factor in the comments of rural hotel consumers. On the one hand, the term appears highly with the other three key terms. It also connects to the terms describing internal and external products ("room," "scenery," "terrace," "parking lot"), and service features ("enthusiastic," "hospitable," "breakfast," and "luggage"), connecting to the term "room".
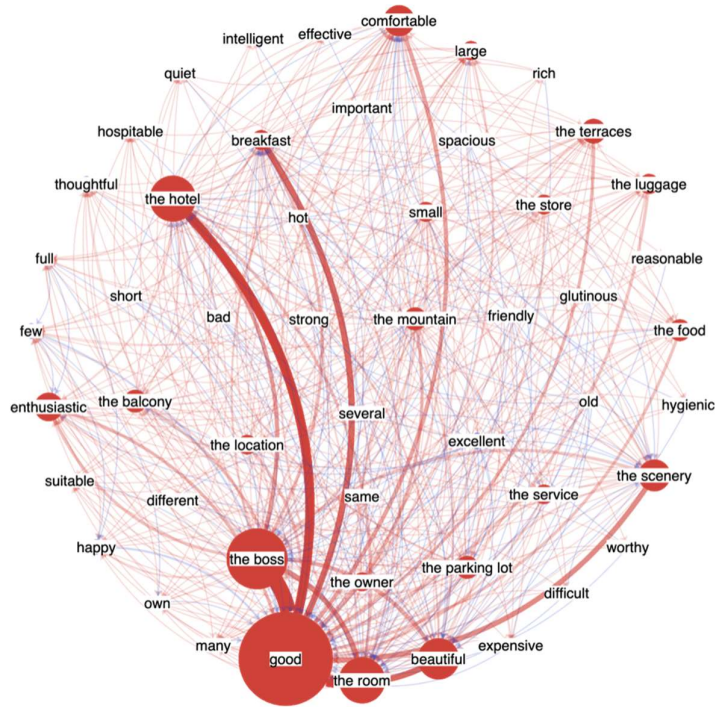
Figure 4: Network map of key terms

"Room" includes concepts that refer to the service of these establishments, thereby connecting them with "beautiful" and "comfortable." "Boss" appears to be the centric point between the dominant terms and other latent dimensions. This connectivity anticipates the preferences of rural hotel consumers of lodging experience related to their demands for beautiful scenery and comfortable rooms, and links with the hotel's hospitable services, which affects their assessment and final decision on whether to recommend the property to potential consumers. The prevalence of the "beautiful" term highlights the importance attached by rural hotel consumers to property amenities although it appears to be an important issue connected to the dimension of feeling the external environment during the accommodation experience.

Once the relational semantic analysis was explored, sentiment analysis was used to deepen the knowledge of the emotions contained in the online review comments of rural hotel consumers. To this purpose, the VADER's Sentiment Lexicon previously described was used. The results obtained show that positive sentiments are predominant and that positive expressions ("good," beautiful," "help," and "clean") are more common than negative expressions ("problem," lie,""bad," and "hard"). It appears that besides "good" and "beautiful", "help" was one of the most prevalent expressions. Figure 5 shows that consumers mentioned most were the hotel owners helped with carrying luggage, picking tourists from the parking lot, booking tickets, and upgrading the rooms.

Aspect term clustering and sentiment analysis

To deepen the sentiment analysis with greater methodological rigour, the LDA algorithm was used to extract the latent aspects of online review comments of rural hotel consumers. A document and term matrix were created, and the parameters for the identification of latent aspects were established using the Gibbs sampling strategy. Generally, the researcher decides how many latent aspects will be extracted (Maier et al., 2018). In this case, the review corpus suggested four major aspects because four is the number of characteristics Ctrip.com users rate in the digital platform after

their stay. The frequency of each term was counted to assign to each of the four latent aspects extracted, as shown in Figure 5. A holistic interpretation of the seed terms included in each aspect allowed them to be labelled because the preferences expressed by rural hotel consumers in their comments were known.
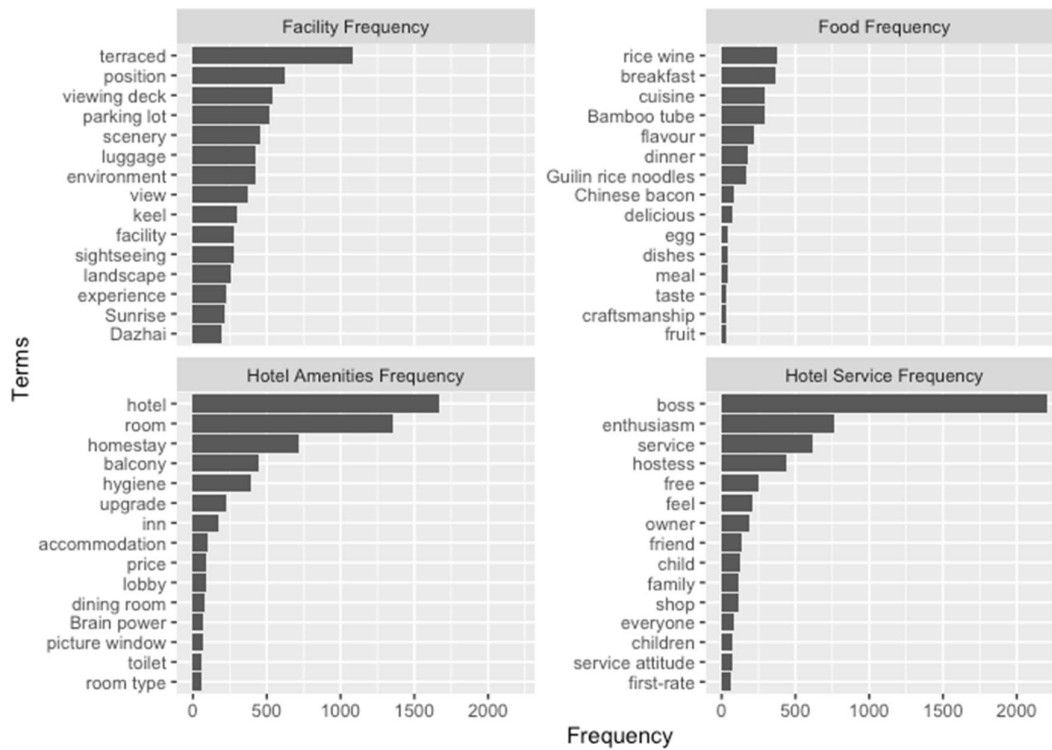

Figure 5: Latent aspects in review comments from Longji Village hotel consumers

The first latent aspect, "Facilities", describes the characteristics and resources of the surroundings (scenery, environment, infrastructure). The second aspect, "Hotel amenities", includes the seed terms related to the hotel's core products (room, decoration, linen). The third aspect, "Hotel service", is linked in the literature with hotel hosts and staff. The fourth latent aspect is "Food," which is the catering provided in the hotels (breakfast, dinner, drinks).

The last step is to apply aspect-based sentiment analysis (ABSA) to link the four latent aspects identified with the polarity of the sentiments awakened in rural hotel consumers. As the previous general sentiment analysis anticipated, the terms frequently mentioned by each aspect of rural hotel consumers reflect positive attitudes, such as "enthusiastic""delicious", "beautiful" and "clean".

The emotional value was calculated to rank the preferences revealed by rural hotel consumers, where a higher average value indicates the latent aspect to which rural hotel consumers devote more attention in their comments. The coefficients obtained were as follows: "facility" (12.89), "home amenities" (17.78), "hotel service" (18.81) and "food" (19.39). Significantly, the most preferred latent aspect for rural hotel consumers was "food"; therefore, their experience is highly mediated by this aspect. From these results, the first objective of the present investigation is fulfilled. Next, the second objective is addressed, that is, to explore consumers' attitudes toward rural hotels.

Attitudes of rural hotel consumers

Once the relational semantic analysis was explored, sentiment analysis was used to deepen the knowledge of the emotions contained in the online review comments of rural hotel consumers. To this purpose, the VADER's Sentiment Lexicon previously described was used. The results obtained show that positive sentiments are predominant and that positive expressions ("good", "beautiful", "help", and "clean") are more common than negative expressions ("problem,""lie,""bad," and "hard"). It appears that besides "good" and "beautiful", "help" was one of the most prevalent expressions in the aspect of "hotel service". Figure 6 shows that consumers mentioned most were the hotel owners and

staff helped with carrying luggage, picking tourists from the parking lot, booking tickets, and upgrading the rooms.
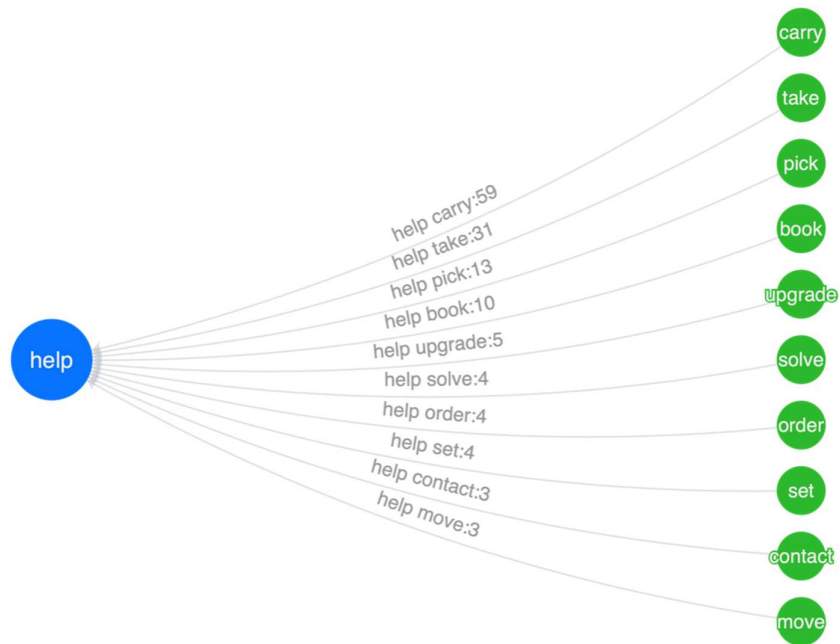

Figure 6: Terms co-occurrence frequency with "help"

Table 2 shows customer attitudes toward each latent aspect. This table shows an attitude map of rural hotel consumers, which could be an alternative tool for characterizing them. Because customers express online reviews through attitudes, which means identifying different types of consumers is possible. Some terms with a strong sentimental charge were repeated in almost all latent aspects, such as "lovely", "wonderful", "perfect" and "friendly" among the positive ones or "feeling" and "treat" among the negative ones. The terms linked to the hotel service aspect, such as "hospitality", "cooking skill" or "honest" are fundamentally associated with a positive attitude as well as "warm-hearted", which falls directly and exclusively into the positive category. However, some recurring terms in all types of stay, including those with families, friends, and alone, are linked closely to negative attitudes such as "not good", "untidy" to "facility" and "hotel amenities", "low price-performance ratio" to "food", or "unhealthy", "unsafe" to "hotel service".

Latent Aspect	Sentiment Classification	Review Volumn	Sentiment Scores
Surrounding and Facility	Positive	947	0.92
	Neutral	118	
	Negative	25	
Hotel Amenity	Positive	671	0.81
	Neutral	314	
	Negative	33	
Hotel Service	Positive	708	0.89
	Neutral	95	
	Negative	40	
Food and Beverage	Positive	370	0.90
	Neutral	61	
	Negative	11	

Table 2: Sentiment scores of latent aspects

The process proposed in this study has solved the following problems well: with the characteristics of online hotel reviews, constructing an H&T dictionary and stop word list to optimize the effect of word segmentation. Extracting keywords from online hotel reviews and visualizing them with word frequency and topic-on-aspect figures to obtain rural hotel customers' preferences, so that hoteliers can make more improvements in marketing and service. Performing sentiment analysis on consumer emotions and visualizing data by sentiment score distribution graphs to reflect customer opinion.

DISCUSSION and CONCLUSION

The emergence of online reviews as a form of user-generated information and eWOM has provided valuable customer insights, reflecting the experiences of consumers concerning products and services. Recent years have seen a growing interest in exploring customer preferences and semantics, especially considering the current epidemic era (Luo & Xu, 2021; Nilashi et al., 2021). In this study, we employed the polarity classification sentiment analysis methodology, encompassing aspect-term clustering, sentiment element extraction, and sentiment value calculation, to extract specific rural hotel attribute preferences from online review comments.

Our findings demonstrate that consumers of rural hotels exhibit a positive bias in their comments, with attitudes differentiated by tourist type, geographical distribution, and travel groups. Leisure and travel tourists, for instance, tend to evaluate their experiences more positively (Bian et al., 2022). Customers evaluate their consumption experience more positively when they are in a positive emotional state (Mano & Oliver, 1993). Notably, the surrounding atmosphere and scenery of rural hotels play a crucial role in affecting consumers' emotions, with "scenery" being a frequently mentioned term in comments on facilities.

