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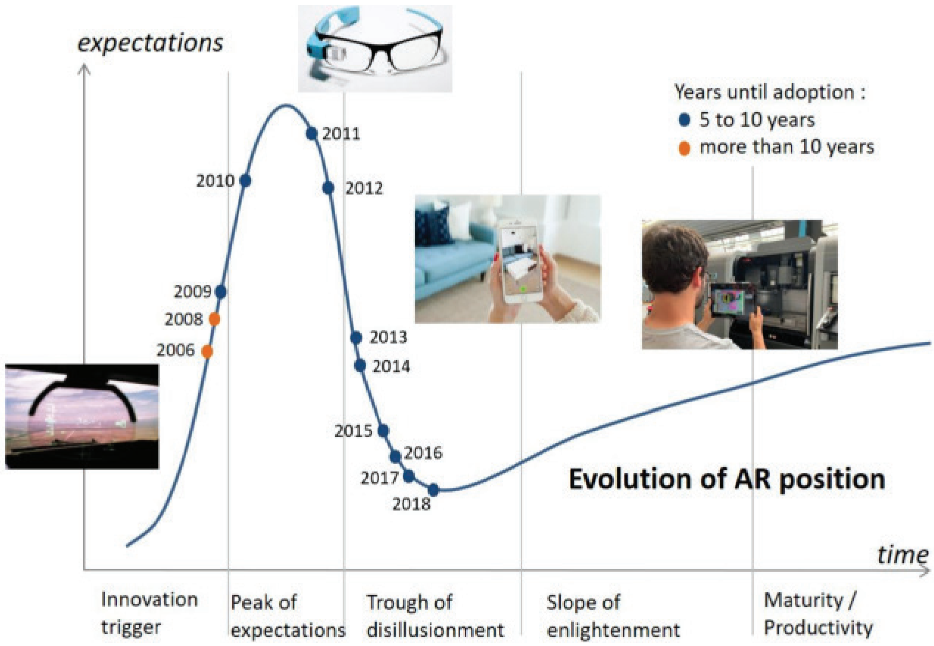

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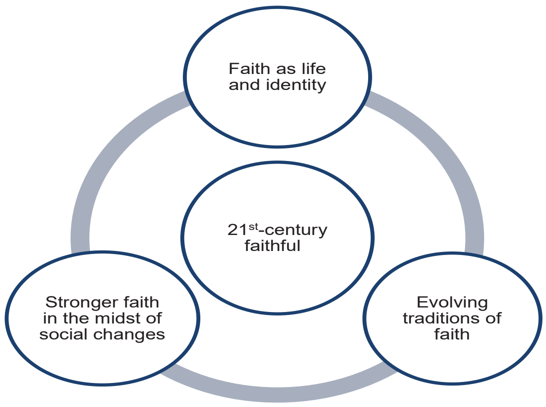

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Mental health and attitudes toward seeking professional help among students of Vietnam National University - Ho Chi Minh City

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Abstract:

The study on mental health and attitudes towards seeking professional help among students at the Vietnam National University - Ho Chi Minh City (VNU-HCM) is the result of a cross-sectional survey conducted in October 2023, with the participation of 8,383 students. This research aims to assess the levels of risk for mental health problems among students at VNU-HCM. Additionally, the study explores the current attitudes towards seeking professional help among students when they face mental health problems in their academic and personal lives. The results indicate that students were at risk of experiencing depressive symptoms (from mild to severe levels, 77.7%) and anxiety symptoms (58.8%) to varying degrees; however, they rarely seek professional help (M=1.66; SD=0.75). VNU-HCM students' attitudes towards seeking professional assistance reveal that while they can endure the stigma associated with mental health, they remain hesitant to discuss these issues with others. They recognise the need for psychological therapy and have trust in professionals, yet they lack the initiative to seek help. These findings indicate the need for measures, including enhanced communication and the integration of multimedia platforms, to raise awareness and encourage students to seek professional help when needed.

Keywords: **attitudes towards seeking help, mental health, students.**

Classification numbers: **1.1, 1.2, 4.1**

1. Introduction

The issue of mental health and related concerns has existed for a long time but has received little attention and consideration from healthcare facilities and systems [1]. Moreover, it has now increasingly spread to many other areas of society (e.g., education, social interactions, labour, and production). Research by T.M.T. Ton, et al. (2022) [2] shows that, in the context of the pandemic, the proportion of students exhibiting signs of stress, anxiety, and depression is quite high (51.84, 81.55, and 57.09%, respectively). Among them, the rate of students displaying signs of severe to very severe stress disorder is 7.96%, anxiety disorder is 35.92%, and depression is 8.55%.

Despite this high prevalence, students' awareness, coping strategies, and tendency to seek professional mental health support remain limited. This highlights the necessity to examine not only the prevalence of mental health issues among students but also their attitudes and behaviours toward seeking psychological help.

This study explores key aspects through the following research questions: (1) How do mental health problems (depression, anxiety) manifest in VNU-HCM students?; (2) What are the main trends in students' attitudes towards seeking psychological support?; (3) How do mental health symptoms (depression, anxiety) among students correlate with their attitudes towards seeking professional psychological help?.

1.1. Literature review

Although mental health issues are prevalent and increasing (especially in the context of the COVID-19 pandemic), awareness, coping strategies, and the

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tendency to seek professional mental health support among students remain low. Research by T.T.H. Le (2017) [3] indicates that students' understanding of mental health is limited, particularly regarding certain concepts of mental disorders. Specifically, 46% of students surveyed stated they were unsure, and 6% responded that they were not at all sure about their answers. The research also highlights a correlation between mental health awareness and students' mental health status.

Another study by T.A.D. Kieu, et al. (2019) [4] identified four key aspects of students' understanding of bipolar disorder: the ability to accurately recognise bipolar disorder, general knowledge about the disorder, understanding of bipolar emotions, and willingness to seek help. The study found that students' knowledge in these areas was relatively low, while prejudice against mental disorders among students was higher compared to developed countries.

Research by A. Kamimura, et al. (2018) [5] reveals that only about 12.5% of students with depression and anxiety disorders sought mental health services in the past 12 months.

While numerous studies have examined students' mental health status and help-seeking behaviour, few have specifically explored the relationship between mental health problems and students' attitudes toward seeking professional psychological assistance. Understanding this relationship is essential to inform mental health prevention and support programs for students.

1.2. Concepts of mental health and attitudes toward psychological help-seeking

In this study, "mental health" is understood following the definition of the World Health Organisation (WHO, 2022) [6] as a state of well-being in which individuals can cope with normal life stresses, realise their abilities, study and work productively, and contribute to their communities.

To ensure conceptual clarity and consistency, the term "mental health" is translated as "sức khỏe tâm thần" throughout this article. Accordingly, an individual's mental health condition can be viewed across three general states: (1) mentally healthy, (2) at risk or in crisis, and (3) experiencing mental disorders.

This conceptual foundation provides a basis for exploring how mental health problems may influence students' attitudes toward seeking professional psychological support.

First, depression or depressive disorder, according to WHO (2023) [7], is a common mental disorder characterised by a prolonged period of depression, loss of pleasure, or lack of interest in activities. Depressive states are not the same as normal mood or emotional changes associated with daily life; victims of depression experience a depressed mood (feeling sad, irritable, or empty) throughout the day, almost every day, for at least two weeks (DSM-5). In addition, some other manifestations may also appear, such as poor concentration, excessive feelings of guilt or low self-worth, thoughts of death or suicide, changes in appetite or weight, and feeling very tired or lacking energy (DSM-5).

Anxiety disorders, or generalised anxiety disorders, involve persistent and excessive worry that interferes with daily activities [8]. This ongoing anxiety and tension can be accompanied by symptoms, such as restlessness, irritability, fatigue, difficulty concentrating, muscle tension, or difficulty sleeping [9]. Worries often focus on everyday matters like work responsibilities, family health, or minor issues such as housework or appointments. Individuals may experience this condition for months or even years.

A help-seeking attitude is understood as the general orientation or tendency to seek help, while help-seeking behaviour refers to asking for support from informal or formal support services to resolve emotional, behavioural, or health problems [10]. In the context of mental health issues, seeking help is a crucial skill that enables individuals, particularly students, to better understand and intervene in their situations. The behaviour of seeking professional help is an extremely important skill that assists students in reaching out to psychological and medical professionals for timely support to cope better and improve their mental health status [11].

2. Methods

2.1. Research sample

This study applied the convenience sampling method to survey students from 10 member universities of VNU-HCM. This method involves selecting samples based on the convenience and accessibility of the research subjects, without requiring a random or complicated sampling process. Specifically, the research sample was collected with the support of the Student Affairs Department of VNU-HCM and the Student Affairs Departments at member universities, according to the coordination request letter. This implementation method allows the research team to easily access and collect data quickly. This method not only saves time and costs but also enables the research team to gather a large sample in a short time, while still ensuring the representativeness of the sample by selecting a diverse range of students from different universities within the VNU-HCM system.

The official survey collected 8,383 samples, including 48.5% female students, 50.7% male students, and 0.8% identifying as "other" gender. The participants were full-time students from 10 member universities of the VNU-HCM, including the following institutions: University of Technology (18%), University of Science (20.3%), University of Information Technology (12.1%), International University (5%), University of Social Sciences and Humanities (13.6%), An Giang University (9.9%), Faculty of Medicine (12.2%), Faculty of Political Science - Administration (1.8%), University of Economics and Law (6.3%), and VNU-HCM Campus in Ben Tre province (0.9%). The survey support letter was sent to the member units through the VNU-HCM Student Affairs Department. The units then distributed the online link to students who met the criteria of academic year, major groups, gender, and residence to ensure representativeness. After receiving the link, students were required to read and understand the survey content and purpose, voluntarily agree to participate in the survey, and could withdraw at any time.

2.2. Research methods

By employing a quantitative research design, this study primarily utilises methods such as document research, questionnaire surveys, and statistical data processing. Regarding the document research method, we collected, synthesised, and analysed theoretical perspectives as well as practical research findings related to the survey content. Sources of knowledge came from books, specialised journals, scientific reports, research topics, and doctoral theses, both domestically and internationally. From this, we built a theoretical basis and developed a scale with specific indicators, corresponding to the levels for students to self-assess. Regarding the questionnaire survey method, we used questionnaires to collect data on the relationship between mental health and help-seeking attitudes. The questionnaires are described in detail below:

The patient health questionnaire (PHQ) by K. Kroenke, et al. (2001) [12] is used internationally to screen and assess depression. The scale consists of 9 items (e.g., loss of interest and pleasure in activities) based on DSM-IV criteria. The scale includes four levels of choice: 0 (not at all), 1 (several days), 2 (more than half of the days), and 3 (almost every day). Accordingly, the meanings of the scale scores are as follows: 0-4 (no depression), 5-9 (minimal depression), 10-14 (mild depression), 15-19 (moderate depression), and 20-27 (severe depression). Reliability analysis results show that Cronbach's alpha coefficient is at a good level (0.887>0.6), with total variable correlation greater than 0.3 (0.538-0.734).

The generalised anxiety disorder (GAD) questionnaire by R.L. Spitzer, et al. (2006) [13] is a self-report scale for generalised anxiety disorder. The scale includes 7 statements, describing anxiety symptoms that the individual has experienced in the last two weeks (for example: I cannot stop or control my anxiety attacks). The scale includes four levels of choice: 0 (not at all), 1 (several days), 2 (more than half of the days), and 3 (almost every day). Accordingly, the meanings of the scale scores are as follows: 0-4 (no anxiety), 5-9 (mild anxiety), 10-14 (moderate anxiety), and 15-21 (severe anxiety). Reliability analysis results show that Cronbach's alpha coefficient is at a good level (0.925>0.6), with total variable correlation greater than 0.3 (0.677-0.826).

The attitude scale for seeking help from professionals is based on the Vietnamese version by L. Luong (2020) [14] and includes 29 observed variables, divided into four aspects: awareness of the need for psychotherapy help (8 items); ability to tolerate prejudice related to mental health (5 items); openness to discussing mental health issues (7 items); and trust in mental health professionals (9 items). The scale includes four levels of options: 0 (disagree), 1 (possibly disagree), 2 (possibly agree), and 3 (agree). The higher the total score across all aspects, the clearer the need for psychotherapy; the greater the ability to accept prejudice; the higher the openness; and the greater the trust in the expert, and vice versa. The results of reliability analysis on each sub-scale show that Cronbach's alpha coefficient ranges from 0.646 to 0.745, with total correlation variables: awareness of the need for psychotherapy help (0.530-0.603), respectively, ability to tolerate prejudice related to mental health (0.513-0.513), openness to discussing mental health issues (0.344-0.475), and trust in mental health professionals (0.464-0.547).

Regarding statistical data processing methods, the data obtained after the survey were processed using SPSS software version 20.0. The information and statistics used in the research include descriptive statistical analysis and inferential statistical analysis. Specifically, the article employs average score calculations to describe the actual state of help-seeking attitudes and Pearson correlation analysis to explore the relationship between mental health and help-seeking attitudes among students.

3. Results and discussion

3.1. The current status of depression and anxiety levels among VNU-HCM students

The survey results from 8,383 VNU-HCM students indicate a significant prevalence of depression and anxiety within the student community (Figs. 1 and 2). Regarding depression, the findings show that 1,869 students (22.3%) exhibited no signs of depression, while 6,514 students (77.7%) experienced varying levels of depression, ranging from mild to severe. Among these, mild depression was the most common (30.7%), whereas extremely severe depression had the lowest prevalence (10.4%) (Fig. 1).

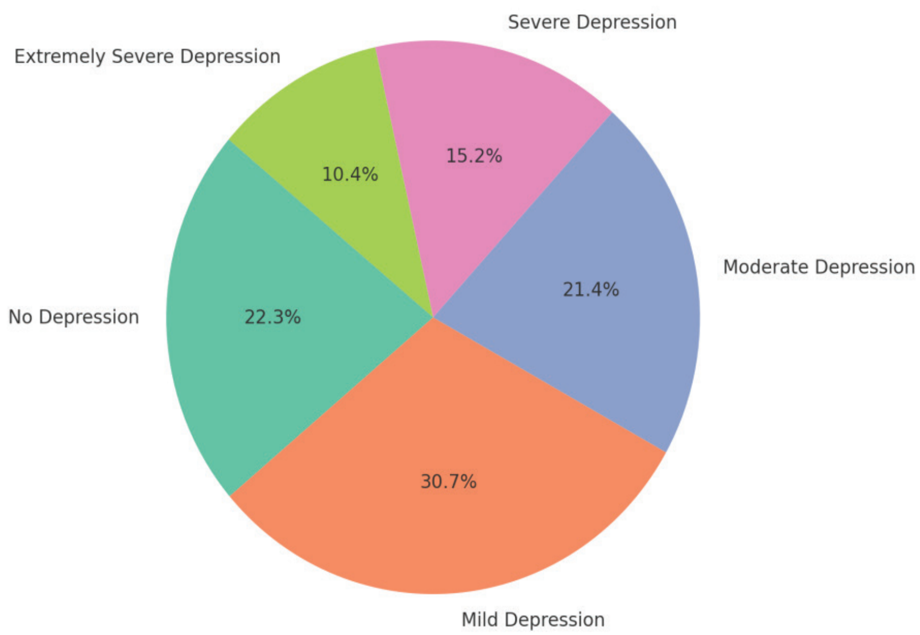

Fig. 1. Classification of student depression levels based on the PHQ-9 scale. Source: Research team (2023).

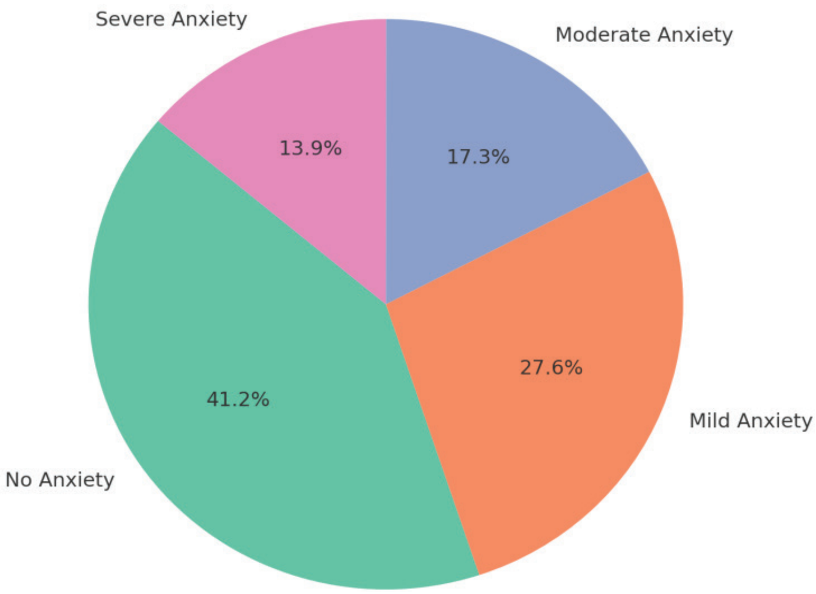

Fig. 2. Classification of student anxiety levels based on the GAD-7 scale. Source: Research team (2023).

Similarly, in terms of anxiety, the results revealed that 3,451 students (41.2%) showed no signs of anxiety, while 4,932 students (58.8%) experienced varying levels of anxiety, with mild anxiety accounting for 27.6% and severe anxiety for 13.9%. These findings highlight the importance of addressing students' mental health, particularly through appropriate support and intervention measures (Fig. 2).

3.2. Status of students' attitudes toward seeking help from professionals

According to Table 1, in the attitude scale for seeking help from experts, the assessment results indicate that students participating in the survey have a high ability to tolerate prejudice related to mental health (M=1.91; SD=0.88). Furthermore, they are also clearly aware of their own needs when it comes to seeking psychotherapy help (M=1.77; SD=0.82). They also exhibit a fairly high level of trust in mental health professionals (M=1.65; SD=0.65). However, they are still not ready to open up to others about issues related to mental health (M=1.32; SD=0.65).

In general, the surveyed students' attitudes towards seeking help from professionals were at a good level, with three-quarters of the aspects having an average score of more than half. Thus, the surveyed students demonstrate a desire to seek help and a need to address emotional, behavioural, and health problems in general. This also suggests that, in some respects, the students participating in the study may possess a general understanding of mental health.

3.3. Correlation between depression, anxiety, and help-seeking attitudes of students

After data collection and analysis, for the purpose of more effective analysis, we only used results from students with minimal to severe depression. The results obtained were from 6,514 students exhibiting these symptoms. Subsequently, we continued to analyse the correlation between depressive symptoms and aspects of attitudes towards seeking help from professionals. The results are presented specifically in Table 2.

Table 1. Status of students' attitude towards seeking help from professionals.

No.	Attitude to seek help from professionals	N	Min	Max	Mean	SD
1	Recognise the need for psychotherapeutic help	8383	0	3	1.77	0.82
2	The ability to tolerate stereotypes related to mental health	8383	0	3	1.91	0.88
3	Openness with people about mental health issues	8383	0	3	1.32	0.65
4	Trust in mental health professionals	8383	0	3	1.65	0.65
5	Attitude to seek help from professionals (general)	8383	0	3	1.66	0.75

Source: Research team (2023).

Table 2. Correlation results between the level of depression and anxiety and the attitude of seeking help from professionals.