Previous empirical studies have shown that hygiene and environmental factors are the aspects with the greatest weight during the COVID-19 pandemic. However, our descriptive analysis of ABSA indicates that rural hotel consumers exhibit a significant preference for food. This could be attributed to the natural geographical isolation and good air mobility in rural tourism areas, which are not conducive to the spread of diseases.

Another significant finding is the critical role played by the boss (hotel owner or host) in the value perceived by rural hotel consumers. Similar to the findings of Serrano et al. (2021), Airbnb hosts are considered more important than other staff, being the centre of the accommodations' social relationships. The host is the figure who manages the property professionally. With the help of local

hosts, guests could gain some privileges, such as experiencing authentic ethnic minority lives, visiting special-interest attractions (Schuckert et al., 2018), and buying tickets conveniently. The preferences and attitudes of rural tourists are largely formed based on the experience co-created by the host-guest relationship.

The results of this study have several useful managerial implications for operations managers and researchers in the hospitality industry. Firstly, the study provides an in-depth analysis of the psychological and emotional aspects of rural tourist behaviour and factors that determine customer purchase behaviour patterns. This information can inform the rural hotel industry on how to improve its service offerings, thereby improving overall satisfaction and customer word-of-mouth evaluation, enhancing business efficiency, and ultimately achieving sustainable marketing and development. Secondly, in response to the preferences identified in this study, digital lodging platforms, represented by Ctrip.com, can optimize automatic home recommendations for potential rural hotel consumers or add more personalized recommendation tags based on the preferences found in this study. Combining the information contained in these users' online reviews and ratings with the search categories can provide faster, more precise, and more reliable decisions for future users and enhance the experience of online registered users.

Furthermore, the study reaffirms the importance of customer preferences and attitudes, highlighting the significant role played by the host in influencing the customers' experience. For rural hotel guests on Ctrip.com, the most critical factors affecting their experience satisfaction and preferences are the warm service of the boss, the cleanliness of the room and the balcony, the hotel landscape and location, and the hotel breakfast and special catering. Therefore, the hosts of rural hotels should describe the house and package the image of managers according to the preferences of customers on different platforms to attract these guests.

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Reviewing abortion resistance and legislation policies in Thailand and their impact and skewness to UN initiatives

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ABSTRACT

This review paper looks at key abortion polices in this Buddhist nation and the chronological sequence of reforms on abortion laws in Thailand in conjugation with UN initiatives from the last decade. Going by the UNFPA Thailand data, 56,074 pregnancies in girls aged 15-19 were recorded in 2020. This report also stated that 1,783 pregnancies in girls aged 10-14 were recorded, most of whom were victims of sexual assault. Though teen pregnancies have dropped, yet there is an urgent need to improve aware of reproductive health as well sex education. The paper explores various factors peculiar to Thailand such as religious, social and cultural that have offered strong resistance to a smooth transition in adapting the consensus resolutions that emerge from various UN committees including special procedures Treaty Monitoring Bodies, this paper discusses and offers potential solutions towards the obstacles in Thailand in protecting certain basic rights for Thai women within the broad religious guidelines. Lastly this paper debates the impact of pro-abortion interpretations of international treaties, Dobbs decision, that the US Supreme Court overturned constitutionally protected rights and how these would impact in regulating abortion in the coming years. Besides this the paper highlights the gap from SDG's, and how legislation plays a crucial role in the achievement of these goals by providing a framework for action and ensuring that the necessary measures are taken at the national level. This paper draws its evidence from published interviews of well-known social thinkers focus group discussions, observation, and literature review of related published papers extracted from google scholar. The findings of this paper validate the long-standing view point that the aging society stands confused over providence law of crime and punishment or karma while on the other hand women's organisations, public health advocates, academics and journalists hold a divergent view that Thai women's rights discriminated upon. The paper also proposes a three-pronged approach to resolving some of these conflicts without creating a vertical divide.

KEYWORDS: Abortion, Teen pregnancies, Thai reform, UN initiatives

INTRODUCTION

Societies have performed abortions for centuries, and the moral views, customs, and beliefs of the individuals involved have shaped abortion practices within each society. Also, it bears thinking terminating an unwanted pregnancy, especially the olden days, was a normal fact of life as reported by historians. Looking back into the history of the world, from the Egyptian papyrus, Greek plays, Roman coins, the medieval biographies of saints, medical and midwifery manuals, and Victorian newspaper and pamphlets all depicted that abortions were quite a common phenomenon.[3]

An ancient Egyptian papyrus from 3,500 years ago has the earliest known written mentions of abortion. About 1550 BC, a medical text known as the Ebers Papyrus proposed that a "plant-fibre tampon coated with a compound that included honey and crushed dates" could be used to induce abortion. Although it's unclear how frequently they were employed, references to abortion and plants that cause abortion were frequent in medical and other writings in ancient Greece and Rome., Fissell said.[4] [(website1)] However, abortion today in most countries from west or east, is a political, legal and moral pandora's box. Due to the high rate of abortion performed globally today, there is a lot of discussion

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[3] Kathy Hunt, Abortion is ancient history: Long before Roe, women terminated pregnancies, CNN Health, Published 7:29 AM EDT, Fri June 23, 2023

[4] https://edition.cnn.com/2023/06/23/health/abortion-is-ancient-history-and-that-matters-today-scn/index.html

about whether or not abortion should always be viewed as morally repugnant or if it can ever be justified. "It is a procedure to end a pregnancy," is how doctors define abortion. There are two methods for doing it: Medication abortion refers to the use of drugs to terminate a pregnancy. It's also referred to as a "pill abortion" or a "medical abortion." The process of removing the pregnancy from the uterus is called a procedural abortion. It is referred to as a "surgical abortion" at times. In 1969, 75% of the women who died from abortions (most of them illegal) were women of colour.5 Fast forward to present times around 73 million induced abortions take place worldwide each year. Six out of 10 (61%) of all unintended pregnancies, and 3 out of 10 (29%) of all pregnancies, end in induced abortion. Maternal deaths resulting from unsafe abortions range from 4.7 to 13.2% annually (3). For every 100,000 unsafe abortions performed in developed areas, 30 women are thought to lose their lives. That figure jumps to 220 deaths per 100,000 unsafe abortions in developing nations.[6] (Website2)   In an earlier study it found that despite decades of advocacy among Thai governmental and non-governmental actors to remove abortion from the country's 1957 Criminal Code, this medically essential and sometimes lifesaving door remains legally restricted for Thai women. Arnott G, et al (2017) Many women in Thailand found ways to get abortions under the previous restrictions, but the country still has a high teenage pregnancy rate. According to government data analysed by the UN Population Fund, approximately 1.5 million babies were born to teenage moms in Thailand between 2000 and 2014, and nearly 14% of all pregnancies in 2016 were among adolescents. According to the Guttmacher Institute, a research firm that tracks abortion policy and supports reproductive rights during the period 2015-2019, there were more than 1.3 million pregnancies in Thailand annually, of which 679,000 were unintended and 437,000 ended in abortion, now a huge problem cropped up that has affected the protection and right of a woman to her self-determination globally. Progressive changes are anticipated to improve women's access to safe abortions, improve their health outcomes (such as fewer deaths and disabilities associated with unsafe abortions), and eventually lessen stigma.[7] However interest of women in Thai politics is limited and that that women have small space within the political sphere. Tamrongterakul Sirirat (2021). Another recent study of low- and middle-income countries comes to the conclusion that criminalizing a woman's decision not to carry her pregnancy is a major factor in unsafe procedures. In countries where abortion is legal, however, the policies are still limited by the practice or by a lack of coherence. Vithiya Sathivelu, Allotey Pascale, and Ravindran T.K. Sundari (2021). The US Supreme Court held in Roe v. Wade (1973) that a woman's right to an abortion before the fetus is viable is protected by the Constitution. But with the recent ruling in Dobbs v. Jackson Women's Health Organization by the US Supreme Court, a nearly fifty-year-old legal precedent that had safeguarded women's choice to have an abortion was overturned.[8](website3) However on the other side due to the influence of human rights standards, in many countries their high courts are upholding these standards to hold governments accountable for the reform and repeal of criminal abortion laws. Erdman Joanna N., Cook Rebecca J. (2020)

THAILAND-RELIGION AND CONSTITUTION

There is a much wider group of Tai-speaking peoples from which the Thai are descended. The latter can be found from southern China in the north to the central Malay Peninsula in the south, as well as from extreme north-eastern India in the west to northern Vietnam in the east. The Tai people brought cultural traits shaped by their interactions with the Chinese to the region that is now part of Thailand. They were impacted by the Khmer and Mon peoples in their new homeland, whose customs were mostly derived from India. Thai culture was formed by combining the statecraft of the Indianized Khmer people

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[5] Ganatra B, Gerdts C, Rossier C, Johnson Jr B R, Tuncalp Ö, Assifi A et al. Global, regional, and subregional classification of abortions by safety, 2010–14: estimates from a Bayesian hierarchical model. The Lancet. 2017 Sep.

[6] https://www.ohchr.org/en/statements/2022/07/access-safe-and-legal-abortion-urgent-call-united-states-adhere-womens-rights

[7] Keogh LA, Newton D, Bayly C, McNamee K, Hardiman A, Webster A, et al. Intended and unintended consequences of abortion law reform: perspectives of abortion experts in Victoria, Australia. J Fam Plann Reprod Health Care. 2017;43(1):18–24. https://doi.org/10.1136/jfprhc-2016-101541.

[8] https://www.brennancenter.org/our-work/research-reports/roe-v-wade-and-supreme-court-abortion-cases

with the Buddhism of the Mon and the Tai ancestors.[9](website4). Coming to the current ethnicity in Thailand according to 2022 report is as depicted in below.

Table 1: Ethnicity

Religion	%
Buddhist	92.50
Muslim	5.40
Christian	1.20
Other groups	0.90
Total	**100**

Other groups, including above animists, Christians, Confucians, Hindus, Jews, Sikhs, and Taoists, constitute the remainder of the population. Theravada Buddhism is the main religion, however it isn't an exclusive belief system, since many Thai Buddhists also practice Brahmin-Hindu and animist practices. Before talking about the Thai constitution at the offset let's keep in mind that nations must align their national laws and policies with the principles and objectives of the SDGs. This involves reviewing existing legislation and, if necessary, even enacting new laws to support the achievement of the goals.

Thailand unfortunately has had to change or bring a new constitution several times. Since 1932 until 2017, it has seen twenty Constitutions and then it had one in 2022 for revisions. This unfortunately indicates a great deal of political instability. The 1997 constitution of Thailand, often called the "people's constitution" in terms of the degree of public participation involved in its drafting as well as the democratic nature of its articles. However, in terms of formal recognition Thailand is a constitutional monarchy. Sec 2 of its constitution states "Thailand adopts a democratic regime of government with the King as Head of State. Section 9 states that The King is a Buddhist and upholder of religions. The Constitution's Section 70 declares that "Everyone is under a duty to uphold the nation, religions, the King, and the democratic regime of government with the King as Head of State.".[10](website5) This same constitution of 2017 BE 2550 had yet another very important portion. Achieving the common goal of the Thai people to maintain independence and national security, respecting the King as Head of State and serving as a national inspiration, upholding the democratic regime of government with the King as Head of State as a guiding principle for the administration of the State, protecting people's rights and liberties, allowing for the people's substantive roles and participation in the administration and scrutiny over the exercise of State powers, and prescribing political mechanisms, whether the legislature or the executive, in order to secure balances, are among the important principles embedded in this newly prepared draft Constitution. Currently there exists no state religion, and religious freedom is respected in the majority of the country.

Thai Constitution allows exercising one's right to religion without "harm the security of the State," however it "prohibits discrimination based on religious belief" and safeguards religious liberty. Under its Constitution law five religious groups are recognized as official entities: Buddhists, Muslims, Brahmin-Hindus, Sikhs, and Christians are the first five groups. For Muslim residents of the "Deep South," which is defined as the four southernmost provinces close to the Malaysian border, three of which have a majority of Muslims, Thai Justice Ministry permits the practice of sharia as a special legal procedure outside of the national civil code for family law, including inheritance. Then in 2017, yet another new constitution was introduced. The 2017 constitution of Thailand reflected a major shift in the government's attitude toward religion. The state's main goals in the previous constitutions, adopted in 1997 for 2017 were to: a) safeguard and advance Buddhism and other religions; b) foster religious harmony; and c) encourage the application of religious teaching to improve quality of life. The 2017 constitution retains support for Buddhism and other religions, but a new mandate has taken the place of the previous two goals.[11](website6) The Constitution mandates that the government only support the Theravada school of Buddhism and that it defend Buddhism from all forms of desecration in order to preserve it. One could consider the 2017 mandate to be a compromise. It may also bring Thailand one

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[9] https://www.britannica.com/topic/history-of-Thailand
[10] http://www.asianlii.org/th/legis/const/1997/1.html
[11] https://cdc.parliament.go.th/draftconstitution2/download/article/article_20180829093502.pdf

step closer to religious strife as it brings Buddhism closer to becoming the country's official religion. Let's now examine abortion rights and beliefs in more detail using the national constitution.

ABORTION AND BUDDHISM:

Siddhartha Gautama, the founder of Buddhism, was born in the sixth century B.C.E., found the Middle Way, and became enlightened. The Buddha, the Dharma (teachings), and the Sangha (monks) are the Three Gems that he established. The concept of moral behaviour in life is very broad. However, within Buddhism this has been sought to be codified throughout the arrival and development of teachings of Lord Buddha. These are today commonly referred to as the first of the Five Precepts. These are the five pillars that enlighten us about ethical codes of conduct for a Buddhist way of life, and paramount focus on the idea of non-injury. The majority of moral behaviour in the other great traditions shares characteristics with these five precepts.[12(website7,8)] Throughout Buddhism's history, some elements—most notably the precept to abstain from taking life—have received constant attention. One key distinction is that all sentient beings share in the cycle of rebirths and the experience of various forms of suffering, so the object of this precept is not limited to humans.

The 5 precepts with examples can be explained as below

Table 2 The Five Precepts

Precept	An example
1. Refrain from taking life	Not killing any living being. For Buddhists, this includes animals, so many Buddhists choose to be vegetarian.
2. Refrain from taking what is not given	Not stealing from anyone.
3. Refrain from the misuse of the senses	Not having too much sensual pleasure. For example, not looking at people in a lustful way or committing adultery.
4. Refrain from wrong speech	Not lying or gossiping about other people.
5. Refrain from intoxicants that cloud the mind	Not drinking alcohol or taking drugs, as these do not help you to think clearly.

Now when we relate this to abortion and legalizing abortion the most important precept that comes in between is the 1st precept- "to abstain from taking life".

"Taking life" in the context of the five precepts refers to eliminating anything that has life. It alludes to hitting and murdering living things. The will to kill anything that one believes to be alive, or to take action to extinguish its life force, is known as taking life, provided that the will manifests itself in a physical or verbal manner. The foetus is considered to be human from the moment of conception, so an abortion will inevitably be an act of killing a human being. It significant to corelate that the Ten Commandments, which were inscribed on stone by God and later transcribed by Moses into the Hebrew Scriptures, listed under 6 has the following commandment. "You shall not murder".[13] In this nation, where the majority of people practice Buddhism, abortion was illegal unless there were very specific circumstances, like when the mother's health was in jeopardy or the pregnancy resulted from sexual offenses like rape or incest. The issue that needs to be addressed in this nation has always been the stigma associated with abortion on a local and national level versus more general public policy that supports abortion as a fundamental constitutional right and an opposing viewpoint that denies abortion as immoral because of its grave effects on women's health and dignity.[14]. In a recent paper Abortion, Buddhism, and the Middle Way, authors conclude that the "middle way" is one that can be found

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[12] https://www.bbc.co.uk/bitesize/guides/zmd9dxs/revision/6
[13] https://www.bbc.co.uk/bitesize/guides/zf8g4qt/revision/9
[14] Sorhaindo et al,2016, Cutler et al,2021

through compassion. Kalvelage, Anna Grace (2023). In another paper the authors argue that in order to live relatively peacefully in a particular concrete social setting, perhaps abortion needs to be allowed under Buddhism. Hongladarom, S. (2021). Another study compares different forms of Buddhism especially that in Japan. The paper finds that this humanistic conceptualization of abortion is manifested by the modern Buddhist practice of mizuko kuyō. Brown, H.J.(2019). Very few papers however were found that supported an alternative moral analysis. This group proposes that denial of abortion is equally immoral just as abortion is rigidly opposed in Buddhism. (Miles, 1991, Evans 1997, Bloch 2007).

In another study the authors conclude that abortion is still politically sensitive issue, sensationalized in the Thai press to counter reform efforts yet those who seek abortion for socio economic reasons will continue to do so. Andrea Whittaker (2002)

UN INITIATIVES AND CONFLICTS

The World Health Organization (WHO) recommends removing legislative, policy, and programmatic obstacles that impede timely and accessible provision of safe abortion care in its Safe Abortion: Technical and Policy Guidance for Health Systems document. However, The Geneva Consensus Declaration, introduced by the Trump-Pence administration in 2020 and signed by thirty-two countries, claims that there is no international right to abortion. Although the Declaration was subsequently revoked by the government headed by Joe Biden administration.[15] The right "to make decisions concerning reproduction free of discrimination, coercion and violence, as expressed in human rights documents," is another aspect of reproductive rights, according to the ICPD. The Women's Convention can also be used to support this aspect of reproductive rights. The first country amending its abortion law was in October 1920 by the former Soviet Union, through a decree on women's health care. Several of United Nations human agencies—including the Human Rights Committee, the Committee on the Elimination of Discrimination against Women, the Committee on Economic, Social and Political Rights, making persistent calls for progressive abortion law reform have become more visible, thanks to the efforts of the Working Group on Discrimination Against Women in Law and Practice and the Special Rapporteurs on the Rights of Women in Africa, the Right to the Highest Achievable Standard of Health, and Torture.[16,(website9)] Towards the end of the twentieth century, abortion was legally permitted to save the life of the woman in about 98% of the world's countries.[17,(website10)] The only nearly universal treaty that fully safeguards women's human rights, including their rights to sexual and reproductive health, is the CEDAW Convention, which has 189 State parties. Article 12 of the CEDAW Convention guarantees women and girls the right to bodily autonomy, which includes the freedom of sexual orientation and reproduction. Furthermore, women's rights to choose the number and spacing of their children freely and responsibly are safeguarded by article 16(e), as is their access to the knowledge, resources, and training needed to carry out this decision. The United States of America is one of seven States worldwide that have not yet become party to the Convention.[18,(website11)]

UN INITIATIVES[19,(website12)]

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[15] Anti-abortion strategizing and the afterlife of the Geneva Consensus Declaration, Lynn Morgan
First published: 06 October 2022 https://doi.org/10.1111/dewb.12374
[16] International Campaign for Women's Right to Safe Abortion, Feature: African Commission on Human and Peoples' Rights calls for decriminalisation of abortion in Africa (January 22, 2016). Available at http://conta. cc/1OKSHmy.
[17] United Nations Population Division (2002),
[18] https://www.ohchr.org/en/statements/2022/07/access-safe-and-legal-abortion-urgent-call-united-states-adhere-womens-rights
[19] Source: https://news.un.org/en/story/2022/03/1113612

Table 3: UN Initiatives

New guidelines	Recommendations	Telemedicine	Removing barrier	Access to pills
In an effort to provide life-saving care, the WHO has released new abortion guidelines. These guidelines are intended to stop the over 25 million unsafe terminations that occur annually.	Over fifty recommendations covering clinical practice, health service delivery, and legislative and policy interventions have been released by WHO to promote high-quality abortion care.	The guidelines now include, for the first time, best practices for telemedicine, which during the COVID-19 pandemic supported access to family planning and abortion services in many countries.	The guidelines suggest getting rid of medically unnecessary legislative restrictions on safe abortion, such as making abortions illegal, requiring waiting periods, requiring consent from other family members or institutions, and placing restrictions on when an abortion can be performed during a pregnancy.	More women will be able to access safe abortion services since the guidelines guarantee access to medical abortion pills.

ABORTION LAW PROGRSSION IN THAILAND

While the use of contraceptives is widespread in Thailand, the number of unintended pregnancies among young adults and women is still high. Many studies carried out in the Kingdom of Thailand have revealed the practices of numerous untrained, non-professional abortion providers and have clearly documented health hazards, consequences, morbidity, and mortality. Chaturachinda Kamheang, Boonthai Nongluk, (2017)

Abortion laws in Thailand were rigidly controlled until 2021, allowing little for the helpless pregnant women or more serious, the teens who had conceived due to unplanned pregnancy. Before February 2021, abortions were illegal if performed, with many exceptions granted for situations where the mother's physical or mental health was in danger, the woman was under 15 or became pregnant as a result of rape or incest, or the fetus had severe defects or abnormalities. The opposition to abortion comes mainly from Thailand's majority of conservative Theravada Buddhists who believe that abortion goes against the teachings of Buddhism. Brown, H.J., (2019). In 2020, lawmakers in the Senate voted 166 to 7 to amend a law that had imposed prison terms of up to three years for anyone having an abortion, and up to five years for those who perform one. The new version allows any woman to end a pregnancy in the first 12 weeks. This rule still had 2 major issues. a) The problem was that anyone in Thailand who has an abortion after 12 weeks, except under conditions set by the country's Medical Council, still faces potential fines and up to six months in prison. b) There were only two hospitals in the whole country which provide abortion after 12 weeks so if you are not staying in Bangkok how would you manage this without support and cash? However finally due to external pressure from global bodies such as WHO, other associated UN bodies and rights groups as well as the Thai citizens themselves. The Criminal Code's abortion prohibition laws were overturned by Thailand's Constitutional Court in February 2020, after it was determined that they infringed upon women's equality as well as their right to life and liberty.[20(website13)] The new rules, which were released in the Royal Gazette, became operative on October 26 and loosened the provisions of a law that had been in effect since February of last year and permitted the termination of pregnancies during the first 12 weeks. According to recently released guidelines by the Public Health Ministry, abortions will now be

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[20] https://www.loc.gov/item/global-legal-monitor/2021-03-01/thailand-abortion-in-first-trimester-legalized/

permitted in Thailand until the twentieth week of pregnancy. Women who want to get an abortion between weeks 12 and 20 must first speak with and get permission from a licensed medical professional, according to the new rules. Women can arrange on their own to have the procedure performed at a medical facility up until the 12th week. The fetus needs to be carried to term after the twentieth week. In fact, the new regulations call for the consultations in the second trimester to be based on openness and kindness in dealing with pregnancy issues, to be non-judgmental of women's behavior and decisions, and to allow decisions on whether or not to have abortions to be made "without bias, force, and with respect for privacy," which serves to highlight Thailand's progress towards women's equality. Traisulee Traisoranakul, the deputy government spokesperson, emphasized this point.[21. (website14)]

DISCUSSION

Access to safe, legal abortion is a matter of human rights. According to authoritative interpretations of international human rights law, depriving pregnant women, girls, and other individuals of their right to an abortion constitutes discrimination and endangers a number of human rights. Legislators and the majority should not decide whether or not to allow abortions. Abortion is not a matter to be decided by lawmakers or by majority rule. Most human rights bodies already have put in clear words that all countries need to decriminalize abortion. To allow every woman access to these services in accordance with human rights standards are an integral part of all State's obligations. Secondly to remove every form of discrimination against women and to guarantee through their respective Constitutions the right to health as well as other fundamental human rights for women. During research the author finds that abortion rights are not uniform across regions or countries as the table indicates.