No.	Attitude to seek help from professionals	Degree of depressive symptoms			Level of anxiety expression		
		N	*r*	*p*	*N*	*r*	*p*
1	Recognise the need for psychotherapeutic help	6514	0.181**	0.000	4932	0.189**	0.000
2	The ability to tolerate stereotypes related to mental health	6514	-0.149**	0.000	4932	-0.135**	0.000
3	Openness with people about mental health issues	6514	-0.165**	0.000	4932	-0.148**	0.000
4	Trust in mental health professionals	6514	-0.048**	0.000	4932	0.014	0.342

**: Statistically significant correlation at $p<0.01$ (p-value less than 0.01). Source: Research team (2023).

The Pearson correlation analysis results from Table 2 indicate that most correlations between attitudes towards seeking professional help and the levels of depressive symptoms and anxiety expression among students are very low to low. First, the recognition of the need for psychotherapeutic help is positively correlated with both depressive symptoms (r=0.181**, p=0.000) and anxiety expression (r=0.189**, p=0.000). This suggests that the clearer the need to seek psychological help, the higher the levels of depression and anxiety. In other words, students with higher levels of depressive symptoms and anxiety tend to have a stronger recognition of the necessity of seeking professional assistance.

Conversely, the ability to tolerate stereotypes related to mental health is negatively correlated with depressive symptoms (r=-0.149**, p=0.000) and anxiety expression (r=-0.135**, p=0.000). These findings suggest that a higher tolerance for mental health-related stereotypes is associated with lower levels of depression and anxiety. This implies that individuals who readily accept social stereotypes about mental health tend to experience lower levels of depression and anxiety, whereas those who are more sensitive to these stereotypes may feel greater psychological pressure, leading to more severe mental health issues.

Similarly, openness with others about mental health issues also exhibits a negative correlation with depressive symptoms (r=-0.165**, p=0.000) and anxiety expression (r=-0.148**, p=0.000). This suggests that individuals who are more open in discussing mental health issues tend to report lower levels of depression and anxiety. In contrast, those who are more reserved or uncomfortable talking about mental health may face greater challenges in coping with psychological distress.

Finally, trust in mental health professionals demonstrates a very weak negative correlation with depressive symptoms (r=-0.048**, p=0.000) and no significant correlation with anxiety expression (r=0.014, p=0.342). This indicates that higher trust in mental health professionals is associated with slightly lower levels of depression, although the strength of this relationship is minimal. Further research is needed to explore this association in more depth.

3.4. Discussion

Overall, students are at risk of facing mental health issues such as depression and anxiety, yet they rarely seek professional help despite having the desire to do so. This result is somewhat consistent with the findings of V.H. Nguyen, et al. (2019) [11], who surveyed 1,390 first-year students from the 2017-2018 academic year across nine regular training programmes at Hue University of Medicine and Pharmacy. The data indicate that the percentage of students with accurate knowledge about help-seeking behaviour for mental health issues is very low, at only around 21%. Additionally, the authors found that most of these students (60%) sought help from informal sources such as parents, friends, or relatives. In contrast, seeking help from formal sources, such as specialists, psychologists, or healthcare workers, accounted for a smaller proportion (around 40%). Notably, the percentage of students seeking consultation from teachers at the university was very low, at only about 10-13%. Thus, the attitude of VNU-HCM students towards seeking help from professionals indicates that they are likely to endure stigma related to mental health but are still hesitant to discuss these issues with others. They are aware of the need for psychological therapy and have confidence in professionals but lack the initiative to seek help.

The correlational results are also similar to the study by A. Kamimura, et al. (2018) [5], where about 12.5% of students with depression and anxiety disorders had sought mental health services in the past 12 months, and the study by V.H. Nguyen, et al. (2019) [11], where only about 2.5% of students were always ready to seek help when experiencing mental health issues such as depression, anxiety, or stress, and about 50% of students with moderate to severe symptoms of depression, anxiety, or stress sought help. Thus, poor mental health is also a factor that encourages students to seek help. This study has also identified additional factors related to students' attitudes, such as awareness of the need for help, the ability to endure stigma, and openness about mental health, which are motivating factors for seeking professional help.

This study is limited by its use of Pearson correlation, which identifies associations but does not establish causality. Future research could apply multiple regression or structural equation modelling (SEM) to explore underlying mechanisms. Additionally, the cross-sectional design prevents analysis of longitudinal changes in mental health and help-seeking behaviours. Lastly, as the sample is limited to VNU-HCM students, the findings may not be fully generalisable. Despite these limitations, the study provides a foundation for further research on student mental health and help-seeking attitudes.

4. Conclusions

Research results show that students at VNU-HCM have an average attitude towards seeking help from professionals. The analysis also indicates that the awareness of the need for psychotherapeutic help has a low positive correlation, while the aspects of tolerance of prejudice and openness about mental health both exhibit a low negative correlation with students' mental well-being. Additionally, trust in professionals shows a low correlation with depressive symptoms. This suggests a need for measures to raise awareness and encourage students to seek professional help when facing mental health problems. Potential measures include promoting multimedia communication, education, and outreach by agencies, organisations, departments, Youth Unions, and Student Associations to help students develop a positive attitude towards studying and taking care of their own mental health.

Although this study provides important insights into students' mental health and their attitudes toward psychological help-seeking, several limitations should be noted. Firstly, the data were collected primarily through self-reported questionnaires, which may be subject to response bias, as students might underreport or overreport their levels of anxiety, depression, or help-seeking attitudes. Secondly, the study employed a cross-sectional design, collecting data at a single point in time, which prevents drawing causal inferences between mental health symptoms and help-seeking attitudes. Finally, the research focused on common mental health issues such as depression and anxiety, without fully addressing other mental disorders or the personal and social factors that may influence help-seeking behaviour.

These limitations suggest that future studies should consider larger and more diverse samples, employ more varied data collection methods, incorporate longitudinal designs, and broaden the scope of mental health issues examined to provide a more comprehensive understanding of the relationship between mental health and students' help-seeking attitudes.

CRediT author statement

Le Minh Cong: Overview and Theoretical framework, Appraisal, Writing - Reviewing and Finalising the manuscript; Nguyen Van Tuong: Research design and Methodology, Data processing and Management, Writing - Reviewing and Finalising the manuscript; Nguyen Hoang Anh Thu: Data collection, Quantitative analysis, Visualisation, Writing and Editing.

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COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

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The factors influencing persuasion knowledge and purchase intentions on live-streaming commerce platforms among Generation Z consumers in Vietnam: The moderating role of anticipated inaction regret

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Abstract:

In recent years, the rapid growth of live-streaming commerce in Vietnam has transformed consumer behaviour, with streamers playing a pivotal role in purchase decisions. Live streamers have had a profound impact on shaping consumers' purchasing decisions. This study explores the self-presentation behaviours of live streamers within the context of e-commerce live-streaming and examines their impact on consumers' purchase intentions. A survey of 264 Generation Z consumers in Vietnam reveals that helpful and empathetic behaviours exhibited by live streamers positively influence consumers' purchase intentions. These findings offer both theoretical contributions to digital persuasion literature and practical strategies for Vietnamese e-commerce platforms. Moreover, derogatory behaviour and exaggerated behaviour displayed during broadcasts can significantly enhance persuasion knowledge regarding consumer purchases. Additionally, anticipated inaction regret (AIR) serves as a moderating factor in the relationship between persuasion knowledge and consumers' purchase intentions. Furthermore, AIR significantly moderates this process, suggesting that emotional anticipation of regret can override consumers' scepticism driven by persuasion knowledge, thereby increasing their purchase intention. However, the use of convenience sampling and the predominance of urban respondents may limit the generalisability of the findings.

Keywords: **Generation Z, interactivity, live-streaming commerce, purchase intention, self-presentation, Vietnam.**

Classification numbers: **1.4, 2.2, 4.1**

1. Introduction

In the era of rapidly advancing digital technology, live broadcasting on e-commerce platforms has become a preferred method of online consumption for many consumers. As the information age and live technology continue to evolve, the live broadcasting industry is swiftly expanding, emerging as an innovative and popular means of disseminating information and providing entertainment to a wide audience of consumers [1]. By seamlessly integrating product display, interaction, and transactions through live-streaming, consumers are offered a convenient and engaging shopping experience that meets their informational needs regarding products. This approach, particularly with real-life images, effectively stimulates consumer behaviour [2]. Live streamers serve as key product promoters during broadcasts, leveraging their language and performance to captivate consumer attention and ignite purchasing desires [3-5]. Live commerce, as an innovative model of social e-commerce, has swiftly evolved due to its unique advantages in interactivity, intuitiveness, and entertainment [6, 7].

Live e-commerce creates an interactive, real-time environment focused on the consumer [8]. Unlike traditional e-commerce, which relies heavily on images and text, live e-commerce offers a realistic and visual presentation of product information, allowing consumers to share their opinions and comments in real time [9]. As a result, many consumers prefer exploring products and services through live e-commerce over traditional e-commerce [10, 11]. One of the standout features of live broadcast shopping is the dynamic interaction between streamers and consumers. This

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form of commerce not only emphasises product presentation but also fosters social engagement between sellers and consumers [12, 13]. However, the low barriers to entry within the live-streaming industry often result in a number of streamers who lack comprehensive product knowledge and adhere to questionable ethical standards [14]. These streamers frequently rely on strong promotional tactics like flattery and exaggeration. Research shows that in live-stream sales, persuasion language focusing on personality traits works best for boosting sales. However, logic-based approaches often have the opposite effect [15]. Furthermore, several studies have explicitly explored the impacts of advanced interactive features aimed at enhancing user engagement. These features include live chat, Q&A sessions, screen sharing, and guest appearances [16, 17]. Despite these studies, the effect of live streamers' self-expressive behaviours on consumers has not been sufficiently examined. Therefore, when examining the field of business based on e-commerce platforms, the impact of the behaviours of live streamers needs to be investigated from the perspective of individual behaviour that may influence persuasion knowledge leading to consumer purchasing behaviour. Online shopping facilitates real-time inquiries from potential buyers and provides seamless access to reviews from other customers [16-19]. This interaction may result in a sense of urgency that encourages consumers to make instantaneous purchases during the live-streaming process. However, it is crucial to consider the impact of negative emotions on consumer purchasing decisions, as they can seamlessly switch to alternative live-streaming channels or shopping platforms without incurring additional costs.

Previous research has examined different elements of live-streaming commerce, but few studies have combined self-presentation behaviours and persuasion knowledge into one complete framework. To expand this research, important findings from China, the United States, and Europe were included [3-5]. These international studies show how persuasion techniques work across cultures, and how they differently affect Generation Z's trust, scepticism, and engagement in online shopping.

Generation Z is a group of consumers shaped by the digital age, preferring to shop through online channels and exhibiting unique consumption behaviour patterns. Recently, there have been numerous studies on the impact of live-streaming on commerce platforms on the purchase intentions of Generation Z [20-23]. In Vietnam, studies have analysed the impact of online shopping activities on Generation Z [24]. Additionally, enhancing entertainment value, information quality, interactivity, peer reviews, and recommendations, as well as the characteristics of live streamers during streaming sessions, significantly influences the purchasing intentions of Generation Z in Vietnam [25]. The study revealed that heightened entertainment value, superior information quality, enhanced interactivity, positive peer evaluations, and the presence of more attractive and expert streamers significantly boost purchase intentions. Recent studies highlight the growing influence of live-streaming commerce on consumer behaviour [1, 2]. This study integrates four theoretical frameworks to analyse live streamers' influence on Generation Z consumers: (1) the Persuasion Knowledge Model [26], which examines how audiences recognise persuasion attempts; (2) E. Goffman's (1959) [27] self-presentation theory, addressing performers' identity management; (3) the Uses and Gratifications Theory [28], exploring viewer motivations; and (4) the Technology Acceptance Model, assessing platform adoption factors [29]. However, the interaction between streamers' self-presentation strategies and consumers' persuasion awareness remains understudied, particularly among Generation Z in Vietnam

This study addresses this gap by examining the moderating role of AIR. Among these factors, streamers exerted the most substantial influence, while information quality had the least impact. Perceived risk does not significantly impede purchasing intentions, indicating Generation Z's confidence in digital transactions and their readiness to accept risks in pursuit of engagement and entertainment within live-streaming commerce.

2. Literature review and hypothesis

2.1. Self-presentation

This study is theoretically anchored in self-presentation theory [27] and the Persuasion Knowledge Model [26], which together explain how streamers' behavioural performances are interpreted through consumers' persuasion knowledge and ultimately shape purchase intentions. The concept of self-presentation was initially articulated by E. Goffman (1959) [27], where he characterised social interactions as strategic performances in which individuals assume the roles of performers on a stage. He suggested that individuals leverage communication, nonverbal cues, and interpersonal dynamics to convey their identities, with the objective of fostering a positive perception and persuading others to align with their proposed initiatives, thereby enhancing collaborative engagements and achieving organisational objectives.

Subsequent research has illustrated that any attempts to manage or influence how others perceive one's behaviour, encouraging them to interpret their behaviour as congruent with one's own objectives, are incorporated within the framework of self-presentation. Hence, drawing upon extensive observations of live-streaming e-commerce and aligning with the classification of self-presentation strategies delineated by E.E. Jones, et al. (1982) [30], along with prior research regarding the behaviours that sales personnel might employ in the realm of persuasion marketing, this study classifies live streamers' self-presentation behaviours into five distinct categories: helpful behaviour, empathetic behaviour, flattering behaviour, derogatory behaviour, and exaggerated behaviour [31].

Hypothesis H1a: Helpful behaviours exhibited by live streamers are positively associated with consumers' purchase intentions.

Helpful behaviours encompass the provision of timely support and prudent guidance for consumers. For instance, live streamers may showcase product appearances, demonstrate functionalities, model clothing, and suggest suitable products according to consumers' needs during interactive live sessions. These behaviours facilitate practical shopping assistance and foster positive emotions throughout the purchasing experience [32, 33]. The helpful behaviours of live streamers can enhance consumers' comprehension of products, mitigate their apprehensions associated with online shopping, and bolster their propensity to engage in purchasing activities during the live stream. Therefore, the author propose the following hypothesis:

Hypothesis H1b: Empathetic behaviours exhibited by live streamers are positively associated with consumers' purchase intentions.

Empathetic behaviour can be defined as an individual's propensity to synchronise their cognitive and emotional frameworks with those of others, facilitating the establishment of emotional connections. In live-streaming, this behaviour is evidenced by the capacity of the live streamer to comprehend and resonate with the perspectives of consumers. The attributes of empathetic behaviour are posited to more effectively address the emotional requirements of viewers throughout the shopping process, thereby enhancing their overall shopping experience [34, 35].

Hypothesis H1c: Flattering behaviours exhibited by live streamers are negatively associated with consumers' purchase intentions.

The behaviour of flattery is associated with behaviours that augment the status or superficial qualities of customers for the purpose of eliciting their approval. Individuals frequently engage in flattery to secure favor or to align with the expectations and interests of live streamers [36, 37]. Marketers commonly utilise this strategy to cultivate a favourable impression; however, it may concurrently compromise consumers' perceptions of authenticity, resulting in adverse attitudes towards marketers and their offerings [38, 39]. Generation Z's strong digital literacy and regular exposure to influencer marketing make them more capable of recognising insincere flattery. As a result, their trust may decrease, leading to lower purchase intentions [38].

Hypothesis H1d: Derogatory behaviours exhibited by live streamers are negatively associated with consumers' purchase intentions.

The act of denigration entails the purposeful comparison and disparagement of analogous products and fellow live streamers. Observations of live-streaming broadcasts reveal that certain streamers intentionally seek to undermine their competitors or rival products in order to manipulate consumer emotions and bolster their own reputation [5]. While denigration may facilitate the objective of self-promotion, this adverse behaviour has the potential to reduce consumer satisfaction and subsequently impact their overall engagement with the brand. A decline in consumer enjoyment and affinity may result in an increased reluctance to procure products during the live-streaming experience. As a generation that highly values transparency and authenticity, Generation Z is likely to perceive derogatory behaviour as manipulative or unprofessional. This perception may consequently weaken their emotional engagement with both the streamer and the associated brand [14].

Hypothesis H1e: Exaggerated behaviours exhibited by live streamers are negatively associated with consumers' purchase intentions.

Exaggerated behaviour pertains to the embellishment of product features and the overstating of an individual's capabilities. Streamers frequently present products in an overly complimentary manner, magnifying their benefits; some even assign themselves unrealistic titles such as "expert" to attract consumer interest. Previous studies have suggested that consumers often possess negative perceptions toward overly laudatory product assertions [40]. As the degree of implausibility in the commendatory conduct escalates, consumers' perceptions of the product decline, leading to a reduced propensity to accept the product [41]. Given the ease of online fact-checking in today's digital environment, Generation Z consumers are more likely to react negatively to exaggerated claims. Such statements are often viewed as deceptive or insincere, ultimately diminishing the effectiveness of persuasion communication [40, 41].

2.2. Persuasion knowledge

Previous research has not comprehensively analysed the impact of negative affective states on consumers' evaluative processes regarding choices. Nevertheless, contemporary consumers encounter informational constraints from diverse sources, culminating in phenomena of information overload [42]. Such an overload amplifies consumers' sensitivity and vigilance towards marketing manipulations, thereby complicating the persuasion process. Consequently, it is imperative to focus on the mechanisms that activate and influence persuasion knowledge, a detrimental cognitive state, within the framework of live-stream e-commerce. The construct of persuasion knowledge was initially introduced by M. Friestad, et al. (1994) [26] and pertains to consumers' cognitions and beliefs concerning marketers' persuasion objectives and endeavours, as well as their foundational motives and strategies, which encompass an individual's capacity to identify and respond to persuasion intentions. Subsequent studies have demonstrated that persuasion knowledge encompasses consumers' understanding and beliefs regarding the objectives, intentions, underlying motives, and sales strategies employed in persuasion, incorporating both rational and emotional evaluations [43-45].

Hypothesis H2a: Helpful behaviours exhibited by live streamers are negatively associated with the activation of consumers' persuasion knowledge.

To broaden the theoretical framework, the research integrates the Uses and Gratifications Theory [28] and the Technology Acceptance Model (TAM) [29], which complement the Persuasion Knowledge Model by explaining how consumers derive value from live-streaming and adopt new technologies. The streamer serves as a crucial information provider for consumers looking for in-depth details about products. Their role encompasses conveying information and promoting products through language and emotional appeal during the process of interpretation and interaction. The professionalism and credibility of the streamer are contingent upon their ability to aid customers in understanding the product and addressing inquiries with their expertise [31]. Consequently, it is proposed that the helpful behaviour of the streamer may mitigate the effectiveness of activating persuasion knowledge.

Hypothesis H2b: Empathetic behaviours exhibited by live streamers are negatively associated with the activation of consumers' persuasion knowledge.

Empathetic behaviour seeks to establish emotional resonance between consumers and streamers, thereby fostering a sense of intimacy and reorienting the emphasis from sales objectives to mutual interests and emotions. This reallocation of attention is expected to disrupt consumers' assumptions regarding the underlying motives and sales strategies of the streamer, consequently reducing the activation of persuasion knowledge. Moreover, empirical studies on fan effects have suggested that empathetic interactions between internet celebrities and their audiences can fortify fans' sense of attachment and augment their trust [46]. It is proposed that empathetic actions demonstrated by streamers attenuate consumers' resistance and scepticism by redirecting their focus and enhancing trust, consequently reducing the potential to activate persuasion cognition.

Hypothesis H2c: Flattering behaviours exhibited by live streamers are positively associated with the activation of consumers' persuasion knowledge.