Table 4: Regional Abortion policies

Group1	Group2	Group3	Group4
Only a few nations have outright prohibited abortion. (24 states)	Most nations in the world have laws that permit abortion in specific circumstances.	Other states have strict restrictions on abortion, but there are usually exceptions for situations where the procedure is necessary to save a woman's life, such as rape, incest, or fetal impairment. (50 countries)	Countries that permit the procedure unrestrictedly or with limitations that consider the woman's physical and mental health as well as financial or social factors related to her circumstances as a pregnant woman (Japan until India to Canada, as well as most of Europe)

From the table above the progression of Thailand has been from Group 1 to Group 3 is apparent. Furthermore, it's is discriminatory for a state party to refuse to legally provide for the performance of certain reproductive health services for women," according to the Committee on the Elimination of Discrimination Against Women. It concerns advancements in science as well as religious and conscience freedom. It is discriminatory for a state party to refuse to legally provide for the performance of certain reproductive health services for women," according to the Committee on the Elimination of Discrimination Against Women. It concerns advancements in science as well as religious and conscience freedom. The second less frequently debated topic is when certain states through their agencies impose any legal duty upon doctors / other health personnel to report cases of women who have undergone abortion. This directive fails to respect women's right to her privacy and sometimes puts her at grave risk with her own family or community. Another challenge dealing with about criminal abortion laws and encouraging States to review their legislation to ensure that pregnant woman or pregnant girls have safe and confidential access to proper government monitored legal abortions in cases when the pregnancy endangers the life or health of a woman. What happens if these rights are denied in some parts of the world? All civilized states have obligations to respect, protect, and fulfil

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[21] https://apnews.com/article/abortion-health-thailand-statutes-4de6fb7a91e9007be6418561f67be5ae

human rights, including those concerning sexual and reproductive health and autonomy. The denial of access to safe and legal abortion services may quickly undermine other internationally protected human rights, such as the freedom from torture, other cruel, inhuman, and degrading treatment; the right to privacy and bodily autonomy and integrity; the right to decide how many children to have and how often to have them; the right to liberty; the right to benefit from scientific advancements; and the freedom of conscience and religion. Another problem that legal restrictions on abortion often cause is they lead up to more illegal abortions, which may also be unsafe and may drive higher maternal mortality and morbidity. This was also the problem in Thailand. Thailand was ranked first for teenage pregnancy, which accounted for 17.2% of live births in 2009.[22] A grave miscalculation is that when abortion is banned or restricted, the number of abortions will fall. On the contrary people who need to have abortions just move to underground where clandestine operators are waiting. These are unsafe, unhygienic and use nonstandard equipment and tools. The need for abortion is also country specific. In Thailand as per health department studies in the past, the women seeking abortion were mostly due social and economic reasons. Profiling data showed that these were females with a high percentage in their 20s; and many were students.[23] (website15). From the chart we can say that despite the religious complexities, vested groups, and people looking to make political mileage, Thailand has in fact has moved forward on upholding women's rights over their own bodies although the pace has been quite slow. We can categorically say that though the medical profession in Thailand had made public their opinion on unsafe abortions way back in 2003,[24] yet the administrative machinery didn't have the political will over the stronger force of the Buddhist associations who derived their invisible yet potent powers from the national ideology- build around Nation, Religion and King—with "Religion" and "King" being fundamental elements of the traditional Thai Buddhist theory of kingship[25] to make the required adjustments for decriminalizing abortions. From religion to legislation and then to SDG's. Thailand adapted the SDG's way back in 2015. All counties need to realign their national laws with the SDG's by 2030. Currently rank of Thailand is 1st in ASEAN therefore it needs to do much more. Legislation that is just and fair can make it easier to incorporate the principles of sustainable development into other areas of policy, like economic development, environmental protection and most important social welfare including upholding womens rights.

CONCLUSION AND SUGGESTION
        The United Nations has been actively engaged in promoting women's rights globally, recognizing the importance of gender equality as a fundamental human right. One aspect of this commitment involves addressing reproductive rights, including access to safe and legal abortion services. The UN has supported initiatives aimed at ensuring that women have the autonomy to make decisions about their reproductive health, free from coercion and discrimination. Various UN agencies, such as the World Health Organization (WHO) and the United Nations Population Fund (UNFPA), work towards improving maternal health and advocating for comprehensive sexual and reproductive health services. While the UN does not explicitly endorse or oppose abortion, it emphasizes the importance of access to safe abortion services as part of comprehensive reproductive healthcare, especially in contexts where restrictive laws and unsafe practices pose risks to women's health and well-being. The organization continues to foster dialogue and collaboration among member states to advance women's rights and reproductive health on a global scale. Thailand's greatest asset is arguably also its greatest drawback. Culture and religion. Buddhism is unique among world religions in that it disavows the idea of a personal god. Rather, they concentrate on reaching enlightenment, a condition of wisdom and inner tranquility. In this way we can say Buddhism is a passive religion and its faith and doctrine are easy to follow. The problems that come can be put in 2 parts. a) criticism of praxis, such as that its

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[22] "Teenage Mothers": A Big Issue Being Prevented and solved in a Limited Way. Nakorn Pathom: Institute for Population and Social Research, 2010. [Access 5 February 2013]. Available from URL: http://www.hiso.or.th/hiso/picture/reportHealth/ThaiHealth2010/eng2010_20.pdf
[23] https://www.khaosodenglish.com/news/2017/03/03/abortion-thailand-safe-legal-may-thought/
[24] Boonthai N, Tangcharoensathien V, Pongkittilah M. Voices of Thai Physician on Abortion. 25th Internation-al Population Conference; France 2005.
[25] Eiji Murashima, "Building of the Official State Ideology in Thailand," International Relations 84 (1987): 118–35.

practitioners act in ways contrary to Buddhist principles or b) that those principles systemically marginalize women. It's the second part that under Buddhism that prevents women from ascending to common equality. In Thailand, women are not allowed to be ordained as monks or novices under the Buddhist order that has been in existence since 1928. The Kingdom does not recognize female monks or novices. One option for devout Thai women is to become white-clad Buddhist nuns, who follow a less-strict religious regimen than monks and are often demoted to to housekeeping tasks in temples or second option is for them to travel to Sri Lanka or India for full ordination[26(website16)] . Another strict rule that applies for women as they should maintain a comfortable distance between themselves and monks because monks are forbidden to come into contact with women. When we look at the culture in Thailand the Thai women's identity that has been created in a role the way men want. The result is an inequality in society which has led to the mobility of rights and living of Thai women. According to the 2020 UNDP Human Development Report, Thailand is ranked 80th in the Gender Inequality Index, 11 spots lower than it got in 2011.[27(website 17)] Few examples that we can quote being a) women should avoid wearing sleeveless or see-through blouses, b) Thailand's infamous sex industry, though it's not an accurate reflection of the sexual morals of the average Thai females yet even Thai males do not respect Thai women as much and when they get upset or angry, and the women are assaulted verbally or physically. Many highly educated, talented Thai women in managerial posts face sexual harassment and abuse on this journey. They also have little to no power in bringing the perpetrator to justice for the simple reason in the guise of a trusted supervisor and friend, who needless to say don't give two hoots about a woman's sexual consent. The incident of the rector of a well-known Thai university snapping pictures of flight attendants without consent and then posting on Facebook is another shocking incident of woman's derogatory position in the Kingdom[28.(website18)]. A cursory look at the popular media also shows only two extremes of Thai women. One who is modern, well educated, ruthless, emaciated or the other extreme showing women who are oppressed, or driven to prostitution or unable to fight back without help from the male gender.

From our findings this research paper proposes a three-pronged approach to the current state of women's inequality and discriminatory abortion laws persisting in Thailand.

Table 5: Three pronged strategy for Thailand

SDG Pathway	Noble Eightfold Path	Adapting Gender Transformative Polices
One clear pathway would be to integrate gender equality and environmental considerations in national policy framework. In adapting this empowering woman in environment-related sectors including equal access to quality education, health and other social services and ending legal barriers to gender equality and discrimination against women	Follows after 5 precepts. The Noble Eightfold Path consists of eight different aspects- right Intention, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration. Within these Thai society compassionately seek an answer of a women's inferior status. Later asking oneself why women desiring to become a bhikkhuni cannot achieve the same position as bhikkhus? These need longer timeline plus general consensus and reaching out towards Buddhist communities in other nations such as Sri Lanka, India, China, Japan.	These include propagating or supporting positive gender equality policies, targeting discriminatory legislations and norms that erode gender inequalities. Engagement of religious and traditional leaders to end harmful Practices.

[26]https://www.nbcnews.com/news/world/women-defy-thailand-s-gendered-buddhist-tradition-becoming-monks-n954596

[27] https://www.bangkokpost.com/opinion/opinion/2306898/women-arent-objects

[28]https://thethaiger.com/news/national/rector-of-top-university-caught-secretly-photographing-female-flight-attendants

CONFLICT OF INTEREST

The author/s declare no conflicts of interest

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Unpacking Chinese and Thai Cyber Nationalism in the Early 2020s: The Linkage of International Relations and Domestic Politics

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ABSTRACT

　　　　Many academic works have explored the developments in China-Thai relations, and their focus is mainly on Thailand's responses to China's economic, political, and security encroachment and influences in the region. However, little attention has been given to the role of nationalism in shaping the dynamism of China-Thai relations. With the growing influence of nationalist sentiments in cyberspace, cyber nationalism has become a critical factor in China and Thai relations. The early 2020s saw a surge of nationalist sentiments in both the offline and online worlds caused by the social and political changes and turbulences in Asia. This article seeks to address the gap in academic research and to provide an alternative perspective on China-Thailand relations by employing the "second image-reversed" approach, which aims to understand the influence of international factors on domestic political decision-making, to analyze the emerging cybernationalist phenomenon in and between China and Thailand. It argues that the rise of nationalism in cyberspace in China and Thailand during the early 2020s originated in the context of and proceeded in tandem with domestic, regional, and international developments. Furthermore, it suggests that these nationalist sentiments and cyber activities ultimately hindered the two countries' foreign policy objectives in promoting connectivity and good relations during the COVID-19 pandemic.

　　　　KEYWORDS: China, Thailand, China-Thailand Relations, Cyber Nationalism, COVID-19 Pandemic

INTRODUCTION

　　　　On 19 November 2022, China's President Xi Jinping visited Thailand. This is his first official visit to Thailand since he sat at the core of China's central leadership. During his visits, he held talks with Thai Prime Minister Prayuth at the Government House. President Xi repeatedly emphasized the rhetoric of the familial relationship between China and Thailand at the official meetings. For example, President Xi stressed that "China and Thailand enjoy a millennia-old friendship, and the people of the two countries feel like brothers and sisters to each other" (Ministry of Foreign Affairs of the People's Republic of China, 2022). The diplomatic discourse "China and Thailand are brothers" serves as the cornerstone for both countries' official cooperation in a wide range of areas. President Xi expressed China's external policy towards Thailand in this taking. He said: "China will work with Thailand to carry forward the special bond, to build a China-Thailand community with a shared future for enhanced stability, prosperity and sustainability, to add new dimensions to the family-like relationship, to open up a new era of China-Thailand relations, and to deliver more benefits to the two peoples." (Ministry of Foreign Affairs of the People's Republic of China, 2022) This warm-hearted expression described a considerably positive diplomatic relationship between these countries in the post-COVID era. China and Thailand's officials and interest groups have embraced the diplomatic discourses of the family-like relationship. However, the social media platforms of both countries presented a different picture. In the early 2020s, China and Thailand witnessed a rise of nationalist sentiments, particularly in their cyberspaces. In this surge of cyber nationalism, netizens from China and Thailand portrayed each other as the "other," challenging the official discourses of the bilateral relations.

　　　　Though many academic works have explored the developments in China-Thailand relations, focusing on Thailand's responses to China's economic, political, and security encroachment and influences in the ASEAN region, little attention has been given to the role of nationalism in shaping the dynamism of China-Thailand relations. With the growing influence of nationalist sentiments in

China and Thailand's cyberspaces, cyber nationalism has become a critical factor in China and Thailand relations. What are the domestic, regional, and international socio-political factors contributing to the rise of cyber nationalism in China and Thailand in the early 2020s? How has the emerging cybernationalist phenomenon in and between China and Thailand influenced China's foreign policies? This article addresses these two questions using the "second image-reversed" approach. This paper argues that the rise of nationalism in cyberspaces in China and Thailand during the early 2020s originated in the context of and proceeded in tandem with domestic, regional, and international developments. Furthermore, it suggests that these nationalist sentiments and cyber activities ultimately hindered the two countries' foreign policy objectives in promoting connectivity and good relations during the COVID-19 pandemic.

The contribution of this article is to address the research gap in the current academic research and to provide an alternative perspective on China-Thailand relations. The remainder of this article proceeds in four parts. Following this introduction, this article briefly reviews China-Thailand relations in economic, political, and security aspects. Part three describes the surge of nationalist sentiments in China and Thailand's cyberspace in the early 2020s. Next, part four examines the interplay between the cybernationalist phenomenon and its domestic, regional, and international development. Finally, the author concludes this article by discussing the intersection of comparative politics of China and Thailand and the China-Thailand international relations through the lens of cyber nationalism.

Literature review: China-Thailand relations in the physical domain

Given the growing engagement and the roles of China and Thailand within the complicated ASEAN region, China-Thailand relations have drawn academic attention since these two countries normalized official diplomatic ties in 1975. Scholars have yielded abundant research on China-Thailand relations in the offline domain. In recent years, discussions on China-Thailand relations have revolved around three main themes. The first pertains to the overall changes and development of China-Thailand relations. The second concerns economic ties between the two countries. Moreover, there is a focus on security considerations within China-Thailand relations.

The first body of academic discussions on China-Thailand relations reveals the general dynamics of China-Thailand relations and seeks the rationale behind the changes. Hewison (2017) mentions that Thailand's turbulent domestic political situation causes the dynamics of China-Thailand relations. Similarly, E. Han (2018) argues that Thailand's alignment choices are based on international structure, domestic politics, and state leaders' strategies. Cogan (2019) adopts the concept of accommodation for analyzing Thailand's foreign policies toward China and argues that Thailand's selective accommodation of China and its flexible foreign policy help Thailand increase its chances for negotiations and avoid security risks.

The second body of academic observations on China-Thailand relations illustrates the economic ties. Recent scholarly works focus on China's Belt and Road Initiative (BRI) and its economic impacts on Thailand. Punyaratabandhu and Swaspitchayaskun (2020) view China's BRI as an expansive strategy and recognize that although BRI offers opportunities for Thailand to develop infrastructure, currency policy, tourism, and education, it also brings some challenges to Thailand in creating economic risks and implementing procedures and management.