Flattery is utilised by individuals to foster favourable interpersonal relationships and obtain corresponding rewards. In specific contexts, the act of flattery may enhance the enjoyment experienced by others. Nevertheless, research indicates that, in comparison to praise rendered post-purchase, flattery administered by marketers pre-purchase is more likely to result in a diminished assessment of attitudes towards products and services [47]. Live-streaming e-commerce embodies a persuasion context wherein streamers possess pronounced self-serving motives. Inappropriate flattery amplifies consumers' scepticism regarding a marketer's intentions, engendering doubts about the authenticity of the products. This results in negative emotions towards marketers and a refusal to follow recommendations. Consequently, we propose that the flattery exhibited by live streamers may activate a higher level of persuasion knowledge.

Hypothesis H2d: Derogatory behaviours exhibited by live streamers are positively associated with the activation of consumers' persuasion knowledge.

The act of derogatory behaviour towards peers or analogous products accentuates the merits of one's own offering; however, this practice is intrinsically subjective and necessitates considerable scrutiny. Consumers generally anticipate that live streamers, as critical sources of information, will furnish objective data and recommendations. Nevertheless, such derogatory behaviour undermines the consumers' perception of objectivity. Furthermore, this conduct by live streamers may be interpreted as a calculated endeavour to manipulate public opinion, thereby intensifying consumers' vigilance. Consequently, it is posited that the derogatory behaviour of live streamers may elicit an elevated level of persuasion knowledge.

Hypothesis H2e: Exaggerated behaviours exhibited by live streamers are positively associated with the activation of consumers' persuasion knowledge.

Excessive praise of products or the elevation of their status often carries a clear intention of advertising, making persuasion signals more discernible and prompting consumers to utilise persuasion knowledge to counter marketing efforts [47]. Therefore, the exaggerated behaviour of live streamers may activate higher levels of persuasion knowledge. Based on this reasoning, the present study proposes the following hypothesis:

Consumers regard the sources and information presented in advertisements as reliable; however, they also become aware of underlying manipulative intentions, such as attempts to elicit sympathy for donations or incite feelings of guilt. They may feel manipulated or even angered by inappropriate calls to action within advertisements, leading to negative attitudes towards both the advertisements and the brand [47].

Hypothesis H3: Consumers' persuasion knowledge is negatively associated with their purchase intentions.

In live-streaming e-commerce, streamers' diverse self-presentation is expected to activate consumers' persuasion knowledge, leading to increased defensiveness and scepticism about the streamers' motives and strategies, ultimately reducing alignment with the live stream [48]. Consequently, consumers are less likely to embrace the streaming channel and the showcased products, thus decreasing their susceptibility to persuasion attempts to make purchases. Therefore, it can be concluded that in a shopping environment enabled by live-streaming, the activation of an individual's persuasion knowledge causes consumers to adopt a more defensive and sceptical stance towards the motives and strategies of the live streamers. This dynamic lowers the likelihood of consumers being swayed to purchase the products and services endorsed by the streamers.

In this regard, the following hypothesis is proposed:

2.3. Anticipated inaction regret

In situations where decision-making is uncertain, the anticipation of regret can play a significant role in shaping an individual's ultimate choice [49]. The notion of anticipated regret can be categorised into two forms: anticipated regret due to inaction and anticipated regret due to action. Anticipated regret from inaction refers to the regret that consumers foresee experiencing in the future for not taking action now. In contrast, anticipated regret about action is the regret that consumers expect to feel in the future when they act now [50]. Research indicates that in the short term, people experience stronger regret for actions taken than for those not taken. Over the long term, the regret for missed opportunities tends to be more significant [51].

Hypothesis H4: Anticipated inaction regret positively moderates the relationship between persuasion knowledge and purchase intentions.

The emotional experience of regret associated with inaction is a potent affective response that can influence individual decision-making processes [52]. This research posits that such regret may mitigate adverse effects of persuasion information on consumers' intentions to purchase during live-streaming events. In particular, amidst diverse promotional stimuli, consumers are likely to experience a sense of regret for failing to act while engaged with a live stream [44]. Even when individuals become aware of the persuasion intentions of the content creator, they may prioritise the avoidance of regret over their inherent scepticism regarding the persuasion content. Therefore, consumers might set aside their doubts and opposition to the streamer's persuasion methods, ultimately forming a strong intention to purchase.

Consequently, the following hypothesis is proposed:

2.4. Proposed model

To comprehensively examine the mechanisms by which the self-presentation behaviours of live streamers influence consumer behaviour within the context of e-commerce platforms, particularly regarding the monitoring of live broadcasts for purchasing decisions, it is imperative to base this inquiry on the empirical findings of S. Song, et al. (2024) [31]. The research model in Fig. 1 shows the relationship between self-presentation behaviour, persuasion knowledge (PK), anticipated inaction regret (AIR), and purchase intention (PI).

The self-presentation behaviour scale was based on the studies of R.B. Cialdini, et al. (1980) [53], E.E. Jones, et al. (1982) [30], H.M. Liraz, et al. (2013) [54], and H.G.M. Vossen, et al. (2016) [55], consisting of 5 behaviour scales (each behaviour includes 3 measurement items). The persuasion knowledge (PK) scale was based on the research of M.C. Campbell, et al. (2000) [47], consisting of 4 measurement items. The anticipated inaction regret (AIR) scale regarding inaction was based on V.M. Patrick, et al. (2009) [56], including 4 measurement items. The purchase intention scale was based on the research of V.A. Zeithaml, et al. (1996) [57], consisting of 3 measurement items.

3. Methods

The survey was conducted from 1 November, 2024, to 31 December, 2024. According to J. Hair, et al. (2009) [58], the minimum sample size required is five times more than the number of research indicators. Therefore, this study needs a minimum sample size of 260. This study employed convenience sampling, a non-probability sampling technique that enabled rapid data collection and achieved an adequate sample size within the planned timeframe; however, it introduces potential selection bias and restricts the generalisability of the findings. Data were collected via an online survey using Google Forms, employing a non-probability convenience sampling technique. The survey targeted Generation Z consumers in Vietnam, with 264 valid responses analysed. The collected data were analysed using statistical software such as SPSS 20 and AMOS 22. Each variable

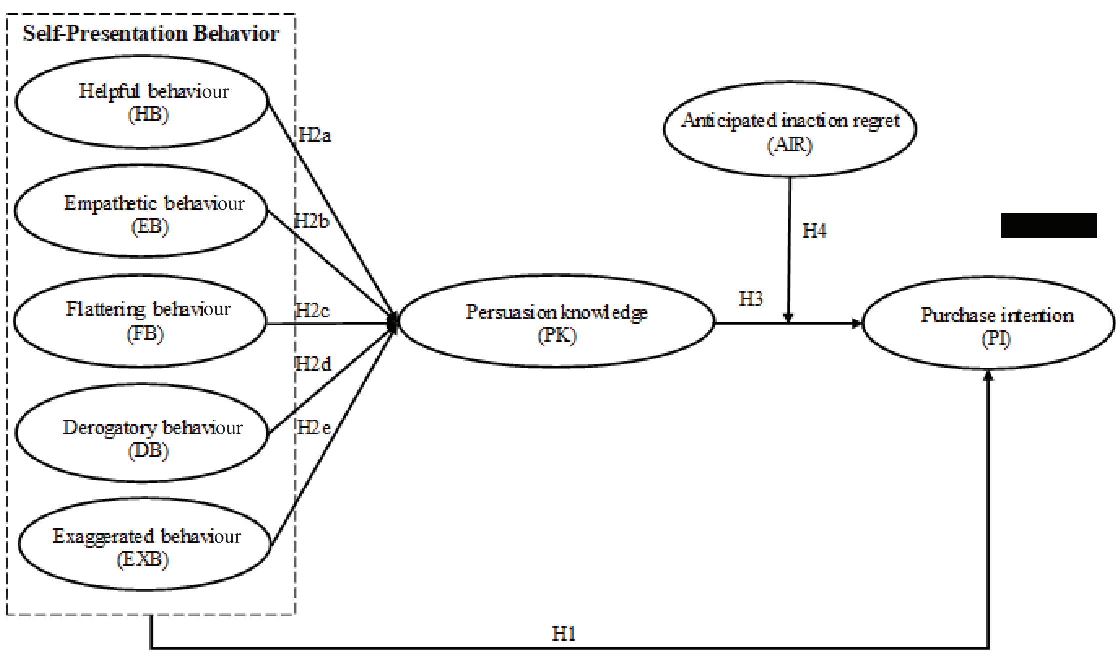

Fig. 1. The research model.

was measured using a five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree), based on a literature review.

The data analysis process includes descriptive statistical analysis, assessing the reliability of the measurement scale with Cronbach's alpha, exploratory factor analysis (EFA) using SPSS software. Next, confirmatory factor analysis (CFA), testing for convergent and discriminant validity of the scales conducted using AMOS software. Structural equation modelling (SEM) analysis is used to identify and test the relationships between variables in a theoretical model. Furthermore, it assesses the role of persuasion knowledge of live streamers as a mediating factor between self-presentation behaviour and consumers' purchase intentions, as well as examining moderating factors within the model.

4. Results

4.1. Data description

The results obtained are as follows: The total number of results is 268 participants; after removing invalid participants, the number of valid participants collected is 264 participants, which were included in the official quantitative analysis study. The survey included both male and female respondents from Generation Z. Out of 264 participants, 65 were male (24.6%) and 199 were female (75.4%). Most of the participants had College/University education, accounting for 88.3%, and the majority were students and workers with an income of less than 5 million VND. Most of the survey results were from Ho Chi Minh city and Hanoi (Table 1).

4.2. Validity and reliability testing of instruments

4.2.1. Testing the research measurement scale

The results of the reliability testing of the measurement scales for the factors using Cronbach's alpha coefficients indicate that all Cronbach's alpha coefficients are greater than 0.7 (Table 2), and the correlation coefficients of the observed variables within the factors are all greater than 0.3. This shows that the research is appropriate and reliable, with no variables excluded from the model. As a result, all the measurement scales achieve high reliability, meeting the conditions to proceed to the next analysis steps.

4.2.2. Exploratory factor analysis

A total of 8 factors along with 26 observed variables were proposed in the research model. The reliability check using Cronbach's alpha for the measurement scales was conducted, and all observed variables

Table 1. Description of the research sample.

Variables (N=264)	Items	Frequency	Percentage (%)
Gender	Male	65	24.6
	Female	199	75.4
Education	High school	15	5.7
	College/University	233	88.3
	Postgraduate	16	6.1
Occupation	Student	232	87.9
	Civil servant	8	3.0
	Office worker	24	9.1
Income	Less than 5 million VND	163	61.7
	From 5 to less than 10 million VND	68	25.8
	From 10 to less than 15 million VND	18	6.8
	From 15 to less than 20 million VND	10	3.8
	More than 20 million VND	5	1.9
Area	Ho Chi Minh city	168	63.6
	Hanoi	80	30.3
	Da Nang	10	3.8
	Other	6	2.3

Source: The author's survey data 2024.

Table 2. Results of Cronbach's alpha testing for the measurement scales.

Constructs	Items	Corrected item-total correlation	Cronbach's alpha	Sources
Helpful behaviour (HB)	HB1	0.568	0.753	[54]
	HB2	0.571		
	HB3	0.606		
Empathetic behaviour (EB)	EB1	0.621	0.744	[55]
	EB2	0.578		
	EB3	0.514		
Flattering behaviour (FB)	FB1	0.741	0.839	[30]
	FB2	0.736		
	FB3	0.636		
Derogatory behaviour (DB)	DB1	0.718	0.849	[53]
	DB2	0.735		
	DB3	0.700		
Exaggerated behaviour (EXB)	EXB1	0.762	0.878	[53]
	EXB2	0.785		
	EXB3	0.747		
Persuasion knowledge (PK)	PK1	0.747	0.872	[47]
	PK2	0.712		
	PK3	0.717		
	PK4	0.728		
Purchase intention (PI)	PI1	0.668	0.796	[57]
	PI2	0.619		
	PI3	0.630		
Anticipated inaction regret (AIR)	AIR1	0.778	0.881	[56]
	AIR2	0.727		
	AIR3	0.728		
	AIR4	0.733		

Source: The author's survey data 2024.

were included to evaluate the correlation among these variables as well as the suitability of the survey variables.

The first iteration of EFA was conducted with independent variables: the KMO value was 0.826 (>0.5) and the Bartlett's Sig. value was 0.000 (<0.05), indicating that the data was entirely suitable for EFA analysis. Five factors were extracted, with the criterion of Eigenvalue >1, and the cumulative total variance extracted reached 74.066% (>50%), suggesting that the independent observed variables are significantly correlated with each other and account for 74.066% of the variance in the data of the observed variables participating in EFA.

The second iteration of EFA was conducted with mediating variables: the KMO value was 0.812 (>0.5) and the Bartlett's Sig. value was 0.000 (<0.05), demonstrating that the data was entirely suitable for EFA analysis. One factor was extracted, with the criterion of Eigenvalue >1, and the cumulative total variance extracted reached 72.310% (>50%), indicating that the mediating observed variables are significantly correlated with each other and account for 72.310% of the variance in the data of the observed variables participating in EFA.

The third iteration of EFA was conducted with dependent variables: the KMO value was 0.706 (>0.5) and the Bartlett's Sig. value was 0.000 (<0.05), signifying that the data was entirely suitable for EFA analysis. One factor was extracted, with the criterion of Eigenvalue >1, and the cumulative total variance extracted reached 71.022% (>50%), suggesting that the dependent observed variables are significantly correlated with each other and account for 71.022% of the variance in the data of the observed variables participating in EFA. The detailed results of the factor loadings from all three EFA iterations are summarised in Table 3.

Table 3. Results of the factor rotation matrix.

Constructs	Items	Components						
		1	*2*	*3*	*4*	*5*	*6*	*7*
Exploratory factor analysis for independent variables								
Exaggerated behaviour (EXB)	EXB2	0.952						
	EXB1	0.874						
	EXB3	0.863						
Derogatory behaviour (DB)	DB3		0.912					
	DB1		0.859					
	DB2		0.848					
Flattering behaviour (FB)	FB3			0.872				
	FB2			0.848				
	FB1			0.847				
Helpful behaviour (HB)	HB3				0.836			
	HB2				0.836			
	HB1				0.754			
Empathetic behaviour (EB)	EB2					0.877		
	EB1					0.835		
	EB3					0.678		
Eigenvalue index		4.929	2.292	1.401	1.256	1.232		
Total variance explained (%)		74.066						
Exploratory factor analysis for mediator variables								
Persuasion knowledge (PK)	PK1						0.865	
	PK4						0.851	
	PK3						0.845	
	PK2						0.841	
Eigenvalue index		2.892						
Total variance explained (%)		72.310						
Exploratory factor analysis for dependent variables								
Purchase intention (PI)	PI1							0.861
	PI3							0.837
	PI2							0.829
Eigenvalue index		2.131						
Total variance explained (%)		71.022						

Source: The author's survey data 2024.

4.2.3. Confirmatory factor analysis

According to the test results, the CMIN/df index is 1.470≤3, which is considered acceptable; the CFI index is 0.967>0.95, which is regarded as very good; and the RMSEA index is 0.042≤0.08, which is also considered very good. Thus, it can be observed that the observed variables possess convergent validity concerning the representative variables, while all variables exhibit discriminant validity with no signs of autocorrelation. The standardised results of the confirmatory factor analysis are illustrated in Fig. 2.

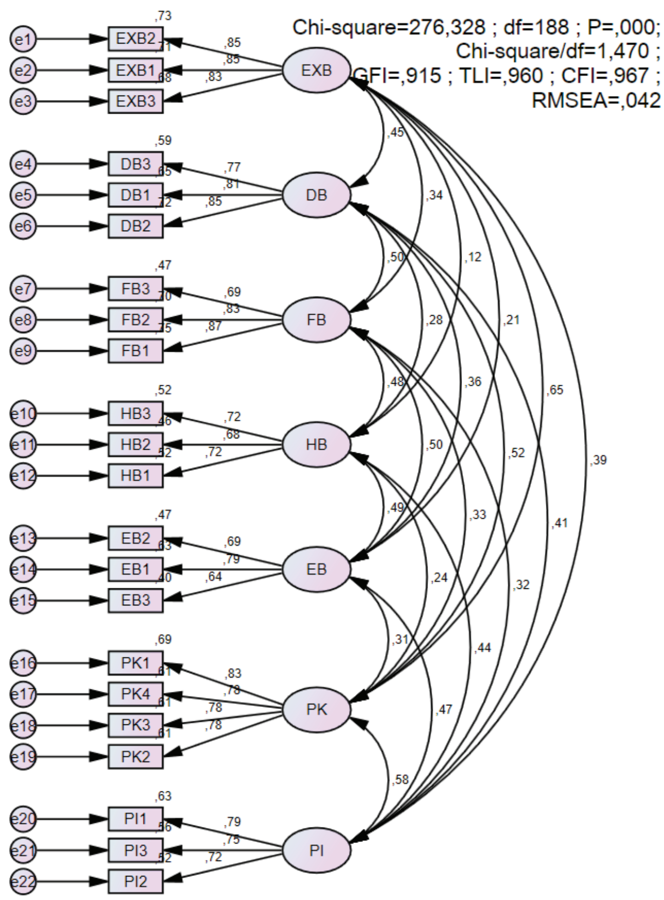

Fig. 2. Results of the confirmatory factor analysis. Source: The author's survey data 2024.

4.2.4. Analysis of the structural model using structural equation modelling

Based on the results of the CFA, the author developed a SEM and conducted the necessary verification steps. The results of the structural model estimation are shown in Fig. 3, and the corresponding path coefficients and hypothesis testing results are summarised in Table 4.

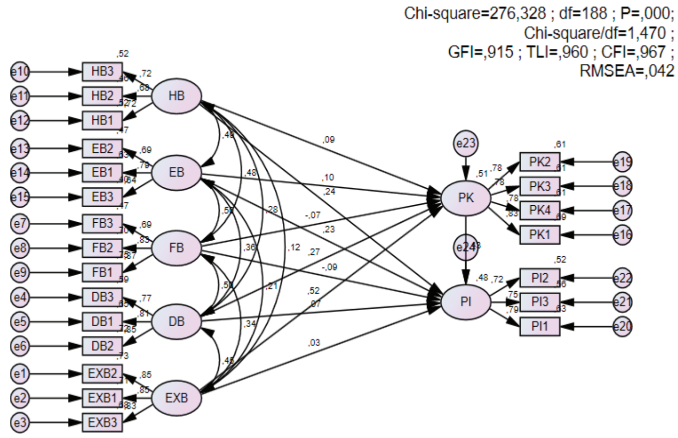

Fig. 3. Results of the structural equation modelling structural model verification. Source: The author's survey data 2024.

The hypotheses H2a, H2b, H2c, H1c, H1d, and H1e have been rejected (p-value>0.05). The remaining hypotheses all present a p-value<0.05, indicating that the impact of the factors is statistically significant, accepted at a confidence level of 95% (p-value<0.05). While some hypotheses (H1c, H1d, H1e, H2a, H2b, H2c) were not statistically supported, these findings are insightful in understanding the evolving mindset of Generation Z. Their resistance to negative self-presentation behaviours could reflect a broader trend of increased scepticism toward manipulative digital marketing tactics [44].

The results confirm that the square roots of AVEs (diagonal values) exceed the inter-construct correlations, satisfying the criteria of C. Fornell, et al. (1981) [59]. Additionally, all HTMT ratios were below the threshold of 0.90, further supporting discriminant validity [60]. These results are summarised in Table 5.

4.2.5. Analysis of the mediating role of persuasion knowledge

To examine the existence of the mediating variable PK, Bootstrap with a sample size N=1000 was utilised, with 95% serving as the confidence level for the bootstrap test. These findings on mediation effects are detailed in Table 6.

Purchase intentions (PI) mediated by Persuasion knowledge (PK) through Helpful behaviour (HB): The analysis reveals a direct effect of 0.244 (p=0.006), which is significant at the 5% level (p<0.05). The indirect effect is 0.038 (p=0.269), which is not significant. This suggests a full mediation effect where Helpful behaviour significantly impacts Purchase Intentions through Persuasion knowledge. While

Table 4. Results of the structural equation modelling.

Path coefficients	Estimate	Standard error	Critical ratio	P-value	Hypothesis	Evaluation
Persuasion knowledge <--- Helpful behaviour	0.11	0.096	1.148	0.251	H2a	Rejected
Persuasion knowledge <--- Empathetic behaviour	0.118	0.098	1.204	0.229	H2b	Rejected
Persuasion knowledge <--- Flattering behaviour	-0.075	0.089	-0.841	0.400	H2c	Rejected
Persuasion knowledge <--- Derogatory behaviour	0.262	0.074	3.533	***	H2d	Accepted
Persuasion knowledge <--- Exaggerated behaviour	0.45	0.061	7.417	***	H2e	Accepted
Purchase intentions <--- Persuasion knowledge	0.389	0.09	4.322	***	H3	Accepted
Purchase intentions <--- Helpful behaviour	0.273	0.099	2.753	0.006	H1a	Accepted
Purchase intentions <--- Empathetic behaviour	0.263	0.101	2.606	0.009	H1b	Accepted
Purchase intentions <--- Flattering behaviour	-0.095	0.09	-1.056	0.291	H1c	Rejected
Purchase intentions <--- Derogatory behaviour	0.06	0.076	0.784	0.433	H1d	Rejected
Purchase intentions <--- Exaggerated behaviour	0.026	0.07	0.374	0.708	H1e	Rejected

Source: The author's survey data 2024.

Table 5. Fornell-Larcker matrix.

Constructs	HB	EB	FB	DB	EXB	PK	PI	AI
HB	**0.82**							
EB	0.41	**0.78**						
FB	0.12	0.09	**0.84**					
DB	0.08	0.05	0.23	**0.86**				
EXB	0.07	0.04	0.25	0.52	**0.88**			
PK	0.11	0.12	0.08	0.26	0.45	**0.83**		
PI	0.27	0.26	0.10	0.06	0.03	0.39	**0.81**	
AIR	0.05	0.04	0.07	0.09	0.12	0.18	0.05	**0.85**

Helpful behaviour (HB); Empathetic behaviour (EB); Flattering behaviour (FB); Derogatory behaviour (DB); Exaggerated behaviour (EXB); Persuasion knowledge (PK); Purchase intention (PI); Anticipated inaction regret (AIR). Source: The author's survey data 2024.

Table 6. Results of the impacts of the mediating variable.

Path coefficients	Direct		Indirect		Type of mediation
	S.ES	*Sig*	*S.ES*	*Sig*	
PI <---PK<--- HB	0.244	0.006	0.038	0.269	Full mediation
PI <---PK<--- EB	0.233	0.009	0.041	0.228	Full mediation
PI <---PK<--- FB	-0.094	0.291	-0.029	0.387	No effect
PI <---PK<--- DB	0.067	0.443	0.113	0.004	Partial mediation
PI <---PK<--- EXB	0.033	0.708	0.222	0.001	Partial mediation

Helpful behaviour (HB); Empathetic behaviour (EB); Flattering behaviour (FB); Derogatory behaviour (DB); Exaggerated behaviour (EXB); Persuasion knowledge (PK); Purchase intention (PI); Anticipated inaction regret (AIR). Source: The author's survey data 2024.

Helpful behaviour had a direct positive effect on PI (β=0.244, p=0.006), its indirect effect via Persuasion knowledge was nonsignificant (β=0.038, p=0.269). Thus, Persuasion knowledge does not mediate this relationship, suggesting other unexplored mechanisms.

Purchase intentions mediated by Persuasion knowledge through Empathetic behaviour: The study finds a direct effect of 0.233 (p=0.009), significant at the 5% level (p<0.05), and an indirect effect of 0.041 (p=0.228), which is not significant. This pattern suggests full mediation, where Empathetic behaviour significantly impacts Purchase intentions through Persuasion knowledge. Similar to Helpful behaviour, the significant direct effect and non-significant indirect effect indicate that Empathetic behaviour influences Purchase intentions mainly through the mediator, Persuasion knowledge.

Purchase intentions mediated by Persuasion knowledge through Flattering behaviour: The direct effect is -0.094 (p=0.291), and the indirect effect is -0.029 (p=0.387); neither is significant. Consequently, Flattering behaviour does not have a significant impact on Purchase intentions either directly or indirectly through Persuasion knowledge. This indicates no mediation effect, suggesting that Flattering behaviour is ineffective in altering Purchase intentions.

Purchase intentions mediated by Persuasion knowledge through Derogatory behaviour: The analysis shows a direct effect of 0.067 (p=0.443) and an indirect effect of 0.113 (p=0.004), which is significant at the 5% level (p<0.05). This indicates partial mediation, where Derogatory behaviour significantly impacts Purchase intentions indirectly through Persuasion knowledge. The non-significant direct effect suggests that the influence of Derogatory behaviour on Purchase intentions is primarily mediated by Persuasion knowledge.

Purchase intentions mediated by Persuasion knowledge through Exaggerated behaviour: The results indicate a direct effect of 0.033 (p=0.708) and a significant indirect effect of 0.222 (p=0.001), significant at the 5% level (p<0.05). This indicates partial mediation, suggesting that Exaggerated behaviour significantly impacts Purchase intentions indirectly through Persuasion knowledge. The non-significant direct effect confirms that the influence of Exaggerated behaviour on Purchase intentions is mediated by Persuasion knowledge. The analysis confirms that AIR weakens the negative impact of persuasion knowledge on purchase intentions.

4.2.6. Analysis of moderating variables

The analysis explores the moderating effects of the anticipated inaction regret (AIR) on the relationships between persuasion knowledge (PK), purchase intentions (PI), and interaction (INT). The results of the model estimation are visualised in Fig. 4, and the corresponding path coefficients and significance levels are presented in Table 7.

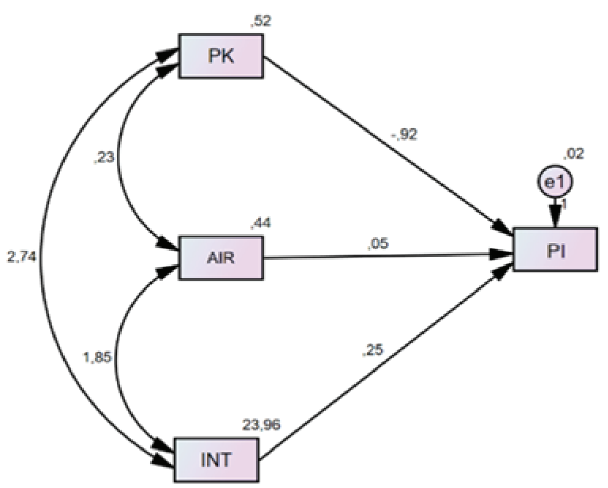

Fig. 4. Results of the moderating variable analysis. Source: The author's survey data 2024.

Table 7. Results of the effects of the moderating variable.

Path coefficients			Estimate	Standard error	Critical ratio	P-value
PI	<---	PK	-.919	.021	-43.630	***
PI	<---	AIR	.047	.018	2.662	.008
PI	<---	INT	.248	.003	74.959	***

Persuasion knowledge (PK); Purchase intention (PI); Anticipated inaction regret (AIR); Interaction (INT). Source: The author's survey data 2024.

The results show a strong negative relationship between persuasion knowledge (PK) and purchase intentions (PI), with a path coefficient of -0.919, a critical ratio (C.R.) of -43.630, and a highly significant p-value (*). This means that when consumers are more aware of persuasion tactics, they are less likely to make a purchase. However, AIR appears to moderate this relationship. The findings support Hypothesis H4, suggesting that AIR significantly reduces the negative effect of PK on PI. In other words, the fear of missing out or feeling regret for not taking action can be stronger than scepticism, leading consumers to still consider purchasing despite their persuasion knowledge (β=-0.919, p<0.001). AIR shows a positive and significant effect on PI, with a path coefficient of 0.047, C.R.=2.662, and p=0.008. This indicates that as consumers anticipate regret from not acting, their intention to purchase slightly increases. While the effect is smaller, it is still statistically meaningful. Additionally, interaction (INT) has a strong positive effect on PI (β=0.248, C.R.=74.959, p<0.001), showing that higher levels of interaction significantly boost consumers' purchase intentions.

In conclusion, the analysis reveals that persuasion knowledge reduces AIR, whereas purchase intentions and interaction are positively associated with it. These findings offer important insights into consumer behaviour, highlighting how scepticism, motivation to act, and engagement collectively influence the experience of anticipated regret in decision-making.

5. Discussion

This study's findings reveal nuanced dynamics between streamers' self-presentation behaviours and Generation Z consumers' purchase intentions in Vietnam's live-streaming commerce context. This finding demonstrates that AIR moderates the indirect path from streamer self-presentation to purchase intention through persuasion knowledge. It highlights how emotional motivators, especially anticipated regret or fear of missing out, may suppress cognitive scepticism. This aligns with dual-process theories in consumer psychology, which suggest that affective responses can dominate rational evaluations in emotionally charged or impulsive purchase contexts. While helpful and empathetic behaviours positively influenced purchase intentions as hypothesised, the non-significant effects of flattering, derogatory, and exaggerated behaviours (H1c, H1d, H1e) warrant deeper examination. Having grown up in a media landscape saturated with influencer marketing, Generation Z consumers tend to exhibit heightened scepticism toward overtly promotional or inauthentic messaging [44, 61]. This suggests Vietnamese Generation Z consumers are more discerning than traditional consumer segments, potentially requiring more subtle persuasion approaches. The moderating role of anticipated inaction regret (H4) proved particularly insightful. Vietnamese consumers' strong aversion to "missing out" appears to override their persuasion knowledge, explaining why even sceptical viewers might still purchase during high-pressure live streams. This behaviour aligns with findings in behavioural economics, which show that anticipated regret can prompt impulsive or risk-acceptant decisions [49, 56].

The useful behaviour and empathetic behaviour of live streamers during the streaming process can positively activate higher purchase intentions among consumers, a result that aligns with the findings of S. Song, et al. (2024) [31]. Behaviours characterised by flattering behaviour, derogatory behaviour, and exaggerated behaviour do not promote purchase intentions among consumers. Future studies should re-examine how streamers' negative behaviours impact purchase intentions. The conceptual framework effectively anticipated the purchasing intentions of Generation Z based on persuasion knowledge. Academics, researchers, and market analysts can derive insights from these findings, which suggest that Generation Z is susceptible to influence in their consumer behaviour while engaging with live-streaming on e-commerce platforms. Additional variables that contribute to the predictive capacity of the model's persuasion knowledge enable market analysts to tailor self-presentation strategies that align with the distinctive preferences of Generation Z. The results indicate substantial applicability in altering Generation Z's attitudes towards their purchasing intentions on online streaming platforms.

The conduct of derogatory behaviour and exaggerated behaviour demonstrated by live streamers during broadcasts on online streaming platforms can facilitate the activation of elevated levels of persuasion knowledge pertaining to consumer purchasing decisions. In contrast, helpful, empathetic, and flattering behaviours did not significantly activate persuasion knowledge. Furthermore, the research examines persuasion knowledge as a mediating factor in the relationship between self-presentation behaviours and consumers' purchase intentions. Regret for inaction plays a moderating role in the relationship between persuasion knowledge and consumers' purchase intentions.

Marketers should prioritise helpful and empathetic behaviours in live streams to enhance purchase intentions. Conversely, exaggerated or derogatory behaviours should be avoided, as they trigger persuasion knowledge. Platforms can leverage these insights to train streamers and design interactive features that minimise consumer scepticism. This study offers critical managerial insights for live-streaming commerce stakeholders. Platforms should invest in certifying streamers' ethical promotion skills, emphasising authentic product demonstrations over exaggerated claims. Real-time AI analytics (e.g., sentiment tracking of live chats) can help brands detect consumer scepticism and dynamically adjust presentation styles. Platform designers could mitigate persuasion knowledge activation by integrating real-time peer review pop-ups and transparency badges for sponsored content. Future research should explore cultural variations in persuasion knowledge activation through cross-market comparisons, and employ neuroscientific methods like eye-tracking to decode real-time cognitive responses to streamer behaviours. The findings suggest that live-streaming platforms may consider real-time sentiment analysis tools powered by machine learning and natural language processing (NLP) to detect and respond to viewers' emotional reactions. This approach would enable streamers to dynamically adjust their content and interaction styles based on audience sentiment.

For practitioners, the author recommends training streamers to balance persuasion with authenticity while employing real-time analytics to monitor consumer reactions, coupled with platform designs that strategically highlight peer reviews to mitigate persuasion knowledge effects. This study also propose the development of comprehensive training programs for streamers, focusing on ethical persuasion techniques. These programs could include guidelines on transparent communication, responsible use of urgency appeals, effective storytelling strategies, and maintaining authenticity to build trust with audiences. This study examines the influence of five distinct self-presentation behaviours exhibited by livestreamers on persuasion knowledge and consumer purchase intentions. The investigation encountered several limitations and challenges. Significantly, the sample is exclusively comprised of Generation Z individuals. The article offers theoretical insights pertinent to platforms and enterprises participating in e-commerce live-streaming. This presents a novel framework for comprehensively understanding the cognitive and emotional states of consumers in the context of live-streaming. Such insights may facilitate enhancements in consumer engagement and the innovation of services, thereby contributing to the sustainable development of this emerging consumption paradigm. Numerous empirical investigations have examined the influence of characteristics inherent to live streamers on consumer purchasing behaviour. The live-streaming modality enhances authenticity, visualisation, and interactivity, thereby mitigating the constraints associated with conventional online shopping, and significantly impacting consumer purchase intentions [62, 63]. As a result, forthcoming research may enhance comprehension of the effects of live streamers on consumer behaviour by exploring additional behavioural variables such as impulsive buying behaviour [64], or by employing the stimulus-organism-response (SOR) framework [65] alongside theories of uses and gratifications, perceived network size, perceptions of digital celebrities, and shopping orientations. A key limitation of this study stems from the use of convenience sampling, a non-probability technique. Although this approach enabled rapid data collection and yielded an adequate sample size (n=264) within the designated timeframe, it resulted in an over-representation of urban, female, and university-educated respondents, primarily from Ho Chi Minh City (63.6%) and Hanoi (30.3%). Consequently, the relatively high tolerance for exaggerated and derogatory streamer behaviours and the pronounced moderating effect of anticipated inaction regret observed in this study may be particularly characteristic of digitally native, urban Generation Z consumers. Therefore, while the findings are robust within the sampled population, caution should be exercised when generalising the results to rural Generation Z consumers or other age groups in Vietnam. Future research endeavours might investigate additional variables and the variances that affect these adverse psychological mechanisms to fortify the theoretical framework. These results contribute to the ongoing discourse on Generation Z's cognitive responses to digital persuasion. The rejection of hypotheses concerning flattery, derogation, and exaggeration suggests that Generation Z consumers in Vietnam are not easily influenced by traditional or aggressive persuasion tactics. Instead, authenticity, emotional resonance, and interactive communication appear to be more impactful [31]. Moreover, the moderating role of AIR confirms that emotional mechanisms - such as fear of missing out (FOMO) - can override cognitive scepticism, driving purchase intentions even when persuasion knowledge is activated [49, 56]. Additionally, the author suggests the cautious use of AIR-based prompts, such as countdown timers or low-stock notifications. However, it is crucial that these tools are applied responsibly to avoid emotionally manipulating consumers.

6. Conclusions

Although convenience sampling offered practical advantages, the over-representation of urban, female, and highly educated respondents from major cities limits the generalisability of the present findings to the wider and more diverse Vietnamese Generation Z population. To address this, future research should: (1) employ stratified sampling encompassing both urban and rural populations to better represent Vietnam's socioeconomic diversity; (2) incorporate behavioural data (e.g., purchase records, engagement metrics) to complement self-reported measures; and (3) conduct cross-cultural comparisons with other Southeast Asian markets. These methodological improvements would enhance the validity and applicability of the findings across different demographic and cultural contexts.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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Consumer attitudes and intentions toward safe pork in a frontier market: A theory of planned behaviour analysis

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Abstract:

Growing food safety awareness in Vietnam's urbanising regions has heightened interest in safe pork consumption, yet the behavioural drivers remain underexamined. This study employs the theory of planned behaviour (TPB) to explore the factors shaping safe pork adoption among consumers in Gia Lam commune, a frontier market. Survey findings indicate that attitude most strongly influences purchase intention, followed by subjective norms and perceived behavioural control, with intention serving as a key predictor of purchase behaviour. These results underscore the primacy of health-driven motivations moderated by access limitations and provide a fresh application of the theory in an emerging context. The research offers insights for public health initiatives and food labelling strategies, identifying critical leverage points for producers and policymakers to promote safe pork uptake while highlighting the need for broader investigations across Vietnam's diverse markets.

Keywords: **consumer behaviour, food safety, frontier market, safe pork consumption, theory of planned behaviour.**

Classification numbers: **2.2, 4.1, 7**

1. Introduction

Pork constitutes a fundamental element of daily dietary practices in Vietnamese households, prized for its nutritional value, affordability, and widespread acceptance. In contrast to poultry, beef or seafood, pork is broadly regarded as a versatile and enduring protein source, rendering it a staple across diverse socio-economic strata. According to data from the General Statistics Office (2024) [1], pork represents approximately 65-70% of total meat consumption within the typical Vietnamese family, with poultry accounting for 15-20%, and beef and seafood comprising the residual share. This predominance underscores pork's profound cultural and economic significance within Vietnam's culinary and nutritional framework, a pattern echoed in local preferences for other culturally resonant foods like coffee [2]. Additionally, consumer engagement through digital platforms, which W. Martens (2024) [3] has shown to be effective in enhancing product visibility and consumer outreach, could similarly improve transparency and consumer confidence in safe pork markets.

In recent years, escalating public apprehension regarding food safety and traceability has catalysed growing interest in "safe pork" - meat characterised by hygienic processing, appropriate packaging, and transparent sourcing. Despite this heightened consciousness, the market penetration of safe pork in urban hubs such as Hanoi has fallen short of consumer expectations. Traditional markets and small-scale vendors frequently offer meat of indeterminate provenance, devoid of formal certification or quality guarantees. This challenge is exacerbated by fluctuating pork prices, driven primarily by escalating import costs, which have disrupted consumer purchasing patterns and diminished demand for certified safe products.

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Gia Lam commune, situated on the periphery of Hanoi, provides a pertinent case study for exploring these shifting consumption dynamics. As one of the capital's most densely populated and rapidly urbanising locales, with a population of 321,797, Gia Lam exemplifies evolving consumer preferences shaped by local cultural dimensions [2]. Recent empirical research indicates that residents are prepared to pay a premium of 20-30% for pork certified as safe and traceable, relative to conventionally sourced alternatives [4]. Such behaviour reflects wider societal currents emphasising food safety, public health, and environmental sustainability.

Within this context, the present study investigates the determinants of safe pork consumption in Gia Lam commune. Utilising data derived from a structured survey conducted across five representative communes - Trau Quy, Dang Xa, Da Ton, Kieu Ky, and Bat Trang - this research probes the interplay of cognitive and social factors shaping consumer behaviour. Specifically, it applies the TPB to elucidate how attitude, subjective norm, and perceived behavioural control influence the intention to purchase safe pork and, subsequently, actual purchasing decisions. By delineating the relative salience of these factors, this study seeks to furnish actionable insights for policymakers, producers, and retailers aiming to align supply chains with the burgeoning demand for food safety and transparency in Vietnam's emergent markets - an alignment potentially strengthened by leadership approaches emphasising collaboration and stakeholder cooperation [5].