Some scholars have investigated BRI in Thailand from the angle of China-Thailand rail projects. Dai (2021) argues that the transport and energy sectors drive China's infrastructure investment in Thailand. Thailand also embraced China's investment. Meanwhile, the cooperation between both sides faces challenges from Thailand's political issues and uncertain policies. Shang-Su and Chong (2018) rely on the concept of developmental railpolitics to point out that China-Thailand rail projects support China in expanding its influence in Thailand by fulfilling the host country's development goals. Thailand's participation in high-speed rail projects has both political and economic motivations. Thailand's goals on high-speed rails are to help the junta gain legitimacy through economic development and support Bangkok to become an Indochina hub of land traffic. Similarly, Lauridsen (2019a, 2019b) adopts the concept of economic diplomacy to argue that economic motivations are the primary rationale for China and Thailand's participation in international rail projects.

The third body of academic research on China-Thailand relations explains the rationale for Thailand's external security policy towards China in the context of the rising South China Sea conflict. Buszynski (1994) argues that the termination of the Cambodian conflict marked the absence of

Thailand's external security threats. However, the crisis showcased two essential characteristics of the country's foreign policy in the security aspect. The first is the dominance of the military, while the second is the importance of attachment to its external allies, especially China and the US. In the same vein, Rolls (1994) contends that Thailand's decisions on security in the post-Cold War era reflect the dominant power of the military in the Thai political system.

Furthermore, the "balance of power" concept significantly impacts Thailand's security policy with its neighboring countries and external powers. Punyaratabandhu and Swaspitchayaskun (2018) observe that Thailand avoids being involved in the South China Sea disputes to balance the power relationship between the ASEAN member states and China. Meanwhile, it seeks to keep its relationship with external powers, such as the US and Japan.

The above discussions on China-Thailand relations have illustrated various domestic and international factors contributing to Thailand's foreign policy towards China. However, to the author's knowledge, the current studies on China-Thailand relations neglect the recent cyber nationalism phenomenon in China-Thailand relations.

The cyber nationalism that emerged in China and Thailand in the early 2020s can be understood as an intersection of comparative politics and international relations in area studies focusing on China-Thailand relations. To study this phenomenon, this article relies on Gourevitch's (1978) idea of the "second image-reversed" approach, which seeks to understand the influence of international factors on domestic outcomes. Weiss (2015) contends that the "second image-reversed" approach helps analyze the relationship between domestic politics and international relations in non-democratic countries like China, where the decision-making mechanism lacks transparency. Therefore, the "second image-reversed" approach provides a valuable tool for this study.

The surge of cyber nationalism in China and Thailand in the early 2020s: The formation of the Milktea alliance

The COVID-19 pandemic has changed the social landscape. In response to COVID-19, several countries, including China and Thailand, instituted a range of lockdown and quarantine measures. These efforts significantly limited face-to-face interactions and promoted the use of social media platforms for communication, information dissemination, and entertainment purposes (Yue et al., 2023). In other words, cyberspace became the most active domain for both Chinese and Thais to engage in society during the era of lockdown and quarantine. During this period, the rise of the Milktea Alliance (MTA), a pan-Asian pro-democracy digital network, witnessed a surge of cybernationalist sentiments in and between the two countries.

The formation of the MTA originated from a cyber incident between Chinese and Thai netizens. On April 18, 2020, a crowd of netizens from mainland China bypassed the Great Firewall, one of China's restrictions for controlling netizens to access banned websites or social media platforms, to blame Thai star Bright, who stars in Thai series *2gether: The Series*, and his girlfriend, known as New, for "insulting China" on Twitter, as Chinese online nationalists interpreted their posts violating "One China Principle" as well as suggesting the COVID-19 virus is a manufacture of China's laboratory. Their actions triggered Thai netizens to fight back. Thus, an incident between Chinese and Thai netizens occurred. Soon, online activists from Hong Kong, Taiwan, and Myanmar, where political progress faces the influence of authoritarianism, aligned with Thai netizens in this incident. Then, they jointly established a pro-democracy online community.

In this incident, Thai netizens criticized the establishments' ill performance in the pandemic governance. Moreover, they ask for reform in the Thai political system to achieve the international standard of democratization. This incident marks the first time Chinese netizens targeted Thai people for their nationalist mobilization in cyberspace. The significant incident attracted the notice of the governments of both countries. Chinese Embassy in Bangkok posted an announcement on Facebook, emphasizing the principle of "One China" and the history of the family-like relations between the two countries. Furthermore, the post also pointed out that some individuals incited this incident to hurt the relationships between the two countries. Facing Chinese netizens' nationalist sentiments, the Weibo account of the Tourism Authority of Thailand stated that "The statements of individual artists cannot represent the official stance of the country. Please, netizens, maintain rationality." After the governments' mediation, this conflict gradually calmed down. However, the MTA has become a symbol of cyber anti-authoritarianist activism in Asia.

Soon after Bright posted a video to apologize for the incident on China's Sina Weibo, the related hashtags indicating Bright's behavior of insulting China were removed. In contrast, the official account of the Twitter company posted an announcement to memorize the anniversary of the incident by releasing a particular emoji, which implies the MTA. The aftermath of this incident reflects China's cyber governance in information regulation, indicating China's effort to stifle this wave of domestic nationalist sentiment in cyberspace.

Understanding Cyber nationalism in the early 2020s: from Domestic and international perspectives

The rise of nationalism in cyberspaces in China and Thailand, shown in the case of MTA, has its roots in the domestic, regional, and international contexts. In recent years, China's government has grasped the opportunities digital platforms offer to consolidate its legitimacy through ideological thought work, increasing regime presence, and mechanism of authoritarian persuasion (Fang & Repnikova, 2018; R. Han, 2018; Liang et al., 2021). These approaches help the government to instill official ideologies in China's cyberspace. The mainstream ideas embraced by Chinese online nationalists motivate them to engage in online nationalist mobilizations. The most frequent targets of Chinese online nationalists are Hong Kong and Taiwan, where the "One China Principle" is concerned. Hong Kong witnessed two large-scale movements in the previous decade: The Umbrella Movement and the Anti-Extradition Law Amendment Bill (anti-ELAB) Movement. These two movements result from Hong Kong democrats' frustration about the absence of democracy in the city's future, caused by the increasing influence of Beijing's authoritarianism. Chinese netizens paid considerable attention to these two movements. They not only engaged in official online campaigns but also spontaneously launched online expeditions, reiterating the "One China Principle" and blaming Hong Kong pro-democracy activists' atrocities (Yang, 2019). Taiwan also had a similar experience. Tsai Ing-wen's inauguration as Taiwan's president triggered a wave of cybernationalist sentiment in China's cyberspace, which was swiftly transferred into a "cyber expedition." Numerous internet users from China's social media platforms targeted Tsai's Facebook page and the official websites of Taiwanese-run news agencies. Chinese online nationalist mobilizations towards Hong Kong and Taiwan indeed represented the effect of cyberbalkanization, which means "like-minded people interact with each other and are rarely exposed to opposite views. In such a scenario, attitudes will likely be reinforced and become more extreme and polarized" (Chan & Fu, 2017, cited in Lee, 2018, p. 222). Therefore, Chinese cybernationalist mobilizations targeted Hong Kong and Taiwan deepened the divergence between Beijing's mainstream ideas and the localism of Hong Kong and Taiwan.

The 2014 coup in Thailand frustrated many pro-democratic Thais, as the junta imposed several political restrictions. Furthermore, the COVID-19 pandemic worsened the situation of social inequality in Thailand, signified by "inequitable access to the gains of economic growth, modernity, and expanded opportunities" (na Thalang, 2022, p. 252). In the early 2020s, the Future Forward Party (FFP) dissolution and the disappearance of Wanchalerm sparked mass protests in Thailand. The country's technological savvy effectively employed social media platforms to boost social mobilization, avoid repression, and influence public opinion (Sombatpoonsiri, 2021), and form an opposite force of loyalists and pro-regime activists. Among the Thai pro-democracy Twitter activism, the Free Youth Movement (FYM) is the most prominent as it not only connected with its allies in Thailand, such as the Free People Group (FPG) and the United Front of Thammasat and Demonstration (UFTD) but also worked with its allies to facilitated several anti-government offline protests in Thailand between July and December of 2020 (Sinpeng, 2021). Thai internet users shared their dissatisfaction and the reasons behind their online activism using the hashtag *#FreeYouth*, which Sinpeng labels as hashtag activism in Thailand. They also shared information on offline protests and showed their disapproval of the government (Sinpeng, 2021).

Thailand's pro-democracy online activism allows the younger generation across Asia to express their grievances regarding their countries' political situations because of hashtag activism's flat communicative structure. After establishing this pan-Asian pro-democracy digital network, Thai pro-democracy activists tagged *#MilkteaAlliance* along with *#FreeYouth* to reinforce the mobilization synergy in domestic and international cyberspace.

The case of MTA and other cybernationalist mobilizations in Asia indicates the different patterns of nationalism in cyberspace. China's cyber nationalism presents a rigid alignment with the mainstream ideologies, while cyber nationalism in Thailand, Hong Kong, and Taiwan shows the critics

of the current political issues in their regions. The development of China-Thailand relations since the normalization of official diplomacy inevitably exposes Thailand to China's influence. In recent years, China's factors have significantly presented in Thai society. Han (2022) conceptualizes this phenomenon as "re-Sinicization" in Thailand. The impacts of China's political ideology, manifested by surging nationalism, remain uncertain for the Thai public. This uncertainty deepened the long-lasting cleavage of Thai political progress. Furthermore, as mentioned earlier, the global COVID-19 pandemic worsened the political performance of the Thai junta. The increasing geopolitical anxiety over the pandemic, domestic authoritarian rules, and the international development problems in and between the two countries thus contributed to the contention between Chinese online nationalists and Thai pro-democracy activists, along with their fellow from other Asian regions.

Dealing with nationalist sentiments is a dilemma for governments. As Weiss (2015) argues, on the one hand, tolerance of nationalist sentiments can be beneficial when governments seek "to signal resolved and to demonstrate its commitment to defending" national interests, such as sovereignty. On the other hand, outraged nationalist sentiments can cause an unstable situation for governments in both domestic and diplomatic stances (p. 4). Thus, to obtain a favorable diplomatic situation with flexibility and cooperation, the government may suppress domestic nationalist sentiments (Weiss, 2015). Aligning with this logic here, this article argues that the motivation to maintain and promote connectivity and a good relationship significantly impacted their effort to calm down the cyber nationalism phenomenon in the early 2020s, reflecting that they value the relationships between the two countries. China has been utilizing nationalism to reinforce its legitimacy. This is not an exception during the COVID-19 pandemic. For example, CCTV and China Telecom live-streamed the construction process of two emergency hospitals in Wuhan, which aimed to accommodate the sudden increase in patients. The live streaming received positive reactions from the public. The viewers commented joyfully and formed fan groups to support the efforts of the construction (Liu, 2020). This example indicates that, through the mobilization of cyber nationalism, China's government rarely faced criticism from the public on the shortage of healthy resources. Additionally, many observers of China's politics noticed the assertive diplomatic style in the early 2020s, which is labeled as "wolf-warrior diplomacy" and is welcomed by Chinese audiences at home (see Dai & Luqiu, 2022; Huang, 2021; Sullivan & Wang, 2022). Therefore, the "second image-reversed" approach provides a perspective to analyze the contributory factors of China's suppression maneuver in this wave of cyber nationalism, where the domestic factors are not significant for political decision-making.

In the early 2020s, China-US rivalry significantly shaped China's political decisions. The outbreak of the COVID-19 pandemic originated in Wuhan City, and Beijing's mishandling at the beginning of the global health crisis caused the US to criticize China, labeling the virus as the "Wuhan" or "Chinese virus" (Marston, 2020, cited in Rüland, 2021). Facing the US's criticism, China's government accused the US of "bringing the virus to Wuhan" and "spreading political virus" (Fifield, 2020; Shih, 2021). This "Blame Game" indicates the intensified hostility between the two powers during COVID-19. In addition, the impact of the COVID-19 pandemic on the China-US rivalry can be found in the China-US trade war. The China-US trade war has several impacts on China's foreign situation. First, it caused the rise of punitive tariffs on commercial products made in China. Second, many foreign investors relocated their firms from China to Southeast Asia (SEA). Finally, considering the COVID-19 crisis governance in China, many foreign investors reduced their dependence on China (Rüland, 2021). In order to gain a flexible diplomatic environment, China launched its "mask diplomacy" and "vaccine diplomacy" in the SEA region by claiming its goodwill to provide medical resources. These efforts faced difficulties in countries with territorial disputes with China, such as the Philippines and Vietnam (Rüland, 2021).