2. Theoretical framework and hypothesis development

2.1. Consumer behaviour: Conceptual foundations and definitions

Consumer behaviour constitutes a multidisciplinary field of inquiry, encapsulating the dynamic processes through which individuals and collectives navigate the acquisition, utilisation, and disposal of goods, services, and experiences. Seminal definitions by L.G. Schiffman (2013) [6] characterise consumer behaviour as the observable actions undertaken by individuals during the search, purchase, use, and evaluation of products and services aimed at fulfilling personal needs. Similarly, M.R. Solomon (1996) [7] frames it as an analytical lens examining how individuals or groups select, employ, or divest themselves of goods, services, or experiences to satisfy their desires. Expanding this discourse, D. Plessis (1994) [8] conceptualise consumer behaviour as a structured pattern of decision-making, spanning pre-purchase motivations, purchase actions, and post-purchase assessments, enacted by both individuals and familial units. P. Kotler, et al. (2020) [9] further refines this by emphasising discrete decision-making acts associated with product usage and disposal, underscoring the procedural complexity of consumption.

Collectively, these perspectives illuminate the multifaceted nature of consumer behaviour, typically delineated into sequential stages: need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase reflection. Each stage is modulated by an interplay of internal factors (e.g., perceptions, attitudes, and motivations) and external influences (e.g., social norms and market stimuli). Within the domain of food safety, particularly meat consumption, the construct of "safe pork" assumes critical salience. Safe pork is defined as meat derived from healthy animals, reared and processed under stringent regulatory oversight, adhering to established hygiene and safety standards. N.V. Chung, et al. (2017) [10] specify that safe pork originates from pigs subjected to quarantine, veterinary testing, and processing in sanitised environments. Complementing this, L.T. Ha, et al. (2021) [4] describe it as the product of a standardised supply chain encompassing rearing, slaughter, processing, and distribution. For the purposes of this study, safe pork consumption behaviour is operationalised as the systematic process whereby consumers seek, assess, and procure pork products meeting formal safety criteria, driven by nutritional and health-related imperatives. This process mirrors patterns observed in other consumption domains where local product quality and safety contribute to sustainable economic growth and consumer trust.

2.2. Theoretical models of consumer behaviour

Theory of reasoned action (TRA): The TRA, articulated by I. Ajzen, et al. (1977) [11], posits that behavioural enactment is predominantly a function of intention, which is itself shaped by two core constructs: attitude and subjective norms. Attitude denotes an individual's evaluative stance-positive or negative-toward performing a specific behaviour, while subjective norms reflect perceived social pressures emanating from significant others. TRA presupposes that beliefs about behavioural outcomes underpin attitudes, thereby linking cognition to action. Widely applied in consumer research, TRA elucidates how rational decision-making processes inform purchasing intentions, particularly in contexts where behaviours are volitionally controlled. Its utility lies in its parsimonious explanation of deliberate action, though it is limited by its exclusion of non-volitional influences.

Theory of planned behaviour (TPB): Extending TRA, I. Ajzen, et al. (1977) [11] introduced the TPB by integrating perceived behavioural control as a third determinant of intention. TPB asserts that behavioural intention arises from the confluence of attitude, subjective norms, and perceived behavioural control-the latter encapsulating an individual's self-assessed capacity to execute the behaviour amidst external constraints. This model excels in predicting behaviours subject to partial volitional control, distinguishing it from TRA. The three antecedents are delineated as follows: (1) *Attitude*, reflecting an individual's appraisal of the behaviour; (2) *Subjective norms*, capturing social expectations; and (3) *Perceived behavioural control*, gauging perceived feasibility. TPB's applicability to food choice, health-oriented behaviours, and ethical consumption underscores its relevance to this study, offering a robust framework for analysing safe pork purchasing decisions.

Black box model: The Black box model, originally proposed by P. Kotler, et al. (2020) [9] and refined in subsequent work, provides a stimulus-response paradigm for dissecting consumer behaviour. External stimuli - encompassing marketing initiatives and environmental factors - act as inputs that elicit consumer responses (e.g., purchase decisions) via internal psychological processes. These processes, termed the "black box", remain opaque, comprising consumer attributes (e.g., beliefs, values, motivations), and decision-making stages (e.g., problem recognition, information search, alternative evaluation, purchase, and post-purchase assessment). The model foregrounds the interplay between exogenous triggers and endogenous cognition, though it concedes the challenge of directly probing internal mechanisms. Its heuristic value lies in mapping observable outcomes to latent drivers, offering a complementary lens to TPB. Such mapping is particularly relevant when examining how local products influence consumption behaviour and regional economic implications [2].

Model of goal-directed behaviour (MGB): M. Perugini, et al. (2001) [12] advanced the model of MGB as an augmentation of TPB, addressing its neglect of emotional and motivational dimensions. MGB critiques TPB's rationalist bias, introducing constructs such as goal desire, anticipated emotions, and past behaviour as antecedents of intention. Goal desire serves as a motivational linchpin, mediating the effects of attitude, subjective norms, and perceived behavioural control, while anticipated emotions and prior experiences enrich the predictive framework. M. Perugini, et al. (2000) [13] argue that MGB captures the volitional pursuit of desired outcomes, integrating affective and habitual influences. This model is particularly germane to contexts where emotional resonance and routine shape preferences, such as the selection of safe or ethically sourced food products, enhancing its pertinence to the present investigation.

2.3. Hypothesis development

Drawing upon the conceptual underpinnings of the TPB, this study advances four hypotheses to elucidate the interrelationships among attitude, subjective norms, perceived behavioural control, purchase intention, and actual purchase behaviour within the context of safe pork consumption in Gia Lam commune. These hypotheses are formulated to test the predictive utility of TPB in explaining consumer decision-making processes, with each construct systematically linked to empirical expectations grounded in prior theoretical and contextual insights.

H1. Attitude toward safe pork exerts a significant positive influence on purchase intention.

Within the TPB framework, attitude encapsulates an individual's evaluative disposition-whether favourable or unfavourable-toward a specific behaviour. In the context of safe pork, a positive attitude emerges when consumers perceive the product as advantageous, hygienic, and consonant with health-related objectives for themselves or their households. Such evaluations are underpinned by cognitive beliefs (e.g., the nutritional superiority and safety assurances of safe pork) and affective responses (e.g., confidence in its traceability). Consistent with TPB's assertions, this study posits that a favourable attitude toward safe pork enhances consumers' intention to purchase, as positive appraisals amplify motivational drivers of behaviour.

H2. Subjective norms exert a significant positive influence on purchase intention.

Subjective norms, as delineated by TPB, reflect the perceived social pressures emanating from referent individuals or groups that shape behavioural intentions. In the realm of safe pork consumption, these pressures may originate from familial expectations, peer endorsements, or prevailing community norms advocating for safer food choices. In collectivist societies such as Vietnam, where social interdependence is pronounced, the influence of significant others is likely to be particularly salient. This hypothesis contends that when consumers perceive strong normative support for purchasing safe pork, their intention to conform to these expectations strengthens, thereby fostering a greater propensity to act.

H3. Perceived behavioural control exerts a significant positive influence on purchase intention.

Perceived behavioural control, a cornerstone of TPB, denotes an individual's self-assessed capacity to enact a behaviour, contingent upon both internal resources (e.g., knowledge, time) and external facilitators or impediments (e.g., availability, cost). In the case of safe pork, this construct captures consumers' confidence in overcoming barriers to procurement, such as identifying certified products or navigating price premiums. This hypothesis posits that heightened perceptions of control-stemming from accessible supply chains, affordability, or informational clarity-bolster purchase intention by reinforcing consumers' belief in their agency to execute informed and deliberate choices.

H4. Purchase intention exerts a significant positive influence on the actual purchase behaviour of safe pork.

Central to TPB is the premise that behavioural intention serves as the proximal determinant of action, mediating the effects of attitude, subjective norms, and perceived behavioural control. This hypothesis asserts that strong intentions to purchase safe pork - forged through favourable evaluations, social reinforcement, and perceived feasibility - translate into tangible purchasing behaviour, provided external constraints (e.g., market availability) do not substantially impede execution. The predictive strength of intention is expected to be robust in contexts where volitional control is high and intentions are well-defined, thereby supporting the proposed linkage between intention and the actual acquisition of safe pork.

3. Methodology

3.1. Sampling strategy

The determination of an appropriate sample size for this study adheres to the guidelines proposed by F. Hair, et al. (2014) [14], who advocate a minimum of five observations per questionnaire item to ensure adequate statistical power and representativeness in quantitative research. Given that the research instrument encompasses 20 variables, this criterion establishes a baseline sample size of 100 respondents. However, to bolster the analytical robustness, mitigate potential response variability, and enhance the generalisability of findings within the context of Gia Lam commune, a total of 200 valid responses were collected. This expanded sample exceeds the minimum threshold, thereby strengthening the reliability of statistical inferences despite constraints in time and resources.

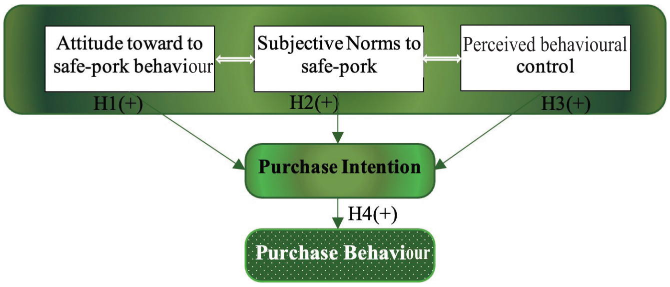

Fig. 1. Research model. Source: Compiled by the authors.

Respondents were drawn from the resident population of Gia Lam commune, ensuring contextual relevance to the study's focus on safe pork consumption.

3.2. Data collection

Primary data were gathered through a meticulously designed survey administered across five communes in Gia Lam commune: Trau Quy, Dang Xa, Da Ton, Kieu Ky, and Bat Trang. To ensure a representative cross-section of the local populace and minimise selection bias, participants were recruited using convenience and snowball sampling via online distribution technique, a method widely recognised for its capacity to yield unbiased and generalisable samples.

The survey instrument was structured to capture three distinct yet interrelated dimensions of consumer behaviour. The initial section probed respondents' experiences and practices related to safe pork consumption, providing a behavioural baseline. The second section evaluated the influence of psychological and contextual determinants-namely attitude, subjective norms, and perceived behavioural control-on purchase intention, aligning with the theoretical framework of the TPB. The final section elicited demographic data, including gender, age, occupation, and income level, to facilitate subgroup analysis and contextual interpretation.

The questionnaire integrated a combination of multiple-choice items and five-point Likert-scale questions, enabling the collection of both categorical and ordinal data suitable for robust statistical analysis. To optimise accessibility and response rates, the instrument was digitised using Google Forms and distributed online via a secure link targeted to residents within the specified communes. Recent research by M. Pang, et al. (2022) [15] has demonstrated the importance of adapting data collection methodologies to contemporary challenges, particularly in Vietnamese contexts where digital approaches can simultaneously maintain research integrity while accommodating evolving social circumstances. Prior to full implementation, the questionnaire underwent rigorous content validation by a panel of academic peers, ensuring clarity, relevance, and fidelity to the research objectives. This pre-testing phase refined the instrument, enhancing its precision and alignment with the study's conceptual aims, thereby reinforcing the methodological integrity of the data collection process.

3.3. Data analysis

Descriptive statistics: Descriptive statistical methods were employed to characterise the respondent profile and elucidate key patterns in safe pork consumption behaviour. Frequency distributions, means, and standard deviations were calculated to summarise demographic attributes and behavioural tendencies, providing a foundational overview of the sample and its responses. This preliminary analysis facilitated the identification of trends and variability, setting the stage for subsequent inferential testing.

Reliability assessment using Cronbach's alpha: To ascertain the internal consistency of the measurement scales, Cronbach's alpha reliability analysis was conducted, a widely accepted metric for evaluating the coherence of multi-item constructs. This coefficient measures the extent to which items within a scale are intercorrelated, serving as a robust indicator of reliability. Items exhibiting a corrected item-total correlation below 0.3 were flagged for potential exclusion, as such values suggest limited contribution to the construct's integrity.

Following J.C. Nunnally, et al. (1994) [16], a Cronbach's alpha threshold of 0.6 was adopted as the minimum standard for acceptable reliability, with values between 0.7 and 0.8 deemed good, and those ranging from 0.8 to 1.0 classified as very good [17]. However, Alpha coefficients exceeding 0.95 were scrutinised to guard against item redundancy or excessive conceptual overlap, ensuring the scales remained parsimonious and theoretically distinct.

This multi-tiered analytical approach-encompassing descriptive profiling and rigorous reliability testing-established a solid foundation for subsequent statistical modelling. By retaining only those constructs demonstrating psychometric soundness, the methodology enhances the credibility and validity of the empirical findings, aligning with the study's objective of delivering actionable insights into safe pork consumption behaviour.

Exploratory factor analysis (EFA): EFA was employed as a statistical technique to evaluate the construct validity of the measurement scales and to delineate the latent factor structure underlying the observed variables. EFA functions as a data reduction method, consolidating a multiplicity of correlated variables into a smaller set of interpretable latent constructs, termed factors while maximising the retention of original variance. This approach is particularly valuable in refining measurement instruments and ensuring that emergent factors align with the theoretical framework of the study.

In the present investigation, EFA was applied to a set of 20 observed variables derived from the survey instrument. The analysis commenced with an assessment of data suitability using Bartlett's Test of Sphericity, which tests the null hypothesis that the correlation matrix is an identity matrix, thereby confirming the presence of sufficient inter-variable correlations for factor analysis. Concurrently, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated, with a minimum threshold of 0.5 established as the criterion for proceeding with factor extraction, in accordance with conventional standards [18]. A KMO value exceeding this benchmark indicates that the dataset is appropriate for factorisation.

Factor extraction was conducted using principal component analysis (PCA) with varimax rotation, a method selected to maximise the orthogonality of factors and enhance interpretability. Variables exhibiting factor loadings below the widely accepted threshold of 0.50 were excluded to ensure a robust and parsimonious factor structure, as loadings below this level suggest insufficient contribution to the latent construct [14]. Factor retention was guided by the H.F. Kaiser (1974) [18] criterion, whereby only factors with Eigenvalues greater than 1.0 were retained, reflecting their substantive explanatory power. Additionally, the cumulative percentage of variance explained by the retained factors was examined to ascertain the extent to which the factor solution accounted for the original variability in the data, with a target of at least 50% deemed satisfactory for behavioural research. This rigorous application of EFA ensures that the derived constructs are both statistically sound and theoretically meaningful, laying a solid foundation for subsequent analyses.

Correlation analysis: Following the validation of measurement scales through EFA, Pearson correlation analysis was undertaken to examine the strength and direction of linear relationships between independent and dependent variables, thereby establishing the empirical ground - work for regression modelling. This analytical step is critical for verifying the assumption of linearity - a prerequisite for inferential techniques - and for identifying patterns of association consistent with the hypotheses derived from the TPB.

The Pearson correlation coefficient (r), ranging from -1 to +1, quantifies the magnitude and direction of linear relationships, with values approaching +1 or -1 indicating strong positive or negative associations, respectively, and a value of 0 denoting the absence of a linear relationship. In this study, correlation coefficients were computed for all pairs of variables, with statistical significance assessed at the 0.05 level to ensure robustness. Only those variables demonstrating significant and theoretically coherent correlations were retained for inclusion in subsequent regression models, thereby enhancing the precision of the analysis. Additionally, the correlation matrix was scrutinised for evidence of multicollinearity among predictors, with high intercorrelations (e.g., r>0.80) flagged as potential threats to model stability. This diagnostic step aligns with established methodological protocols in behavioural research [19], ensuring that the variables selected for further analysis are both empirically justified and free from confounding redundancies. This systematic approach to correlation analysis not only reinforces the study's methodological rigor but also provides a critical bridge between exploratory and confirmatory phases of data analysis, facilitating a coherent transition to hypothesis testing and model estimation.

Regression analysis: Following the establishment of linear relationships among variables through correlation analysis, linear regression was employed to model causal effects, adhering to the methodological framework outlined by H. Trong, et al. (2008) [17]. This statistical technique quantifies the strength and direction of influence exerted by independent variables on dependent variables, enabling the testing of hypothesised relationships within the TPB.

Multivariate regression analysis was conducted in two stages. In the first stage, the combined effects of attitude (AT), subjective norms (SN), and perceived behavioural control (BC) on purchase intention (PI) were estimated. This model assesses how these psychological factors collectively shape consumers' intent to purchase safe pork. In the second stage, a separate regression examined the effect of purchase intention (PI) on actual purchase behaviour (PB), testing the extent to which intention translates into action. The regression models are expressed as follows:

Model 1: Predicting purchase intention

$$PI = \alpha + \beta_1 AT + \beta_2 SN + \beta_3 BC + \varepsilon$$

Model 2: Predicting purchase behaviour

$$PB = \alpha + \beta PI + \varepsilon$$

Here, α represents the intercept, β coefficients denote the magnitude of influence of each independent variable, and ε is the error term capturing unexplained variance. These equations provide a structured approach to evaluating the directional impact of predictor variables on outcomes, facilitating hypothesis testing with precision.

Measurement items and scale design: This study employed a structured questionnaire comprising 20 observed indicators, operationalising five latent constructs central to the TPB: attitude, subjective norms, perceived behavioural control, purchase intention, and purchase behaviour. Each indicator was assessed using a five-point Likert scale, ranging from 1 ("Completely disagree") to 5 ("Completely agree"), a format selected for its capacity to capture gradations in respondent perceptions while facilitating robust statistical analysis. The indicators were carefully adapted from established literature to ensure theoretical alignment and contextual relevance to safe pork consumption in Gia Lam commune. Table 1 delineates the indicator codes, measurement items, and their respective scholarly sources, providing a transparent basis for the operationalisation of the construct.

4. Results

4.1. Research site characteristics

Gia Lam is an eastern commune of Hanoi, covering 116.64 km² with a population of 321,797, comprising 20 communes and 2 townships [1]. The commune shares the typical tropical monsoon climate of the Red river delta, characterised by a hot, humid season from April to October and a dry, cooler season from November to March. The annual average temperature is 23.5°C, with rainfall ranging from 1,400 to 1,600 mm - mainly concentrated in the summer months alongside high solar radiation and seasonal monsoons that influence local agricultural activities.

Gia Lam invested approximately 1,404 billion VND in 335 construction projects, including 41 key transport and urban infrastructure developments [1]. The commune prioritises improving connectivity and public amenities, targeting the completion of seven major roads by 2025 and continuing broader infrastructure development through 2030. Significant efforts are also directed toward the construction of educational facilities and rural upgrading under the National Target Program on New Rural Development.

To accelerate the transition toward an advanced and model rural commune, Gia Lam has mobilised its entire political system. As a result, all communes have achieved advanced rural standards, with five designated as model communes - exceeding the targets set by the 22nd District Party Congress. The

Table 1. Research indicators.