Against this background, Thailand is crucial for China's diplomatic situation as it is at the core of the political progress of SEA regionalism (na Thalang, 2022). Even though the development of China-Thailand relations saw Thailand's drift towards China after the 2014 coup, factors embedded in the wave of China's cyber nationalism can potentially damage the connectivity and good relations between the two countries. First, considering China's government is conventionally deemed the prominent supporter of China's nationalist movement, in this cyber incident, international society held a skeptical view of the role of China's government. The viewpoints of international society discredited China's government and potentially hindered China's diplomatic objectives in SEA. Second, the development of the incident was beyond China's control. The SEA region experienced processes of

democratic backsliding (Rüland, 2021). China's cybernationalist mobilization in the early 2020s evoked pro-democracy activists from other countries in the SEA region to engage in the conflict to express their grievances towards the authoritarian regimes. A significant topic in this incident is the criticism of authoritarian practices in Asia. Third, informed by the previous factor, the pro-democracy movements in Thailand, which the MTA incited, demanded political reform, decreasing the credibility of the Thai junta and influencing the relations between the two countries, as the Thai junta has a close tie with China. Thus, the merging of cybernationalist sentiments in the early 2020s has the potential to impact China's diplomatic objectives in the SEA region, for example, the formulation of the Health Silk Road during COVID-19 and the bigger picture of a community of shared future of humankind.

conclusion

This article aimed to understand the domestic, regional, and international factors behind the cyber nationalist phenomenon in China and Thailand in the early 2020s. The empirical analysis shows that domestic, regional, and international socio-political factors affect the rise and development of cyber nationalism. China's cyber governance, which helped the government to propagate the mainstream ideology of the "One China Principle," caused Chinese online nationalists to initiate a nationalist mobilization in cyberspace that targeted Thailand. The impact of authoritarian doctrine triggered pro-democracy activists from Thailand and other Asian regions to engage in the cyber conflict. Two different patterns of nationalism caused a dilemma for China and Thailand in handling the conflict in cyberspace.

Informed by the "second imaged-reversed" approach, this paper implies that cyber nationalism plays a crucial role in governments' diplomatic strategies. In this incident, the consideration of China's diplomatic environment outweighs the domestic capital of nationalism. China tried to appease the incident to gain flexible diplomatic strategies. Thus, China's government tried to appease the incident. The evidence can be an official diplomatic statement and eliminating related information from China's cyberspace. China's maneuver lies in the international factors in the background of the COVID-19 pandemic, which intensified China-US competition and decreased regionalism in SEA. The surging nationalist sentiment in China and Thailand's cyberspaces thus tested the excellent relations and connectivity between the two countries.

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De-secularization, Political Polarization and Civil Religion:
A Case of Bangladesh

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ABSTRACT

After a long era of secularization since the end of World War II, de-secularization has been on the rise across the world. It revolts against the fundamental tenets of the mainstream democratic and secular state, which can essentially be understood in terms of the exclusion of religion from the public space of a country. Several types of de-secularization can be identified in different regions and countries of the world. However, what is common among them is that this phenomenon has been generating not only numerous conflicts, but also serious political polarization of the countries concerned, rendering a meaningful dialogue and reconciliation between divided camps almost impossible.

After certain period of polarization and impasse, new signs seem to be emerging, which may be labelled as a call of "Return to good old days!", i.e., going back to the country's past when people were tolerant with each other despite communal and cultural differences, not plagued by polarization, while remaining deeply religious. Several efforts and practices in such a trend can be identified, which may be understood in terms of civil religion, a religion that would enable its followers to behave humanely across political and religious divide.

Bangladesh provides a good case study with an overall research question: "How can political polarization as a result of de-secularization be mitigated by civil religion?" However, this case study based on qualitative data suggests that civil religion has yet to play a significant role in Bangladesh despite its rich cultural heritage of religious tolerance.

KEYWORDS: De-secularization; Political polarization; Civil religion; Bangladesh

INTRODUCTION

With the introduction of modernization all over the world, it was predicted for many years that countries would experience the decline of religion in the public sphere. Secularism was considered as a cure for a number of woes that had been plaguing traditional societies (Keddie, 2003, p. 19). In the general perception that religious affiliation was politically problematic, secularism was believed to play a significant role, particularly in controlling ethno-religious violence or communal violence (Gorski, 2003, p. 111).

However, recent studies have been bringing up signs of backlash to secularism (Armstrong, 2004, p. 40). As secularization advances in society, people become anxiously aware of the de-sacralized world that does not offer them any faith or a meaning of life (Carroll, 1984, p. 362). While faith is apparently in decline in the public space, people look for faith-affiliated ideologies to restore traditional and moral values in their lives. To keep up with this new trend, many political parties and governments have begun to appear religious to satisfy their constituencies (Marty, 2003, p. 43). Increasingly, political actors are turning to religious extremism, and communal violence is becoming a norm in some countries (UNDP, 2016. P. 10).

As a result, scholars increasingly feel the need to investigate the phenomenon that society is becoming de-secularized across the world. Eric Kaufmann, a Canadian specialist in political and religious demography, projects that the growth of religious communities (i.e., the number of the people with a strong belief in religion) will soon be higher than people with secular beliefs (Kaufmann, 2010, p. 391). According to him, there will be more people with religion than without by 2050 across the world (p. 392). The religious population is growing also as a result of an increase in population in the

so-called Global South, where religion still plays an important role in the public sphere. Furthermore, proselytizing and evangelizing missions, which tend to be more successful in developing countries, contribute to the tendency, which was also affirmed by the Washington-based Pew Research Center (Musa, 2023, para. 3).

One of the major consequences of de-secularization is political polarization within countries, arising from religious differences in the public sphere. It is characterized with a situation in which a country is divided into two or more camps due to differences over fundamental issues and no meaningful dialogue or interaction is possible across the national divide (Satha-Anand, 2022). Political polarization is tearing apart the social fabric of the countries like Bangladesh, India, Kenya and Poland, where secularist values and norms were once a uniting element in society (Carothers & O'Donohue, 2019, p. 6). These countries pioneered state-imposed secularism and held different communities together by means of universal language of rights and liberty (p. 6). However, many of them have evidence of political polarization as de-secularization is gaining strength. Both India and Bangladesh are struggling with the clash between Hindu and Muslim conservative communities. In Kenya, inter-religious conflicts between Hindus and Christians exist as a result of competition over natural resources such as land and business interests (Moywaywa, 2018, p. 134). In these countries, the polarization has been made more complicated by the involvement of the central government. Poland, in a somewhat different social vein, is facing conflict between the Catholic Church and the pro-life NGOs, LGBTQ activists and feminists. With 87% of the population being Roman Catholics, young Poles have turned away from the church and the conservative government in massive protests against the church in recent years (Sugar, 2022, para. 5).

While de-secularization spreads across the world accompanied by political polarization, signs of another new trend seem to be emerging, which can be termed as the rise of civil religion (Webb, 2018, p. 66). This religion appears to be operating in the public sphere of a country and influencing political and social actors into conducting themselves ethically towards each other. In so doing, it may work towards creating a condition under which significant domestic differences may be bridged and hereby addressing the political polarization (Satha-Anand, 2022, p. 3).

RESEARCH OBJECTIVES

The overall research question of this paper is: In what ways can political polarization created by de-secularization be mitigated through civil religion? To answer this research question, the paper sets up the following research objectives: (1) to understand the process of de-secularization of a country after certain period of experimenting with secularism, which results in political polarization; and (2) to examine the existence, role and potential of civil religion in addressing the political polarization in the context of de-secularization. Bangladesh is chosen as a case study to shed light on these issues. Much like other South Asian countries, Bangladesh saw the growth of modern and secular sector with the promise of protection of minorities, but its institutionalized secularism failed to protect people from violence influenced by ethnic and religious differences.

The paper first draws attention to a secular state and its effects, standpoints, governing assumptions and the treatment of claims for religious truth. This serves the theoretical debate of whether secularism can deliver on the promise to treat all religious and non-religious groups alike. The paper then looks through the historical development of secularism in Bangladesh as a political philosophy. Beginning with the evidence of tolerance to political and societal pluralism in the Bengal region before secularism was officially adopted by the independent Bangladesh, the paper points out the historical developments of political parties and their attempts to make a secular state and determines the degrees of their success or failure. The paper then observes the rise of de-secularization in Bangladesh in the following periods by identifying its several sources. The paper finally identifies the elements of civil religion, operating in the public sphere and generating tolerance for plurality in the current state of political polarization. It particularly examines the ways in which civil religion reconnects among different identities and addresses the atomization of society with political consequences.

Literature Review: De-secularization and Civil Religion

Sociologist Peter Berger introduced de-secularization as a concept to refute the idea that religion was receding from society and politics across the world. Secularism is a theoretical principle in politics which advocates for keeping religion out of the public sphere, including the government,

educational system, and other social institutions. Therefore, de-secularization entails reversing or lessening this separation, resulting in the re-introduction of religious ideals, practices and thoughts in various facets of society. In the sociology of religion, de-secularization is conceptualized as counter-secularism, which offers a new dynamism to modernity. According to Berger, the growth of society and its culture lies not in accepting one philosophical aspect of a theory such as secularism, but in studying both secularism and counter-secularism at the same time to identify the political trend (Berger, 1999, p. 7). The focus here is not on differences or the choice between the two concepts, but on understanding the underlying cultural and historical significance of religion in society, which is missing in the argument for complete secularization. Despite secularization, the fact remains that religion plays a vital role in shaping a county's culture, behavior, policies and norms. French political scientist Gilles Kepel responded to the critiques of de-secularization that argued that it was a deviation from modernity and economic advancement. According to him, religious faith does not contradict modernization, scientific and technological progress or the freedom of expression, but enhances mutual forbearance and amplifies cultural nuances (Kepel, 1994, p. 7).

Examples and political inspirations from Muslim-majority countries that advocate for their own ideas of Islam may enrich the discussion further. Although these countries frequently justify coercive policies which help establish an "unchecked monolith" (Hefner, 2000, p. 12), these policies tend to regard religion as the moral pillar of public order, not subscribing to the view of religion as an ancient institution or an instrument of dominance over individuals. These countries insist on civil Islam, which embraces a formal democratic system that encourages civic associations and democratic culture and is protected by the state that respects and upholds the rule of law (Hefner, 2000, p. 14).

In this light, it is essential to highlight the definition and objectives of civil religion in scholarly works. Civil religion has been discussed as a form of quasi-religious or symbolic expression that unifies the nation in historical, political and cultural terms. Offering a common framework of values and identity, civil religion can bring people together. On the other hand, it may cause conflict when aimed against particular religious values or when manipulated for political purposes. French sociologist Émile Durkheim is well-known for his discussion of the idea of civil religion, which has been used to explore numerous cultures and their distinctive civil religious expressions by giving importance to integrating individuals into a larger society (Wallace, 1977, p. 288). According to Durkheim, civil religion differs from organized religion and focuses more on the significance of common values and symbolism in creating a cohesive society. In *The Social Contract*, Jean-Jacques Rousseau dedicated a lengthy chapter on the conceptual elements of civil religion. He emphasized a sense of morality in politics that would inspire and extend sociability (Beiner, 2009, p. 620). Rousseau also suggested that the core thought of civil religion identified "gods and the tutelary benefactors" to help maintain the stability, order and prosperity of the country and its successful inculcation contributed to these ends (Beiner, 2009, p. 621). Here, he emphasized that the repetition of values that contributes to sociability among people could fulfil the objective of finding unifying symbols.

Providing a more historically informed definition of civil religion, French historian Numa Denis Fustel de Coulanges identified civil religion as the foundation of city states such as in ancient Greece and Rome and discussed the ways in which it had bound the cities together, with the result that magistrates and citizens were more scrupulous in performing their duties (Coulanges, 2012, p. 182). While maintaining that civil religion was not a religious establishment, he described and agreed with Greek historian Polybius's observation that the public form of religion inspired the magistrates to be stricter and fairer and lawless masses remained restrained by their fear of gods and punishment in afterlife (p. 352). In his attempt of introducing a more modern version of civil religion, American sociologist Robert Neelly Bellah pointed out civil religion in the United States with various rituals that unite its citizens, employing symbols that are drawn from specific religions, but which operate independently of those origins (Bellah, 1967, p. 4). In order to justify the presence of civil religion in the political foundation of a country, it is not enough to point out its historical presence in politics. French philosopher Auguste Comte and British thinker John Stuart Mill both discussed positive results of involving religion in politics in the modern society. Suggesting that positive religion could create positive civil society, they equated religious performances with citizens cultivating good habits and becoming virtuous (Nussbaum, 2011, p. 11).