Latent variable	Label/code	Indicator name	Sources
4*Attitude	AT1	Purchasing safe pork is very important	[20]
	AT2	Purchasing safe pork is the right thing	
	AT3	Purchasing safe pork is a wise choice	
	AT4	You feel satisfied of purchasing safe pork	
5*Subjective norms	SN1	You will buy safe pork when you get more information from advertisements	[21]
	SN2	The people that consult with you support you in buying safe pork	
	SN3	Your relatives encourage you to buy safe pork	
	SN4	Your friends and colleagues recommend buying safe pork	
	SN5	People who are important to you support purchasing safe pork	
4*Perceived behavioural control	PC1	You think buying safe pork is easy for you	[11]
	PC2	Giving up the habit of buying unknown-origin pork is not difficult; you just need to be determined	
	PC3	It is easy to find and buy safe pork in your area	
	PC4	Finding information to buy safe pork is simple for you	
4*Purchase intention	PI1	You will buy safe pork because it has a clear origin and information	[11]
	PI2	You will buy safe pork because it is suitable for your income	
	PI3	You will buy safe pork because it is good for you and your family	
	PI4	You will buy safe pork in the future	
3*Purchase behaviour	PB1	You often buy safe pork	[11]
	PB2	In the past one month, you have regularly bought safe pork	
	PB3	You usually buy safe pork under normal conditions	

Source: Compiled by the authors.

commune has also recorded notable accomplishments in education, with 92.4% of public schools meeting national standards, alongside effective administrative reforms, stable public security, and strengthened local defence.

From a socio-economic perspective, Trau Quy township and Dang Xa, Da Ton, Kieu Ky, and Bat Trang communes stand out for their high population density, elevated income levels, and strong consumer demand. These areas reflect a diverse socio-economic landscape, blending agriculture, industry, and traditional crafts, making them representative of the commune's broader development dynamics

4.2. Demographic profile

The survey sample from Gia Lam commune reveals a diverse yet distinctive demographic profile, predominantly comprising young, educated females. Females constitute 57% (*n*=114) of respondents compared to 43% males (*n*=86), with 59% (*n*=118) aged 20-30, followed by 36.5% (*n*=73) over 30, and 4.5% (*n*=9) under 20, reflecting an urbanising, youthful cohort. Educationally, 60% (*n*=120) hold undergraduate degrees, with 13% (*n*=26) high school graduates, 6.5% (*n*=13) postgraduates, and 20.5% (*n*=41) in other categories, suggesting a capacity for informed food safety decisions.

Table 2. Demographic characteristics of respondents.

Criteria		Frequency	Percentage (%)
Gender	Male	86	43.0
	Female	114	57.0
Age	Under 20 years old	9	4.5
	20-30 years old	118	59.0
	Over 30 years old	73	36.5
Education	High-school	26	13.0
	Undergraduates	120	60.0
	Postgraduates	13	6.5
	Other	41	20.5
Occupation	Business owner	37	18.5
	Public servant	16	8.0
	Office worker	34	17.0
	Student	62	31.0
	Housewife	18	9.0
	Other	33	16.5
Income	Below 5 million VND	55	27.5
	5-10 million VND	50	25.0
	10-15 million VND	51	25.5
	More than 15 million VND	44	22.0
Family member	1-2 people	47	23.5
	3-4 people	108	54.0
	5-6 people	41	20.5
	More than 6 people	4	2.0

Source: From the survey 2024.

Occupationally, students (31%, *n*=62) lead, followed by business owners (18.5%, *n*=37), office workers (17%, *n*=34), and others, while income skews moderate, with most below 15 million VND monthly (e.g., 27.5%, *n*=55, below 5 million VND). Household sizes are typically small to medium, with 54% (*n*=108) in 3-4 member families, with smaller proportions living in households of 1-2 members (23.5%), 5-6 members (20.5%), and very few (2%) residing in households exceeding 6 individuals. This composition detailed in Table 2 offers a robust basis for analysing safe pork consumption within the TPB framework, highlighting socio-economic diversity and contextual relevance.

4.3. Perceptions of safe pork

Concern for pork safety is high, with 43% (*n*=86) rating it significant and less than 10% unconcerned. Attributes defining "safe pork" include clear origin (53.5%, *n*=107), clear packaging (46.5%, *n*=93), and supermarket sales (45.5%, *n*=91) (Table 3).

Table 3. Consumer awareness of safe pork attributes.

	N	Percent (%)	Percent of cases
Has clear origin	107	23.2	53.5
Has quarantine mark	81	17.6	40.5
Has clear packaging	93	20.2	46.5
Sell in supermarket	91	19.7	45.5
Sell in safe pork store	63	13.7	31.5
Other	26	5.6	13.0

Source: From the survey 2024.

4.4. Consumption patterns

The weekly pork consumption data reveals a predominant consumption range of 1-3 kg (57.5%, *n*=115), with a notable segment consuming less than

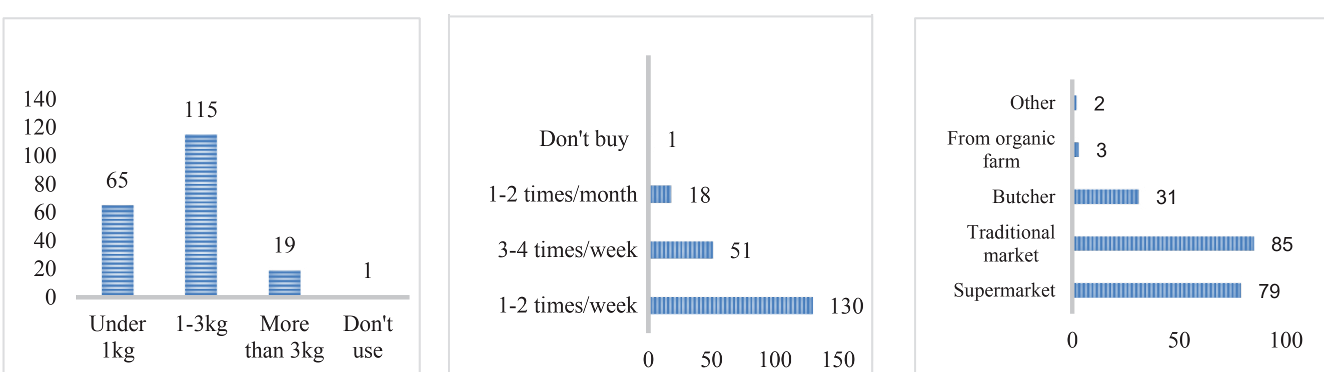

Fig. 2. Volume, frequency, and place of safe pork consumption. Source: The survey 2024 (Unit: respondents).

1 kg (32.5%, *n*=65), while frequency analysis indicates that nearly two-thirds of respondents (65%, *n*=130) consume pork 1-2 times weekly. Consumer purchase motivations primarily emphasise convenience (35%, *n*=71) and price considerations (28%, *n*=56), with purchase information being derived equally from internet sources and previous buying experiences (56%, *n*=112 for each category) (Fig. 2, Tables 4 and 5).

Table 4. Reasons for frequent purchasing of safe pork.

	Frequency	Percent	Valid percent	Cumulative percent
Cheap price	56	28.0	28.0	28.0
Convenient to buy	71	35.5	35.5	63.5
Verified origin	48	24.0	24.0	87.5
Familiar with the seller	23	11.5	11.5	99.0
Other	2	1.0	1.0	100.0
Total	200	100.0	100.0	

Source: Results from SPSS.

Table 5. Consumer information channels.

	N	Percent (%)	Percent of cases
Internet	112	27.9	56.0
TV, Radio	53	13.2	26.5
Friend, relative	56	14.0	28.0
Buying experience	112	27.9	56.0
Package of safe pork	45	11.2	22.5
Other	23	5.7	11.5
Total	401	100.0	200.5

Source: Results from SPSS.

4.5. Statistical findings

Cronbach's alpha confirmed scale reliability: attitude (α=0.765), subjective norms (α=0.767), perceived behavioural Control (α=0.706), and purchase intention (α=0.701) all exceeded the 0.6 threshold. Purchase Behaviour improved from α=0.568 to α=0.638 after removing PB3 (correlation=0.255) (Table 6).

Table 6. Reliability of scales.

Latent variable	Items (indicator)	Corrected item - Total correlation	Cronbach's alpha if item deleted
Attitude	AT1	0.574	0.704
	AT2	0.566	0.709
	AT3	0.601	0.690
	AT4	0.518	0.734
Cronbach's alpha coefficient of the factor: 0.765			
Subjective norms	SN1	0.610	0.703
	SN2	0.466	0.748
	SN3	0.496	0.739
	SN4	0.511	0.736
	SN5	0.625	0.695
Cronbach's alpha coefficient of the factor: 0.767			
Perceived behavioural control	PC1	0.445	0.673
	PC2	0.454	0.667
	PC3	0.588	0.583
	PC4	0.495	0.644
Cronbach's alpha coefficient of the factor: 0.706			
Purchase intention	PI1	0.623	0.546
	PI2	0.433	0.669
	PI3	0.518	0.625
	PI4	0.411	0.703
Cronbach's alpha coefficient of the factor: 0.701			
Purchase behaviour (1st)	PB1	0.425	0.390
	PB2	0.464	0.325
	PB3	**0.255**	0.638
Cronbach's alpha coefficient of the factor: **0.568**			
Purchase behaviour (2nd)	PB1	0.468	.
	PB2	0.468	.
Cronbach's alpha coefficient of the factor: **0.638**			

Source: Results from SPSS.

EFA yielded KMO coefficients are greater than 0.5, Bartlett's *p*=0.000, and 56.482% variance extracted, with all factor loadings greater than 0.5 (Table 7).

Table 7. Rotated component matrix.

	Component		
	1	*2*	*3*
SN5	0.799		
SN1	0.780		
SN3	0.624		
SN4	0.597		
SN2	0.544		
AT1		0.825	
AT2		0.708	
AT3		0.694	
AT4		0.682	
PC3			0.819
PC2			0.681
PC1			0.661
PC4			0.599

Extraction method: Principal component analysis. Rotation method: Varimax with kaiser normalisation. Source: Results from SPSS.

Pearson correlations showed Purchase Behaviour linked to Purchase Intention (r=0.496, p<0.01), Subjective Norms (r=0.301, p<0.01), Attitude (r=0.344, p<0.01), and Perceived Behavioural Control (r=0.282, p<0.01) (Tables 8-10).

Table 8. Correlation results.

		PB	PI	SN	AT	PC
PB	Pearson correlation	1	0.496**	0.301**	0.344**	0.282**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N	200	200	200	200	200
PI	Pearson correlation	0.496**	1	0.526**	0.581**	0.430**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000
	N	200	200	200	200	200
SN	Pearson correlation	0.301**	0.526**	1	0.479**	0.493**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000
	N	200	200	200	200	200
AT	Pearson correlation	0.344**	0.581**	0.479**	1	0.262**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000
	N	200	200	200	200	200
PC	Pearson correlation	0.282**	0.430**	0.493**	0.262**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	200	200	200	200	200

**Correlation is significant at the 0.01 level (2-tailed). Source: Results from SPSS.

Regression analysis produced two models:

Model 1: Purchase intention (Adjusted R^2=0.442, F=53.568, p<0.001)

$PI = 1.147 + 0.222SN + 0.419AT + 0.210PC + \varepsilon$ (VIF < 2)

Table 9. R-square for first model.

Model Summary[b]					
Model	*R*	*R square*	*Adjusted R square*	*Std. error of the estimate*	*Durbin-watson*
1	0.671[a]	0.451	0.442	0.42696	1.863

a. Predictors: (Constant), PC, AT, SN; b. Dependent Variable: PI.Source: Results from SPSS.

Table 10. Regression coefficients for first model.

Coefficients[a]								
Model		*Unstandardised coefficients*		*Standardised coefficients*	*t*	*Sig.*	*Collinearity statistics*	
B		*Std. Error*	*Beta*			*Tolerance*	*VIF*	
1	(Constant)	1.147	0.218		5.266	0.000		
	SN	0.199	0.060	0.222	3.313	0.001	0.626	1.598
	AT	0.386	0.056	0.419	6.946	0.000	0.770	1.299
	PC	0.190	0.055	0.210	3.456	0.001	0.756	1.322

a. Dependent Variable: PI. Source: Results from SPSS

Model 2: Purchase behaviour (Adjusted R^2=0.242, F=64.560, p<0.001).

5. Discussion

The findings affirm that attitude (β=0.419, p<0.001), subjective norms (β=0.222, p=0.001), and perceived behavioural control (β=0.210, p=0.001) significantly predict purchase intention, which strongly drives purchase behaviour (β=0.496, p<0.001) for safe pork in Gia Lam commune. This aligns with Ajzen's TPB, reinforcing its utility in food safety contexts. Attitude's dominance suggests a culturally rooted prioritisation of health and quality, likely amplified by Vietnam's rapid urbanisation and rising food safety awareness. Unlike subjective norms or perceived behavioural control, which rely on external cues (social pressure or access), attitude reflects an internalised belief in safe pork's superiority, consistent with studies in emerging markets where health consciousness outpaces infrastructure development. This implies that Gia Lam consumers are motivated more by personal conviction than by social or logistical factors, a nuance that distinguishes this frontier market from developed contexts where access often overshadows intent.

Comparatively, prior research on safe food adoption in Western markets emphasises perceived behavioural control due to robust distribution networks, whereas Gia Lam's weaker effect (β=0.210) reflects limited supermarket penetration and inconsistent labelling. This study's focus on safe pork in Vietnam contributes novel insights into frontier markets, where collectivism may amplify subjective norms (β=0.222) relative to individualistic settings, yet income constraints (78% below 15 million VND) temper consumption volume. Local factors, including a collectivist tendency to trust peer recommendations and an urbanising population wary of traditional pork risks, likely shape these dynamics. Conversely, restricted access evident in the 1-3 kg weekly consumption norm (57.5%) underscores how price and availability hinder perceived behavioural control.

Theoretically, although TPB effectively captures these behavioural drivers, it exhibits some limitations when applied to the context of safe food consumption. TPB primarily relies on rational processes and planned actions, which makes it less capable of capturing affective, spontaneous, or habitual behaviour which are often highly relevant in everyday food purchase decisions. The flexibility of TPB is also constrained in complex contexts, where environmental cues, experiences, and emotions may exert stronger influences than perceived factors.

Moreover, TPB does not clearly specify the relative impact of attitudes, subjective norms, and perceived behavioural control, which may lead to prediction errors when the influence of each component varies across populations or contexts. The gap between intention and behaviour tends to widen when temporal factors are disregarded, further reducing predictive accuracy.

These limitations suggest that TPB could be strengthened by integrating the model of MGB, which accounts for emotional factors like trust in safe pork branding, or Black box models addressing subconscious such as price sensitivity. The strong Attitude-to-Intention link challenges TPB's equal weighting of constructs, suggesting a need to re-evaluate its applicability in health-driven, resource-constrained settings. Practically, producers can capitalise on this by prioritising transparent origin labelling and quality certifications to reinforce consumer attitudes, while referral programs could leverage social influence. Limited access calls for expanded distribution through supermarkets and affordable pricing strategies, addressing the gap between intention and behaviour.

These insights, however, are tempered by limitations. Self-reported data may inflate safety concerns or consumption frequency, and the cross-sectional design precludes causal inference. The sample, confined to Gia Lam commune (n=200), limits generalisability to rural or wealthier Vietnamese regions, where income and infrastructure differ. Despite these constraints, the study illuminates safe pork adoption in an urbanising frontier market, offering a foundation for longitudinal research or broader geographic comparisons.

6. Conclusions

This study reveals that attitude strongly shapes purchase intention (PI) for safe pork in Gia Lam commune, followed by subjective norms (SN) and perceived behavioural control (PBC), with PI directly driving purchase behaviour (PB). These relationships, derived from a survey of 200 respondents, underscore the primacy of health-driven beliefs in a frontier market, offering a novel application of the TPB to Vietnam's evolving food safety landscape. Unlike studies in developed markets, this work highlights how internalised priorities can outweigh access constraints in shaping consumer choices.

Theoretically, TPB proves robust in this context, affirming its cross-cultural relevance, though its emphasis on rational drivers may underexplore emotional or economic nuances. Practically, the findings signal opportunities for public health campaigns to reinforce safety perceptions and for businesses to prioritise clear labelling and urban distribution. Policymakers and producers may consider collaborating to bridge access gaps, ensuring safe pork's potential to enhance community well-being. Future research must test these dynamics longitudinally and across diverse regions to refine strategies for sustainable adoption.

CRediT author statement

Pham Thi Huong Diu: Conceptualisation, Writing - Original draft preparation, Methodology, Reviewing and Editing; Chor Sheiha: Formal analysis, Software, Writing - Original draft preparation, Data curation; Wil Martens: Reviewing and Editing.

COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

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Using grey models for forecasting Vietnam's renewable energy consumption

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Abstract:

Vietnam has actively pursued its commitments under the 2030 Agenda for Sustainable Development and has been an engaged participant in the Paris Agreement under the United Nations Framework Convention on Climate Change (COP21). One of Vietnam's key obligations is to drive a significant energy transition aimed at reducing greenhouse gas emissions. The development of renewable energy sources is an essential global endeavour, given their crucial role in reducing greenhouse gas emissions, protecting the environment, and decreasing reliance on fossil fuels. This study employs grey forecasting models (GM(1,1), NGBM(1,1), and DGM(1,1)) to predict Vietnam's renewable energy consumption from 2023 to 2030. The analysis reveals a substantial increase in renewable energy demand, with forecasts indicating considerable growth: GM(1,1) predicts 632.2 TWh, DGM(1,1) anticipates 602.5 TWh, and NGBM(1,1) projects 557.7 TWh by 2030. Among the models, DGM(1,1) yields the most accurate results, with the lowest mean absolute percentage error (MAPE) of 6.76%. This forecast aligns with Vietnam's ambitious renewable energy development goals, aimed at diversifying its energy mix and meeting climate mitigation targets. The findings highlight the importance of continued investment in renewable energy technologies, infrastructure, and supportive policies to secure a sustainable energy future while balancing economic growth and environmental preservation. This research offers valuable insights for policymakers in shaping Vietnam's energy transition strategies over the coming decades.

Keywords: **grey model, renewable energy, Vietnam.**

Classification numbers: **2.2, 7**

1. Introduction

Vietnam stands out as one of Asia's most notable economic success stories, with an average GDP growth rate of 5.9% between 2016 and 2022 [1]. Notably, in 2020, Vietnam was one of the few countries to maintain a positive GDP growth rate of 2.91% amidst the global pandemic, earning its place as one of the 16 most successful emerging economies during COVID-19. With a population ranking as the 40th largest in the world and the 4th largest in ASEAN, Vietnam's GDP per capita is ranked 6th in the region [1]. Alongside these impressive economic achievements, there is an increasing demand for traditional energy sources, which has become a primary contributor to environmental pollution in the country. In 2019, emissions from fuel combustion in Vietnam totalled 262 million tonnes of CO_2, representing a 17.6% increase from 2018 and 1.8 times higher than in 2010 [2]. Comparative emission indicators show that Vietnam's per capita emission rate is relatively low, but its emissions per unit of GDP are notably high. Thus, the challenge of balancing economic growth with environmental sustainability is an urgent concern not only for Vietnam but for other nations as well.

Renewable energy is widely regarded as a key driver of sustainable development and a solution for reducing greenhouse gas emissions [3], particularly in response to the Paris Agreement, which aims to limit global warming to below 2°C [4]. According to the 2019 Energy Outlook report, renewables accounted for 19.3% of global energy consumption and 24.5% of electricity production in 2017 and 2018. Vietnam

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has significant potential to harness renewable energy sources such as solar, biomass, hydroelectric, and wind power. Over the years, the Vietnamese government has implemented policies and strategies to promote renewable energy development, including the country's renewable energy development strategy for 2050, support mechanisms for grid-connected biomass power projects, and incentives for solar and wind power development. However, the reality is that Vietnam has not fully capitalised on its potential due to barriers faced by investors in areas such as institutional frameworks, legal issues, investment climate, technical and commercial challenges, and workforce capabilities. According to Vietnam's Renewable Energy Report (2018), the combined output of small hydroelectric, wind, and solar energy stood at 1.65, 0.19, and 0.01 MW, respectively [5]. This study aims to predict the future consumption of renewable energy in Vietnam, which is essential to providing valuable insights and solutions for managing and optimising the country's renewable energy resources.