While it is hard to find any scholarly works that explicitly discuss the connection between de-secularization and civil religion, there are multiple examples of the practice of civil Islam, which

can strengthen the idea of civil religion operating in the context of de-secularization. Also, American historian R. Scott Appleby researched on the Catholic lay movement of Sant'Egidio in Africa, Buddhist activism in support of human rights in Cambodia and religious engagement in both Sunni and Shia Muslims across the war-torn Middle East. Investigating these cases points to the central role of core ethical convictions in driving the pursuit of peace in society (Appleby, 2008, p. 149). These examples suggests the existence of civil religion in action, which academic research should explore further in the current trend of de-secularization.

RESEARCH METHODOLOGY

This research has adopted qualitative methodology, comprising of document analysis and semi-structured interviews. Document analysis has been used to trace the changes that Bangladesh has gone through since when the country was referred to as Bengal in the British Raj. These changes involve the acceptance and development of Islam as part of the Bengali culture, the adoption of secularism by the newly independent Bangladesh, the trend of de-secularization in the following periods and the potentials and signs of civil religion. Relevant data have been collected from existing documents, including academic and news articles, books and internet sites.

To acquire more detailed and specific data, especially on the de-secularization and civil religion of Bangladesh, two semi-structured interviews have so far been conducted with Bangladeshi intellectuals, asking them the following questions:

1) How does de-secularization impact relationships between different religious communities?

2) What do you foresee as potential future trends in de-secularization?

3) In your view, what distinguishes civil religion from organized, institutionalized forms of religion?

4) Do you see differences in how younger generations engage with civil religious elements compared to older generations?

5) To what extent does civil religion contribute to the formation of a national identity in Bangladesh and address the current political polarization?

6) Can the "Good, Old Islam" in Bengal be revived to address the political polarization.

7) In Bangladesh, how might the role of civil religion evolve in future?

Data collection by semi-structured interviews is to continue till it reaches a saturation point. The data collected by the above two methods have been analyzed by coding and various categories of codes have been created. These codes have been used to create narratives that explain the above-mentioned changes and issues. These narratives are provided in the next section.

RESULTS AND DISCUSSION
A Case of Bangladesh

Bangladesh has a rich history of adapting to different cultures and religions, having been ruled by empires with strong influence over its traditions and practices. Although the influence of Hinduism and Buddhism were strong in Bengal at the heart of the Indian subcontinent, the philosophy and practice of Sufism from Islam developed more prominently. From there, the local culture evolved into the Baul culture, which preaches love for humanity. The peaceful co-existence of religions in the political sphere has been maintained in the country's history. Thus, Bangladesh offers an excellent example of de-secularization in which the elements of civil religion that have nearly been lost in the extremist political parties weaponizing religion may be brought back.

"Good Old Islam" in Bangladesh

A powerful and ongoing influence of the Islamic faith, which has grown to be one of the most significant religions in the world, has been felt in many facets of human existence from the beginning of the 7th century AD. Islam's influence has crossed geographical and historical boundaries, whether it be through its spiritual teachings or its effects on politics, science, art, or other fields. As a nation with Muslim majority, Bangladesh's journey has been deeply intertwined with the teachings and principles of Islam. This section of the paper explores the extent to which Islam's impact has shaped the local socety, encouraged cross-cultural interaction in Bangladesh.

In the post classical era, around 750-1161 AD, as the Buddhist Pala empire enjoyed relations with Arab Abbasid Caliphate, the first arrival of Islam was through the increased trade with Arab

merchant in places like port of Chittagong (Kumar, 2003, p. 199). The Pala empire was dominant in the Northern Indian subcontinent including the current day west Bengal, Bangladesh and Nepal. Arab geographers as well as Al-Masudi, the author of 'The Meadows of Gold' suggested in their writings the arrival of Arab traders before the Turkic conquest and the earliest mosque in South Asia built just after the lifetime of prophet Muhammad (Kumar, 2003, p. 203). In addition to trade, Shah Surkhul Antia and his students who arrived in the region in 1053 AD, including Shah Sultan Rumi, were among the original Sufi missionaries (Haq, 2013, para. 4). In the 13th century, another Sufi missionaries introduced to Bengal the teachings of Islam, which resulted in the blend with local traditions and a unique cultural amalgamation. Through the further influx of missionaries, many people in Bengal had begun to accept Islam. Much of the present-day central Bangladesh and north and southwest Bangladesh came under Muslim domain during the reign of Sultan of Lakhnauti Shamsuddin Firuz Shah. He was responsible for sending numerous forces and his commander in chief Syed Nasiruddin to Srihatta (present day Sylhet in Bangladesh) to triumph over an oppressive Hindu king Gaur Govinda (Karim, 1959, p. 97). By 1303, over three hundred Sufi preachers led by Shah Jalal aided the conquest and confirmed a victory. Jalal distributed his followers to spread Islam across different parts of Bengal after the conquest, becoming a household name for not only Muslims but everyone in Bangladesh (Karim, 1959, p. 100). The social fabric of Bangladesh was subject to the influence of Islam. The country's social dynamic has also been influenced by Islamic values related to family structure, gender roles and interpersonal relationships. Although the land already had a very diverse culture and communities of different religious followers living in harmony, the influx of Islam was never marked as an invading power. In parallel of the religion's influence, the mystic tradition of Islam was gradually making a lasting impact on the Bengali people. With the help of charism, piety and adaptation, Sufism remained a strong pillar of mystic Islam in the region (Göktaş and Chowdhury, 2023, p. 322). Sufis made a tremendous effort to avoid religious and community disputes and strive to be peaceful participants in civil life. Bengali art and architecture were significantly influenced by Sufism as well. The ornate embellishments and patterns on Bengal's "Dargahs," or Sufi shrines, stand out as symbols of the area's syncretic culture. Bengal's terracotta art that may be found in mosques and temples bears traces of Sufi influences as well. Sufism in Bengal gave rise to a number of musical genres, such as Baul, Kirtan and Gazal. To create a special and distinctive form of music that embodied the region's religious harmony and cultural variety, these musical traditions frequently combined elements of Hindu and Islamic music (Göktaş and Chowdhury, p. 323). This period can be recognized as the blooming of the Bengali culture in the co-existence with of various religious influences.

Another core religious and cultural blend is the Baul culture. Even though the origin of the word is unknown, it is a distinct group of mystic minstrels with mixed elements of Vaishnava Hinduism and Sufi Islam. Lalon Shah was the most celebrated Baul saint in the Bengali history. With a liberal interpretation of God and Love, it is only natural that Baul devotional music transcended religious boundaries, and some of the most famous Baul composers, such as Lalon, criticized the superficiality of communal divisions (Donald, 1995, p. 188). 'The Religion of Man' is a book compiled from Rabindranath Tagore's speeches and essays made on different occasions. The book showcases his love and admiration of the songs of Bauls and the lifestyle and culture of rural Bengal. Apart from his admiration for Bauls, Tagore set himself in many aspects in the Comtean tradition of humanity in politics by affirming the positive spiritual performance for cultivating good habits in public life. Tagore also provided a comprehensive reason why human beings needed a religious perspective. According to him, humans possess a strong tendency toward egocentrism and greed, which prevent them from achieving their most important goals in life (Nussbaum, 2011, p. 20). The emphasis on the cultivation of sympathy, which was the core of the teaching of both Baul and Tagore, was similar to Comte's thoughts. Even though the Baul culture was distinguished from the organized religions such as Hinduism, Islam, Buddhism and Vaishnavism in its rejection of formality and human made rituals, the practice of Bauls included elements of moral values similar to those of organized religions. Their emphasis was on the significance of the physical body as the shrine of God. Along with their music and poetry, the Bauls are respected for their disregard for convention. The goal of Baul poetry, music, song, and dance is to discover how people and God relate to one another and to achieve spiritual emancipation. Their devotional songs first emerged in the Bengali literature in the fourteenth century, which is the earliest to be dated.

Aside from the spiritual connections between Islam and moral sentiments of people, the interaction with politics also has a long-standing history. Upon recognizing the sustained growth of culture for Muslims, Islam had received government support in Bengal since the rule of Ikhtiaruddin Muhammad Bin Bakhtiar Khiljee in the early thirteenth century. After his era, the continuation of Muslim rule in Bengal for the next five and a half centuries, naturally assisted with the spread of Islam (Huque & Akhter, 1987, p. 203). In the eighteenth and nineteenth centuries, the "ideology of Islam underwent a renaissance in Asia," (Khan, 1985, p. 18) and as a result, the subcontinent was divided along religious lines. The stress placed on Islam's "religious uniqueness" and the "cohesiveness of the Muslim community" eventually led to the rise of Muslim separatism and the founding of Pakistan in 1947 (Sayeed, 1968, p. 10).

Efforts of Secularization or Islamization?

The process or need for secularization started soon after Bengal's increased trading with other nations and empires. The legal history of secularization had started with the adoption of the constitution of a newly liberated Bangladesh in 1972, but secularization was frequently discussed much earlier in the political sphere of the Indian subcontinent. The endeavor of secularization was not an immediate reaction to the division of the subcontinent along religious lines. To put the journey of secularization as a political idea into perspective, it is important to trace over the historic past of the subcontinent to the spirit of nationalistic enthusiasm under the British colonialism.

There were no traces of secularism in the ancient or medieval Indian continent, which was tolerant of all religions with the upholding of dharma, i.e., transcendental truth, having been considered the most important responsibility of the rulers. Moreover, rather than a conscious pursuit of the equality among people, the ancient justice was founded upon the principle of "inequality." Contrary to the economic or social inequality theories of sociology, this would essentially demonstrate a strategy that benefits the underprivileged by providing more economic possibilities and social assistance. This ensured that religious minorities were protected under special rights and enjoyed protection (Ahmed, 2017, p. 258). Historically, India was not seized by the passions of nationalism for a long time.

The change happened due to an increasing exposure to foreign traders and the exchange of cultures. In the 19th century, with the strong influence of European traders and spread of Christianity in the region, the political leaders were under pressure to accept secularism, imagining that the civil affairs should be free from religious influence. This way of thinking was unfamiliar for most of the local population. Therefore, an idea was improvised with the assimilation of deities like Durga, Vani and Lakshmi to initiate a nationalist movement as a revolutionary reaction to the British rule. Bal Gangadhar Tilak was the leader of the Indian nationalism. While he himself was motivated for the independence of India, he also called on his compatriots to take keener interest and pride in the religious, cultural, martial and political glories of the pre-British Hindu India. This act brought non-English-educated Hindu majority into the movement but alienated the Muslim minority, creating reasons for communal violence (Rag, 1995, p. 76). Muslims maintained a distinct religio-centric way of life and the adoption of Hinduism into Indian nationalism separated two communities. In this sense, there were no parallel trajectories in the development of secularism between the Indian subcontinent and Europe. Secularism was first introduced to the Indian society by Jawaharlal Nehru to deal with the rising communalism in the subcontinent (Khosla, 2014, p. 90). In this respect, it is important to note that the Indian communalism did not reflect a Hindu-Muslim conflict, but a conflict between dominant majority and minorities in Indian society.

Secularism was introduced not only to handle a divide between Hindus and Muslims in a post partition India, but also to handle the tensions between Hindus and Sikhs and the differences among Hindu castes. The development of Hindu-based nationalism with the introduction of an ambiguous form of secularism to the British Raj was subject to severe criticism at that time and even after for a long time by sociologists and scholars in the context of post partition violence that erupted among religious groups. Ashish Nandi (1995) and T. N. Madan (1987) were the salient advocates of this critical view. Nandi specifically focuses that there are two different definitions of secularism: one that is mostly known by the Western world and the other that fits well into societies like South Asia, where there is a variety of religions, ethnicities and cultures (Bhargava, 1994, p. 1788).

Formerly a part of the Indian subcontinent till the first partition and later becoming an independent country after the second partition, Bangladesh holds people from various social ideologies

and principles attached to their respective religions. It was not until the 1971 independence struggle that Sheikh Mujib and his political party, the Awami League, used the phrase "secularism" explicitly. Irrespective of strongly religio-centric lifestyle of Bangladeshi people, the party placed a strong emphasis on secularist principles for the new country. Bangladesh established its constitution in 1972 after independence, and secularism was incorporated into the document. It is viewed as the opposite of communalism in Bangladesh. Also, the Bangladeshi leaders' criticism of the Pakistan's Islam-based political system during their struggle for independence made it imperative that some radical changes be introduced in the new state, including the prohibition of the use of religion for political purposes (Haque and Akter, 1987, p. 203). In Bangladesh, the term "anti-communalism" does not mean "anti-religion." Rather, it means politics by giving equal status to individuals in a unified national community and eliminating conflict between the various subnational communities (Bhuiya, 2021, p. 401).

Through the Fifth Amendment, however, President Ziaur Rahman eliminated the secularist elements from the constitution in 1977 in the wake of the declaration of a martial law in order to appease the majority Muslim population who had been enjoying a parliamentary government for a brief period of time. The Islamization of Bangladesh starting from the constitution was obvious, but Zia later contradicted his own move by remarking that political ideology could not be based on a certain religion (Wohab, 2021, p. 6). The Eighth Amendment was used in 1988 by President Hussain Muhammad Ershad's administration to establish Islam as the official state religion. His advancement of Islamization of the state was interpreted as a move to legitimize his position in power for a long term and to gain more allies from among the Islamic states in the Middle East (Guhathakurta, 2012, p. 291). Ershad maintained relationships with both orthodox Islamic and mystic believers all the while struggling with the accusations of corruption, resulting in the complex relationship and eventually the divide between Islamist and secularist politicians (Riaz, 2010, p. 72).

The Fifth Amendment to the constitution was revoked in 2011 when Sheikh Hasina's Awami League was in power by reinstation secularism as the fundamental state policy but the constitutional provision of Islam as the state religion was maintained. Sheikh Hasina saw the need to follow a model of established religion while ensuring that religious minorities were given equal rights. The Awami League views the adoption of Islam as the state religion as the means to appease the Muslim majority, including the Islamist advocacy group Hefazat-e-Islam, and to get along with other religious groups in the 14-party alliance. Although the differences are recognized and facilitated among the Awami League alliance through the practice of modus vivendi, the meaning of secularism and the issue of whether the state should be committed to secularism is deeply highly contested in Bangladesh, making the country an interesting case study. Although the institutional exploitation of the Pakistani rulers influenced the newly liberated country in 1971 to discredit Islam and adapt secularism in the constitution, the society could not be altered, and the political leaders were aware of it.

In early January 2017, there were reports of intellectuals accusing the government of undermining secular and minority population by allowing alterations in the national textbooks. Secularist intellectuals, among others, points out that the poem "Boi", written by a former university Professor Humayun Azad, was dropped because Islamists, particularly the Hefazat-e-Islam, wished to exclude the secular and atheist writers. Also excluded were articles by writers like Rabindranath Tagore, a Nobel Laureate, Lalon Shah, Bengal's most cerebrated Baul, Humayun Azad, a linguist scholar and Satyen Sen, a historian of the Bengali literature (Wohab, 2021, p. 8). Bangladeshi author Shreya Ghosh observed that the textbooks written and edited after 1971 always had the national representation that is legitimized by the dominant political group who in general subjugates and tailors the national history (2014, p. 39). The social studies textbook provided by the Bangladesh government, 'Bangladesh and Global Studies' is an evident example of that notion. Alterations of the textbooks were widely covered in both national and international media as a very controversial step which violated secular principles. Besides, the removal of a sculpture from the Supreme Court premises on 25 May 2017 generated international headlines and accusations again of the government giving in to Islamist demands. The BBC reported that tensions are rising in Bangladeshi society and politics between Islamic conservatives and more moderate, secular voices defending pluralism and free speech (2017, para. 1). According to The Telegraph, Bangladesh's secular government, led by Hasina, made a concession to religious voters ahead of the 2019 national election (2017, para. 3). Professor Emeritus

Anisuzzaman of Dhaka University, in an interview with The Telegraph, highlighted that the sculpture's removal indicates the government's submission to Islamist pressures (para. 4).

In Search of Bengali Islam as Bangladesh's Civil Religion

The range of political narratives described by the above discussions, starting from Islam being a quintessential part of the Bengali culture to being a so-called "force of extremism and pressure," demonstrates a dramatic shift to say the least. There is a debate over whether Islam should be integrated into the cultural trends in Bangladesh, even though Islam has always and historically been the country's dominant religion. As discussed earlier and confirmed by interviews held by one of the authors of this paper (Professor A, 2003 and Professor B, 2003), multiple scholars agree that the founding of the state was made based on specific principles under certain political upheavals where models from Western nationalism were drawn in and Islam-based politics was discouraged. It was mostly due to the general association of Islamists with Pakistan during the war of independence, but soon after the situation was reversed to reflect more "normal" popular sentiments at large towards Islam. This could be one of the reasons why Awami League government relies on the support of this category of people to remain in power. Thus, it is clear that the state has taken the initiative to continue Islamization of the country, even if Islam and political institutions in Bangladesh are still separated functionally (Professor A, 2003 and Professor B, 2003).

The acts of the Awami League-led alliance government, from changing the secular contents in primary and secondary level textbooks, to removing the statue from the Supreme Court premises, are also an indication of increasing accommodation to religion in the public sphere. The increased undermining of secularism and promoting religion in the political venue may establish a new dimension of the Bangladeshi political culture, indicating a de-secularization specific to Bangladesh, but falling short of offering opportunities to the agents of civil religion (Professor A, 2003 and Professor B, 2003). The examples and progression of political events indicate falling back on hardline religious parties and organizations. While this can be interpreted as possible conflicts and disputes in the process of polarization, it also brings out the most important detail in all of the country's cultural history that religion has always been a defining factor in politics. As discussed in the previous parts of this paper, civil religion is not new to Bangladesh but since the involvement of secularism, religion and moral values has been looked upon like an antonym to modernization, not yet opening a pace for the operation of Bangladeshi civil religion. The old version of civil religion in Bangladesh was associated with folk culture, Sufism and religion-inspired humanity represented by Bauls and Tagore. Re-imagining religion outside of communalism and focusing on the larger grassroots communities that may function like a bridge over troubled water still remains as potential although it may capture something that enables people in society with various backgrounds to treat each other as human beings with civility as the essence of civil religion.

CONCLUSION

The paper began by discussing the disadvantages of a national fixation on secularism. It then built a theoretical base for de-secularization, political polarization and civil religion, opening for a case study of Bangladesh. Following the qualitative methodology, the paper has traced backed to the past existence of civil religion in the pre-independence Bengal and looked at the failure of the efforts of secularization in Bangladesh in order to answer the research question, "In what ways can political polarization created by de-secularization be mitigated through civil religion?" Firstly, the theoretical bases have been provided, followed by some significant instances of de-secularization, political polarization and the ways civil religion as part of de-secularization can address the political polarization. Secondly, the paper went through the specifics of "good old Islam" in Bangladesh in a period when practice of religion was not touched by communalism and extremism but rather hailed as a means to build an ethical structure in society. The elements of civil religion was met with resistance and suppression as the country went through different historical revolutions and changes. The most recent and current status ended with political parties using religion and especially the majority Muslim population as a constituency.

The paper has also revealed that the religious identity of a population should not be excluded from the country's public sphere, as this would act against the efforts of secularization that may no longer be actively pursued. The argument for de-secularizing the community becomes more valid after discussion on its peaceful existence in the Bangal region before introducing secularization in attempts
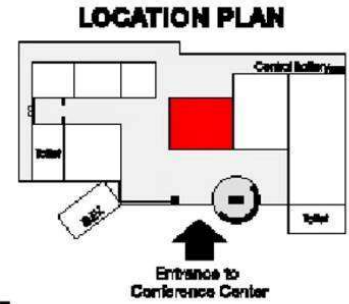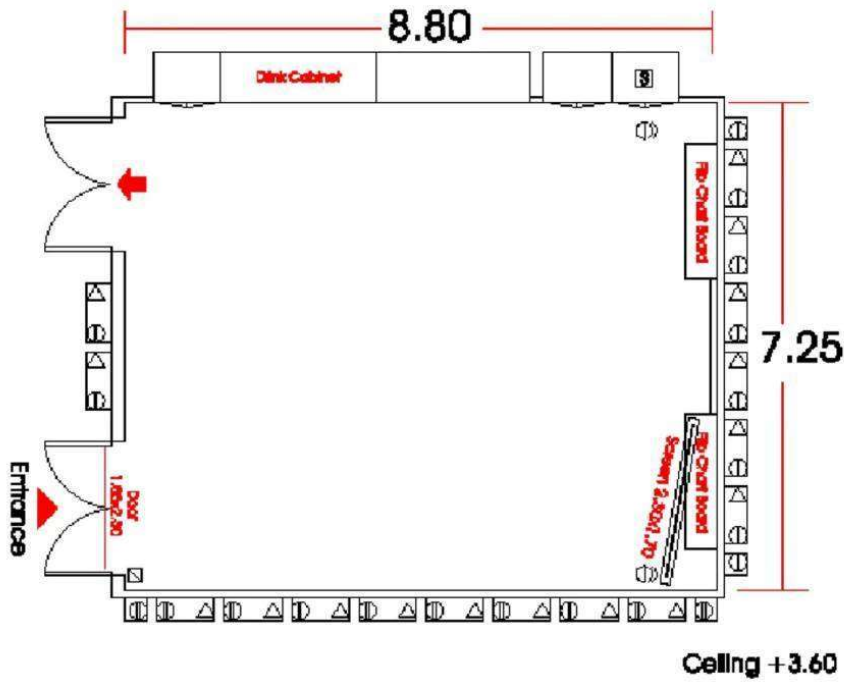
for the region to become modernized, following the western world. The unequivocal role of misuse of secularization as a theory created more polarization in the society in terms of religion and minority rights. Bangladesh with a rich history of diversity in terms of religion, culture and ethnicity has to accept the notable importance of their involvement in human behavior and decision making. To have these elements integrated into politics harmoniously, civil religion may be a driving force, although this role remains as merely a potential in case of the current political polarization of Bangladesh.

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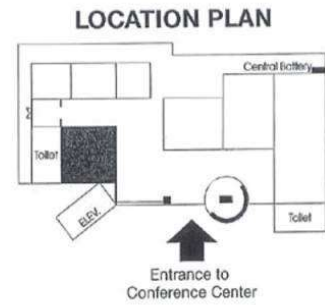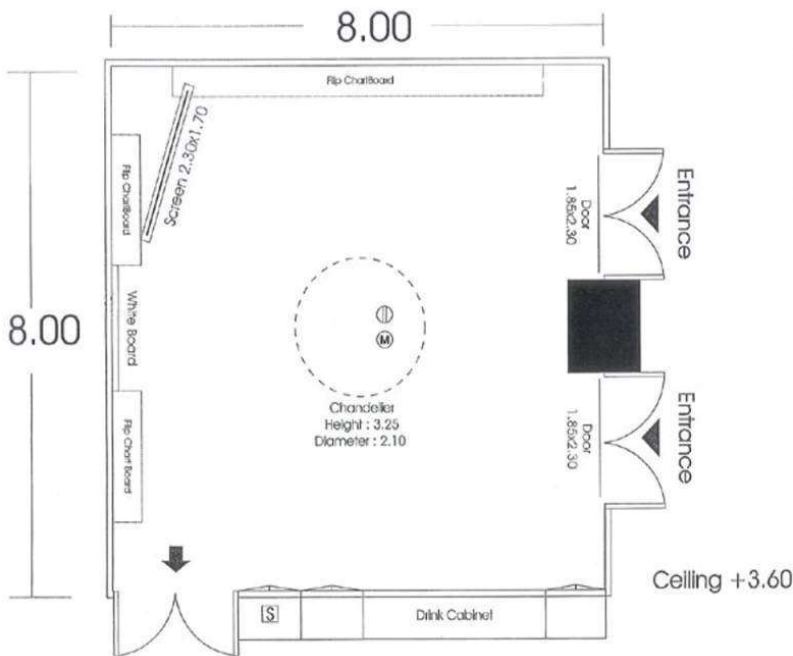
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SATABUD

Entrance to
Conference Center

swissôtel BANGKOK
RATCHADA

Key of Symbols	
◑	General Purpose Outlet
▣	Light Dimmers
△	Telephone Connection
◉	Microphone Sockets
◉	T.V. Outlet
▣	Sound System
◑	Speaker
▢	Projector Connection
♦	Fire Exit
▢	Projector

Ceiling +3.60

PATUMCHARD

LOCATION PLAN

Entrance to
Conference Center

swissôtel BANGKOK
RATCHADA

Key of Symbols	
◑	General Purpose Outlet
▣	Light Dimmers
△	Telephone Connection
◉	Microphone Sockets
◉	T.V. Outlet
▣	Sound System
◑	Speaker
▢	Projector Connection
♦	Fire Exit
▢	Projector

SCALE 1:75

5.80   6.40   5.00

| Drink Cabinet | White Board | [S] | Drink Cabinet |

BOONTARIK 1

BOONTARIK 2

BOONTARIK 3

5.00

Door 1.85x2.30   Door 1.85x2.30   Door 1.85x2.30

Ceiling +3.60

Partition Locker   Partition Locker

Entrance   Entrance   Entrance

LOCATION PLAN

Central Battery

Toilet

ELEV.

Toilet

Entrance to Conference Center

BOONTARIK

Key of Symbols	
⊕	General Purpose Outlet
⊠	Light Dimmers
△	Telephone Connection
Ⓜ	Microphone Sockets
⊚	T.V. Outlet
[S]	Sound System
⊄	Speaker
▢	Projector Connection
⬆	Fire Exit
▣	Projector

SCALE 1:75

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