2. Literature review

Grey model theory is a powerful tool for system modelling in contexts where information is incomplete, behaviours are unclear, or operating mechanisms are undefined [6]. This theory facilitates in-depth analyses, allowing for the observation of system developments and changes, and supports long-term forecasting [7]. A distinctive feature of grey model theory is its ability to construct models using a minimum of just four data samples, without requiring strict assumptions regarding sample distribution. Numerous studies have demonstrated that the basic grey model GM(1,1) delivers exceptionally high predictive accuracy when applied to small sample data sets [8]. However, the predictive accuracy of GM(1,1) is generally observed when the test sample data follow a steady growth trend. D.C. Li, et al. (2009) [9] and Y.C. Lee, et al. (2014) [10] have proposed that, in cases where sample data exhibit significant fluctuations, the use of nonlinear Bernoulli models and Markov models can significantly improve forecast accuracy. To address the limitations identified in previous studies and to enhance prediction accuracy, several studies have integrated the GM(1,1) model with the nonlinear grey Bernoulli model (NGBM) and the grey Verhulst model for theoretical computations and empirical validation. P. Herbig, et al. (1993) [11] emphasised that forecasting is a crucial tool for estimating future events or conditions that lie beyond an organisation's control, thus providing managers with vital data for planning. Therefore, accurate prediction is a fundamental element in the decision-making process.

D. Gielen, et al. (2019) [12] confirmed that renewable energy sources could meet two-thirds of global energy demand and make a substantial contribution to reducing greenhouse gas emissions, which are necessary to limit the global average surface temperature increase to below 2°C by 2050. H.T.H. Xuyen (2018) [13] used data from 2010 to 2014 to forecast CO_2 emissions, renewable energy consumption, and economic growth in Vietnam from 2015 to 2019 using the grey model. The results indicated a 3% increase in CO_2 emissions, a negligible rise in renewable energy consumption, and a 5% GDP growth by 2019 compared to 2010. H. Zhao, et al. (2020) [14] applied the grey model to forecast non-renewable energy consumption in countries within the Asia-Pacific Economic Cooperation (APEC) forum. Their findings suggest an upward trend in oil consumption across 15 countries, with coal consumption showing significant growth in South Korea, Indonesia, Vietnam, Malaysia, and the Philippines, while the United States, Canada, and Australia exhibited a decreasing trend. Natural gas consumption is expected to increase in the United States, Mexico, Singapore, China, Vietnam, and Peru. For nuclear energy, consumption is projected to rise in China, while it is expected to decrease in South Korea.

H.T. Pao, et al. (2012) [15] used the grey Bernoulli model to forecast CO_2 emissions, renewable energy consumption, and economic growth in China. The results showed that from 2011 to 2020, China's annual emissions, energy consumption, and real GDP growth rates were 4.47, -0.06, and 6.67%, respectively. Based on these findings, it was recommended that China adopt a dual strategy to enhance energy efficiency, reduce losses in electricity transmission and distribution, and promote energy-saving policies to mitigate unnecessary energy waste.

C.H. Wang (2004) [16] applied an improved GM(1,1) model to forecast the number of tourists from Hong Kong (China), the US, and Germany visiting Taiwan (China) between 1989 and 2000. The study concluded that the improved model demonstrated high predictive accuracy, significantly reducing both the cost and time required for data collection due to its minimal sample size requirement.

E. Kayacan, et al. (2010) [17] employed NGBM and grey Markov models to forecast the exchange rates of the US dollar and the euro from 2005 to 2007. The study revealed high accuracy in these models when the test sample data exhibited a steady growth trend. D. Akay, et al. (2013) [18] applied various models to forecast electricity demand in Turkey, concluding that grey theory provided the most optimistic predictions. P.Y. Hu (2004) [19] developed a GM(1,1) model to assist consumers in making optimal decisions when purchasing new cars, allowing them to input preferences such as brand, price, safety, functionality, and fuel consumption to make an informed choice.

3. Data and methodology

3.1. Data collection

Data on renewable energy consumption in Vietnam from the period 2019 to 2023 were collected from the website ourworldindata.org (Table 1). The procedure for setting the data in the grey model is provided in Section 3.2.

Table 1. Data description used for the Grey model.

Year	Renewable energy consumption (TWh)
2019	190
2020	223
2021	284
2022	341
2023	309

Source: ourworldindata.org (2024).

3.2. The Grey model

GM(1,1): The GM(1,1) forecast model is the fundamental component of the grey forecast model system. Renowned for its computational simplicity and high precision, this model is extensively utilised across various domains, including economics, management, and transportation. In this study, series prediction, involving the direct formulation of grey prediction models based on available data, has been addressed. The detailed computational steps for the GM(1,1) forecasting model are outlined as follows:

First, the given data is defined as the original series, where $X^{(0)}$ is a non-negative data series:

$$X^{(0)} = (x^{(0)}(1), x^{(0)}(2), \dots x^{(0)}(n)) \tag{1}$$

In the second step, a single AGO is applied to accumulate the established original series. The following generated sequence is obtained:

$$X^{(1)} = (x^{(1)}(1), x^{(1)}(2), \dots x^{(1)}(n)) \tag{2}$$

where $x^{(1)}(k)=\sum_{i=1}^{k} x^{(0)}(i)$, $k=2, 3, \dots, n$

For the third step, GM(1,1) is established as a differential equation of order one and one variable, as follows:

$$\frac{dx^{(0)}(k)}{dk} + ax^{(1)}(k) = b \tag{3}$$

where *b* is a constant.

For the fourth step, the least squares method along with differential and difference equations is used to obtain the parameters a and b of the GM(1,1) model:

$$\hat{a} = \begin{bmatrix} a \\ b \end{bmatrix} = (B^T B)^{-1} B^T Y$$
$$Y = \left[X^{(0)}(2), X^{(0)}(3), \dots X^{(0)}(n)\right]\mathrm{T} \tag{4}$$

where

$$B = \begin{bmatrix} -0{,}5 \times \left(x^{(1)}(2) + x^{(1)}(1)\right) & 1 \\ -0{,}5 \times \left(x^{(1)}(3) + x^{(1)}(2)\right) & 1 \\ \dots & \dots \\ -0{,}5 \times \left(x^{(1)}(n) + x^{(1)}(n-1)\right) & 1 \end{bmatrix}, Y = \begin{bmatrix} x^{(0)}(2) \\ x^{(0)}(3) \\ \dots \\ x^{(0)}(n) \end{bmatrix} \tag{5}$$

In step five, the grey differential equation is used to obtain the grey AGO equation:

$$\hat{x}^{(1)}(k+1) = \left[x^{(0)}(1) - \frac{b}{a}\right] e^{-ak} + \frac{b}{a}, k = 1, 2, 3, \dots, n, n+1, \dots \tag{6}$$

For step six, the forecast values of the GM forecast model (1,1) is calculated based on the following formula:

$$\hat{x}^{(0)}(k+1) = \hat{x}^{(1)}(k+1) - \hat{x}^{(1)}(k), \ k = 1, 2, 3, \dots$$

or

$$\hat{x}^{(0)}(k+1) = \left[x^{(0)}(1) - \frac{b}{a}\right] e^{-ak}(1 - e^{a}) \tag{7}$$

Nonlinear grey Bernoulli Model (NGBM (1,1)): The nonlinear grey Bernoulli model (NGBM) extends the traditional GM(1,1) model by introducing a nonlinear component based on the Bernoulli differential equation, enabling it to capture more complex system dynamics for enhanced forecasting performance. As a variant of the grey forecasting models, the NGBM incorporates the Bernoulli equation to accommodate nonlinear forecasting functions, allowing for more accurate predictions of time series data exhibiting nonlinear fluctuations-something that traditional GM(1,1) models cannot achieve. C.I. Chen, et al. (2011) [7] conducted an empirical study comparing the NGBM(1,1) with the traditional GM(1,1) model using unemployment rate data from ten countries. The results showed that the NGBM(1,1) significantly improved prediction accuracy. S.B. Tsai, et al. (2017) [20] applied the traditional GM(1,1), NGBM(1,1), and the Grey Verhulst model to forecast renewable energy consumption trends. They then compared the results to those from a standard linear regression model to validate the NGBM(1,1)'s precision and applicability. The NGBM(1,1) retains two basic advantages of the GM(1,1): a simple derivation process and the requirement of only four data points for modelling. Additionally, the NGBM(1,1) reduces the prediction error common in GM(1,1) and improves its accuracy for nonlinear data.

The GM (1,1) is a special case of the NGBM. The calculation steps and procedures for deriving the NGBM equation are as follows:

(a) The original data are defined as the original series. A new series is then obtained using the Accumulated Generating Operation (AGO) for calculation. The first three equations for the NGBM are identical to Eqs. (1)-(3) in GM(1,1).

(b) The NGBM equations differ from those of GM(1,1). The Bernoulli equation is used to establish both the differential and difference models for the NGBM. The NGBM differential equation is as follows:

$$\frac{dx^{(0)}(k)}{dk} + ax^{(1)}(k) = b[X^{(1)}]^r$$
$$\hat{a} = \begin{bmatrix} a \\ b \end{bmatrix} = (B^T B)^{-1} B^T Y \tag{8}$$

(c) The grey differential equation is used to derive the grey AGO equation:

$$B = \begin{bmatrix} -0,5 \times \left(x^{(1)}(2) + x^{(1)}(1)\right) & \left\{0,5 \times \left(x^{(1)}(2) + x^{(1)}(1)\right)\right\}^r \\ -0,5 \times \left(x^{(1)}(3) + x^{(1)}(2)\right) & \left\{0,5 \times \left(x^{(1)}(3) + x^{(1)}(2)\right)\right\}^r \\ \cdots & \cdots \\ -0,5 \times \left(x^{(1)}(n) + x^{(1)}(n-1)\right) & \left\{0,5 \times \left(x^{(1)}(n) + x^{(1)}(n-1)\right)\right\}^r \end{bmatrix} \tag{9}$$

$$\hat{X}^{(1)}(k+1) = \left[\left[X^{(0)}(1)^{(1-r)} - \frac{b}{a}\right] e^{-ak(1-r)} + \frac{b}{a}\right]^{\left(\frac{1}{1-r}\right)} \tag{10}$$

k =1, 2, 3, ..., n, n+1, ...

(d) Equation (10) is reduced using the IAGO to obtain the required forecasting model (Eq.(11)):

$$\hat{x}^{(0)}(k+1) = \hat{x}^{(1)}(k+1) - \hat{x}^{(1)}(k), k=1, 2, \ldots \tag{11}$$

The discrete grey DGM (1,1): The DGM(1,1) model is often used to address problems involving uncertain information and small sample sizes. The DGM(1,1) model offers a distinct advantage over the GM(1,1) model in that it can accurately predict data series exhibiting exponential growth [64].

Suppose $X^{(0)}$ is a non-negative data series.

$$X^{(0)} = (x^{(0)}(1), x^{(0)}(2), \ldots x^{(0)}(n)) \tag{12}$$

A single AGO is used to sum the established $X^{(1)}$. The following generating sequence is obtained:

$$X^{(1)} = (x^{(1)}(1), x^{(1)}(2), \ldots x^{(1)}(n)) \tag{13}$$

where

$x^{(1)}(k) = \sum_{i=1}^{k} x^{(0)}(i)$, k=2, 3, ..., n

From this, we have the formula:

$$x^{(1)}(k+1) = ax^{(1)}(k) + b \tag{14}$$

Equation (14) is the basic DGM (1,1). The least squares method along with the differential and difference equations are used to obtain parameters *a* and *b*.

$$\hat{a} = \begin{bmatrix} a \\ b \end{bmatrix} = (B^T B)^{-1} B^T Y \tag{15}$$

where $B = \begin{bmatrix} x^{(1)}(1) & 1 \\ x^{(1)}(2) & 1 \\ \cdots & \cdots \\ x^{(1)}(n-1) & 1 \end{bmatrix}, Y = \begin{bmatrix} x^{(1)}(2) \\ x^{(1)}(3) \\ \cdots \\ x^{(1)}(n) \end{bmatrix}$

Suppose $x^{(1)}(1) = x^{(0)}(1)$, we have Eq. (16):

$$\hat{x}^{(1)}(k+1) = \left[x^{(0)}(1) - \frac{b}{1-a}\right] a^k + \frac{b}{1-a}$$
$$\hat{x}^{(0)}(k+1) = \hat{x}^{(1)}(k+1) - \hat{x}^{(1)}(k), k = 1, 2, \ldots \tag{16}$$

Predictive accuracy measurement: The prediction error, defined as the estimated difference between actual values and predicted values generated by a forecasting model, serves as a crucial metric for assessing model performance [8]. Evaluating the prediction error is essential for determining the efficacy of a forecasting model. In this study, the mean absolute percentage error (MAPE) was employed to evaluate the accuracy of the forecasting models [21]. The error metrics for GM(1,1), NGBM(1,1), and DGM(1,1) are defined as follows:

$$MAPE = \frac{1}{n} \sum_{k=2}^{n} \left| \frac{x^{(0)}(k) - \hat{x}^{(0)}(k)}{x^{(0)}(k)} \right| \times 100\%$$

where $x^{(0)}(k)$ is actual value, $\hat{x}^{(0)}(k)$ is predicted value, and n is the observation.

According to C.D. Lewis (1982) [22], lower error rates are indicative of higher accuracy. Therefore, MAPE values below 10% signify predictions with high predictive accuracy (Table 2).

Table 2. MAPE forecasting accuracy reference criteria.

Ranges of MAPE (%)	Forecasting accuracy
≤10	Superior
10-20	Good
20-50	General
≥50	Poor

4. Results and discussion

4.1. Situation of renewable energy consumption in Vietnam

Vietnam is among the countries most affected by climate change. Over the years, Vietnam has actively fulfilled its commitments under the 2030 Agenda for Sustainable Development and has participated in the Paris Agreement within the framework of the United Nations Framework Convention on Climate Change (UNFCCC). One of the key requirements for Vietnam, as part of its participation, is to promote a robust energy transition to reduce greenhouse gas emissions. Investment decisions and policies must be implemented to decarbonise the energy sector. Developing renewable energy sources is considered an inevitable global trend due to their significant contribution to reducing greenhouse gas emissions, protecting the environment, and decreasing dependence on fossil fuels. Additionally, as the quality of life improves, the demand for energy consumption increases. Continued dependence on fossil fuels will deplete resources and increase greenhouse gas emissions. Therefore, forecasting future demand for renewable energy will support the formulation of policies to effectively exploit and utilise renewable energy sources for sustainable development.

The demand for renewable energy, including solar power, wind power, geothermal energy, and hydropower, has generally increased both worldwide and in Vietnam over time. Data on per capita renewable energy consumption from 1965 to 2023 show a marked increase in renewable energy use beginning in the 2000s (Fig. 1). Globally, the United States and China are the countries with the highest growth rates in renewable energy. Vietnam is a country experiencing high economic growth, rising urbanisation, and industrialisation, leading to an increasing demand for energy consumption. With environmental protection policies and the goal of achieving net zero by 2050, the Vietnamese government has implemented various actions to improve the environment, with a focus on renewable energy development. Vietnam's renewable energy consumption in the period 2019 to 2023 peaked in 2022 at 341 TWh, before dropping to 309 TWh in 2023. It can be explained that in 2022, due to the full operation of solar and wind projects commissioned under Vietnam's FIT policies, post-pandemic economic recovery increased electricity demand, favorable hydropower output, and still-manageable grid congestion. After 2022, curtailment pressures and reduced new investments led to lower renewable energy consumption in 2023.

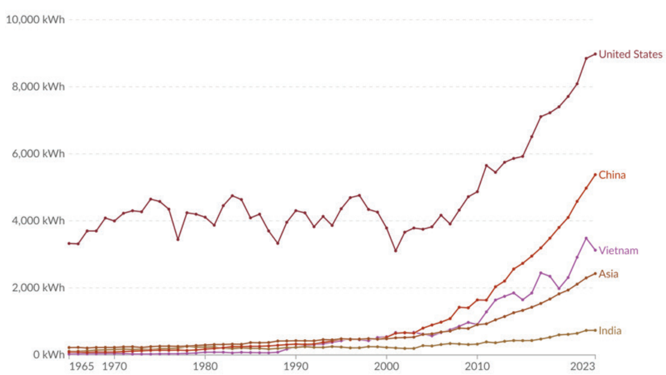

Fig. 1. Energy consumption from renewable sources from 1965 to 2023. Source: ourworldindata.org.

4.2. Predicting the value of renewable energy in Vietnam until 2030

The forecast for Vietnam's renewable energy consumption demand up to 2030, calculated using three grey forecasting models - GM(1,1), NGBM(1,1), and DGM(1,1) - is presented in Table 3. The results from the three models predict that Vietnam's renewable energy consumption will approximately double by 2030, reaching about 632.2 TWh according to GM(1,1), 602.5 TWh according to DGM(1,1), and 557.7 TWh according to NGBM(1,1).

MAPE (Mean absolute percentage error): The MAPE values for all models are below 10%, indicating a good fit and relatively accurate forecasts, as suggested by C.D. Lewis (1982) [22]. The MAPE values show that the GM(1,1) and DGM(1,1) models offer similar forecasting accuracy, while NGBM(1,1) performs slightly less well. Among these, DGM(1,1) yields the lowest MAPE (6.76%), suggesting it provides the most accurate prediction. The GM(1,1) model, due to its high accuracy (lower MAPE), is recommended for policymakers and stakeholders seeking reliable forecasts for planning renewable energy infrastructure and investment.

Table 3. Renewable energy consumption of Vietnam till 2030 (Terawatt-hours).

Year	Actual value	GM(1,1)	DGM(1,1)	NGBM(1,1)
2019	190	190	190	190
2020	223	246.8	243.8	205.5
2021	284	273.3	269.1	290.2
2022	341	302.7	297.1	329.5
2023	309	335.2	327.9	312.2
2024		371.2	361.9	357.7
2025		411.1	399.5	365.1
2026		455.3	440.9	405.4
2027		504.2	486.7	417.1
2028		558.4	537.2	459.5
2029		618.5	592.9	512.3
2030		632.2	602.5	557.7
MAPE (%)		6.88	6.76	7.2

Source: Results based on the author's calculation.

The results from this table suggest that renewable energy consumption in Vietnam is expected to continue growing over the next decade, with each of the three models predicting significant increases.

With the projected GDP growth target of 8% in 2025 and over 10% from 2026 to 2030, Vietnam's energy sector will face significant challenges in ensuring environmental protection and combating climate change. Fig. 2, based on the grey model results, indicates that the demand for renewable energy consumption is expected to increase substantially after 2025. Vietnam is prioritising renewable energy sources by increasing their share in the electricity mix, such as raising wind power from 1 to 22% (2020-2045), while reducing coal-fired power and hydropower from 29.6 and 30% (2020) to 18 and 9.3% (2045), respectively. However, to mitigate the risk of energy shortages and their impact on economic development, the structure of gas- and oil-fired power plants will be maintained, with their share increased to ensure effective supply to the national grid (rising from 13.1% in 2020 to 24% in 2045). During the period from 2021 to 2045, total investment in developing power sources is estimated to reach 5.27 trillion VND, with 2.97 trillion VND allocated for renewable energy sources. The government has increased the capital share for renewable energy in each period (from 44.4% in 2021-2025 to 70.9% in 2041-2045), with the largest investment package of 719 trillion VND allocated for the period 2030 to 2035.

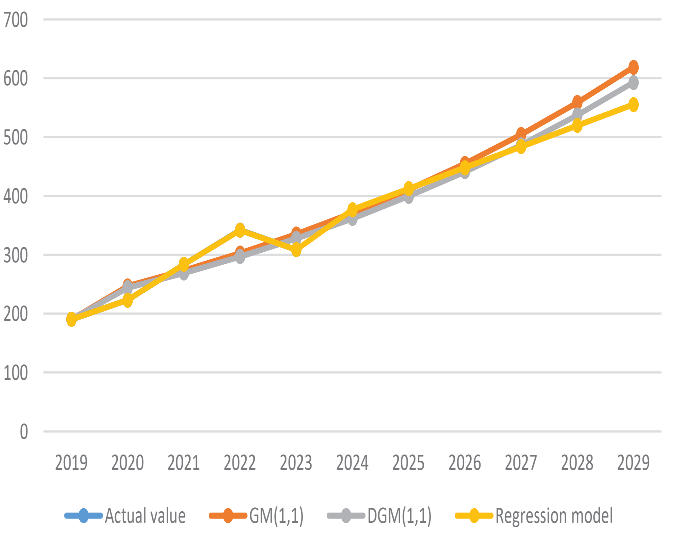

Fig. 2. Value prediction of renewable energy in Vietnam.

To effectively implement the Paris Agreement and advance its long-term climate strategy, Vietnam has issued a comprehensive plan for the period 2021-2030 aimed at reducing greenhouse gas emissions, particularly in the energy sector, which is projected to account for more than 70% of national emissions by 2030. In the Nationally Determined Contribution (NDC) submitted to the UNFCCC Secretariat in September 2020, Vietnam pledged to reduce total greenhouse gas emissions by 9% through domestic efforts, with the possibility of increasing this reduction to 27% conditional on international support. These commitments were further strengthened when Vietnam announced its ambition to achieve Net-Zero emissions by 2050 at the COP26, placing even greater emphasis on accelerating renewable energy development, improving energy efficiency, and reducing reliance on fossil fuels. As Vietnam continues to experience rapid economic growth and rising energy demand, promoting the sustainable transformation of the energy sector is essential not only for achieving climate goals but also for ensuring national energy security and social well-being. To this end, the government has fostered a favourable environment for domestic and foreign investment, encouraged technology transfer, and implemented policies to enhance energy conservation and efficiency-thereby supporting the country's transition toward a low-carbon, resilient, and sustainable energy system.

5. Conclusions

Vietnam's renewable energy consumption demand by 2030 shows that the demand for renewable energy will continue to increase with predictions around 632.2, 602.5 and 557.7 TWh in the GM(1,1), DGM(1,1), and NGBM(1,1), respectively. Among the models, DGM(1,1) achieves the most accurate predictions with the lowest MAPE (6.76%). Vietnam is striving to fulfil its commitment to phase out coal-fired power plants at the COP26 conference. In this context, participating countries will gradually eliminate coal-fired power plants, halt the construction of new plants both domestically and internationally, and expand clean energy. However, with the current high demand, Vietnam needs to make efforts to promote and harness renewable energy sources. Some key solutions to consider are as follows:

- It is essential to create a comprehensive legal framework. A Renewable Energy Law is crucial to enable favourable conditions for growth. Such legislation should aim to standardise technical regulations, ensure a transparent and competitive market, and uphold high standards in the operation and maintenance of all installations.

- Technological innovation in the renewable energy sector requires significant investment in research and development, particularly in the improvement and application of renewable energy technologies. Special attention should be given to the development of infrastructure and systems for the collection, treatment, and recycling of end-of-life solar panels and wind turbines to ensure environmental sustainability.

- It is necessary to adopt a rational and flexible energy strategy to adapt to the weather conditions and landscape of different regions of Vietnam. In the context of Vietnam, this necessitates the concurrent maintenance of conventional power generation systems to ensure a stable and reliable electricity supply.

- Finally, the introduction of effective electricity pricing mechanisms and investment guarantee policies is essential. This includes the adoption of feed-in tariff (FIT) schemes for grid-connected renewable energy projects, under which power companies are obligated to purchase all generated electricity through power purchase agreements. The associated costs should be integrated into the overall electricity pricing structure. Renewable energy projects should be granted priority access to the national grid, and the costs of the grid should be included in transmission and distribution fees.

Since Vietnam's renewable energy data remain limited with annual fluctuations influenced by policy changes, weather conditions, and grid congestion, this may reduce statistical reliability. The Grey model, while effective for small datasets, assumes relatively stable trends and therefore struggles to capture sudden policy shifts or market disruptions that commonly occur in Vietnam, which is rapidly transitioning in energy sector. In addition, the model's reliance on accumulated data smoothing may overlook short-term volatility caused by curtailment or irregular renewable output. Consequently, forecast results should be interpreted with caution, particularly in a dynamic policy and infrastructural environment like Vietnam.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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A digital transformation approach from traditional to virtual practice: A case study of gas welding corner-welding

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Abstract:

The digital transformation context has opened up many new opportunities in the field of education and training, allowing learning to take place in multiple environments with rich experiences. Converting the traditional vocational training model to virtual vocational training will bring many benefits, creating a flexible learning environment, improving knowledge and skills for learners, and reducing training costs. The article focuses on analysing the current situation of vocational training and teaching activities at vocational training institutions in the current period, therefore proposing solutions to digitally transform vocational training models, contributing to improving vocationcal training quality and enhancing competitiveness in the labour market. The article selects a pilot project to build a virtual vocational training model for virtual practice on the metal corner welding method using gas welding techniques. The virtual practice has been tested with 40 experts, scientists, teachers, and 270 students studying at five colleges and vocational secondary schools in Thai Nguyen province (before the administrative merger) that provide training in electricity, mechanics, welding, etc., and the results have shown its effectiveness when digitally transforming traditional professional practice models.

Keywords: **electrical profession, mechanics, practice, virtual reality, virtual vocational training.**

Classification numbers: **3.1, 3.2, 7**

1. Introduction

In the current economic situation, studying a university programme requires a minimum of four years, with a substantial financial cost of hundreds of millions. In fact, the number of high school graduates enrolling in university is decreasing and shifting towards vocational schools. Most vocational training programmes from colleges, intermediate schools, and even short-term vocational training courses require significantly less time and money, making them suitable for most students, especially in economically disadvantaged areas. The challenge with vocational training is ensuring the quality of training meets the needs of learners who, after studying, need to possess solid skills and be ready to work immediately without requiring retraining by businesses. However, if vocational skills are to be trained to a proficient level, investing in equipment, machinery, and materials for vocational training is also very costly, particularly in high-tech manufacturing industries. There is a need for solutions to support vocational training programmes to reduce costs. Even universities that train in technical fields such as mechanics and electronics still lack practical models and modern equipment.

Based on the survey and analysis of the situation of vocational education in our country over the past ten years, the policies and concerns, along with the projects on vocational training, focus on mechanical vocational training, training methods, and generalising the situation of applying science and technology, such as virtual reality (VR) technology, in building design and simulating virtual and remote practical lectures to support the improvement of training quality. Virtual reality is a simulated experience that employs 3D near-eye displays and pose tracking to provide the user with an immersive feel of a virtual world. Applications of virtual reality include entertainment (particularly video games), education (such as

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medical, safety, or military training), and business (such as virtual meetings). Augmented reality (AR) is an interactive experience that combines the real world with computer-generated 3D content. However, through the analysis and evaluation of section 3.4, it is evident that vocational training activities in general, and mechanical vocational training in our country, have not met the quality requirements; equipment and training methods remain limited, and there has been no innovation in training methods. This is one of the reasons why the quality of vocational training has not met the demands of the current labour market.

Thus, in order to obtain an objective assessment of the current status of vocational training support equipment at educational institutions nationwide, it is crucial to research, survey, synthesise, and develop an objective, honest, and accurate report on vocational training support equipment. This will serve as a basis for proposing solutions to innovate current vocational training models and teaching methods. This article will focus on researching, surveying, synthesising, and analysing the current status of vocational training support equipment at a number of vocational training institutions, with a pilot study at vocational training schools in Thai Nguyen province*.

2. Research methods

Because the research objective of the article is to build a virtual practice lesson with practical application, the research method employed is a combination of the following methods:

Document analysis and literature review: The authors use this method to search for and collect documents, books, newspapers, and scientific research works, both domestically and internationally, related to the application of information technology and advanced technologies such as virtual reality and augmented reality, to develop practical solutions and simulate lessons in virtual environments. This includes inheriting the content of outlines, lectures, lesson plans, and practical lesson content from various vocational training institutions.

Field survey: Conducted at a vocational training school in Thai Nguyen city that provides mechanical training, this survey aims to observe and understand the teaching process. Visual survey images serve as the basis for constructing virtual practice models with operations suitable for technical and skill requirements.

Modelling method: Based on collected images of tools, instruments, and equipment used in mechanical, welding, and electrical practice exercises, the research team maps these into graphics software and processes any noise. Subsequently, software tools are employed to create 3D models of tools, instruments, and equipment such as welding machines, welding rods, steel billets, and protective gear. Technical support technologies are utilised to create 3D models of equipment and instruments used in mechanical equipment manufacturing, including 3Ds Max for shaping, ZBrush for detailing and concavity, Substance Painter for material creation, and Maya for movement and animation.

Experimental method: This involves using programming languages and control programming technologies such as C#, Unity 3D graphics library, and OpenGL to install the programme for testing simulations. This means integrating the equipment components and tools of each separate practice into a complete practice scenario. At the same time, the quality of the model and scenario corresponding to each practice is tested and evaluated.

Expert method: Meetings are held with a number of experts, teachers, and scientists with expertise in fields such as mechanical engineering, manufacturing, automation, or information technology training at various educational and training institutions in Thai Nguyen city. These meetings aim to interview and seek comments and advice on how to construct a virtual practice lesson, the steps involved, and the requirements that need to be met. Additionally, opinions and assessments are solicited regarding the quality of the 3D models digitising the equipment and tools used in the mechanical equipment manufacturing practice lesson, as well as the quality of the content of each virtual practice lesson.

3. Research contents

3.1. The need to conduct a digital transformation from traditional practice models to virtual practice models

In the context of the rapid development of digital technology today, the conversion of vocational practice models from traditional to virtual has become extremely important. The application of digital means and virtual

*Before the administrative merger.

vocational practice not only enhances the quality of teaching but also improves the experience of learners. Consequently, most countries worldwide have focused on researching and developing applications of virtual reality technology in building and developing software to simulate lessons and practices in the industry in general and the mechanical industry in particular. As a result, some achievements have been made, demonstrating the need for vocational training institutions in our country, including technical schools, to find solutions to exploit the application of virtual reality technology in designing appropriate, intelligent, and remotely adaptive practice lectures as tools for students and learners across the country, particularly in mountainous and ethnic areas.

Augmented reality technology helps overcome the difficulty of reading technical documents because augmented reality easily creates a link between representation and reality by overlaying virtual components on real devices [1-4]. Augmented reality has proven suitable for assembly operations (saving time), maintenance (reducing human error and task completion time) [5], as well as training. The application of augmented reality enhances interaction within the professional practice environment [5]. Augmented reality is also an effective technology platform for training in the field of mechanics [6, 7], even for practices that require high precision [8], by reducing the required mental workload. D. Scaravetti, et al. (2019) [9] demonstrated that working with an optimised augmented reality system can reduce stress compared to traditional practice systems.

In the context of mechanical engineering education, students often face difficulties in mechanical design, reading engineering plans or 3D models, making connections with real systems, and determining the kinematic chain of a mechanism. A preliminary experiment with students highlighted their interest in augmented reality [10]. Therefore, augmented reality increases motivation and enjoyment of learning, serving as a catalyst for students to explore and visualise complex phenomena [11]. This leads to significant improvements [12]. There are studies that have investigated and used augmented reality in learning, compared to virtual reality, augmented reality enhances the sense of “presence” and improves memorability [13], with performance highlighted by previous studies [14, 15]. Other literature reviews reveal promising trends and identify positive impacts of using augmented reality in education [16-18]; the advantages include increased learner motivation and positive attitudes, improved understanding and performance, heightened learner engagement, superior performance in physical tasks, and enhanced communication and group collaboration.

Currently, augmented reality is being developed by universities [19, 20]; however, no precise studies have been found on the relationship between the functions provided by augmented reality solutions and the need for technical demonstration in mechanical engineering. Therefore, it is essential to analyse these functions to assess the relevance and impact of augmented reality on learning. B. Dumas (2019) [21] emphasised that in the context of using augmented reality as an educational tool, it is essential to apply a technical solution that allows both teachers and learners to build skills relevant to the mechanical engineering profession. Different stakeholders should not be burdened with time-consuming programming or graphics activities. M. Nebeling, et al. (2020) [22] and H. Imottesjo, et al. (2020) [23] utilised CAD technology to represent and display 3D models to support the construction of detailed parts in practical lectures and to describe the detailed operation process.

In the context of engineering education, students encounter difficulties in mechanical design, such as reading technical sketches or 3D models, making connections with real systems, and determining the kinematic chain of a mechanism. Augmented reality solutions support the need for technical cognition or representation in the teaching of mechanical engineering. Using augmented reality technology, mechanical simulations can be easily demonstrated [24-26] using augmented reality in the mechanical profession in 2017 to build a simulation system that helps identify tools taken from a tool cart or to ensure the conformity of an assembly (verifying the presence or location of components). Augmented reality is well suited for the following purposes: gestures are simulated and superimposed directly on the real system on which the operator is working in the correct location. J.S. Ortiz, et al. (2017) [27] studied and proposed a virtual reality system for automotive mechanics training, specifically describing a virtual training system for the identification and assembly of automotive parts. The system includes a virtual reality environment developed with the Unity 3D graphics engine, which allows users to be more immersed in the teaching-learning process, optimising materials, infrastructure, and time resources, among other benefits. The proposed system enables users to choose the working environment and the level of difficulty during training.

Experimental results demonstrate the effectiveness of the system created through the interaction between humans and machines, oriented towards developing skills in the field of automotive mechanics.

Thus, vocational schools are now facing pressure to adapt to new technology trends to meet training needs in the digital world. The digital transformation of vocational practice models at vocational schools will create a more flexible and convenient learning environment for students. Virtual practice allows students to access courses and materials anytime, anywhere, through internet-connected devices, providing them with the flexibility to self-study and practice skills without having to attend school. This is not only a necessary step but also an opportunity to improve the quality of education and training, increase convenience, and save costs. To be successful, vocational schools need to continue investing in technology and human resource development while creating a safe, flexible, and engaging learning environment.

3.2. Current status of virtual reality technology application in vocational training activities

In developed countries such as the US, the UK, Germany, and France, training activities and education streams have focused on the development of vocational engineers. These nations have paid attention to, researched, exploited, and applied advancements in products to enhance practice in the field of smart vocational training, thereby constructing practice modules and practical lectures associated with advanced technologies in practice and experiments [28]. Consequently, the industries in these countries have developed remarkably and are at the forefront of the world, particularly in the mechanical sector [29, 30]. These countries have researched and developed applications of virtual reality and augmented reality technology to build software and smart practice modules that support the simulation of all practice lessons, experiments, and implementation processes in a visual and interactive manner within virtual space, akin to real space. Through this system, students can master the work of mechanics or any other profession [31], thereby contributing to the enhancement of training quality and the formation of a team of highly skilled workers upon graduation.

The research on the application of virtual reality technology techniques to the construction of virtual practice lessons for mechanical engineering, in particular, and other professions, in general, has garnered interest from many managers and scientists, achieving significant results. D. Scaravetti, et al. (2021) [32] provided a general analysis of augmented reality in the context of industry and higher education, detailing the process of determining augmented reality scenarios with technical constraints and focusing on research regarding its use and demand in mechanical engineering. They argued that the global industry is at the centre of the fourth industrial revolution, driven by the emergence of new digital solutions, particularly augmented reality. This technology is currently underutilised in higher education, especially for mechanical engineers. The application of virtual reality and augmented reality technologies will foster learning and develop learner autonomy. Simultaneously, the study assesses the relevance of augmented reality in the current context and its impact on training. The difficulties students face when approaching an engineering system are related to reading and understanding 2D and even 3D representations, a lack of knowledge about the functions of components, and the analysis of power transmission chains and motion conversion. The study has identified the relevance of augmented reality technology to teaching effectiveness and increasing the accessibility of knowledge for beginners. Other studies have presented augmented reality scenarios developed on various mechanical systems, utilising the relevant features of the augmented reality interface [33]. Furthermore, these experiences have allowed for the identification of specific problems related to augmented reality implementation. The choice of augmented reality devices and software facilitates a digital thread that integrates with the digital tools and files used by mechanical engineers [34]. Ultimately, the studies aim to evaluate how this technology can help learners overcome difficulties in different learning situations.

The use of virtual reality and augmented reality is a crucial aspect of developing professional skills adapted to the technological context that engineers must navigate. Since 2013, virtual reality and augmented reality have evolved from new technologies to practical teaching tools [35, 36]. Moreover, virtual reality and augmented reality represent educational technologies with significant advancements [37]. In 2018, there were studies indicating that more than 600 companies utilised augmented reality, finding it has superior potential and relevance compared to virtual reality [38]. The description of the augmented reality application model is presented in Fig. 1.

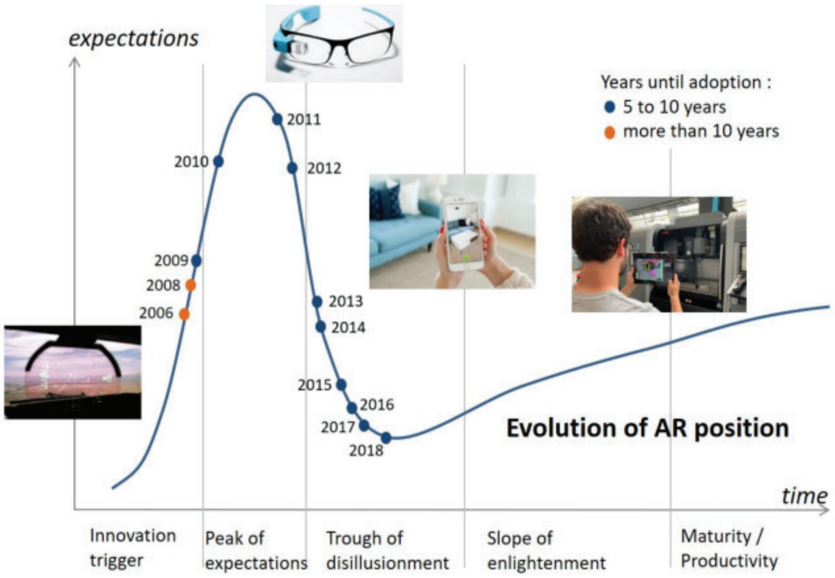

Fig. 1. Augmented reality application model [38].

In Vietnam, numerous research projects have been undertaken by scientists, educators, and managers interested in studying the application of technology to develop virtual practice lessons that support the teaching and training of various professions [39]. For example, the project "Virtual experiments and chemical experiments" led by Associate Professor Dr. Nguyen Duc Chuy from Hanoi National University of Education and his colleagues, utilised cameras to record real chemical experiments (as per the script) and subsequently converted the video signals into movie files that can be run on computers. The project "Scientific research and development of information and communication technology", coded KC-01-14, led by Associate Professor Dr. Vu Trong Sy and his colleagues, successfully developed software featuring 20 virtual experiments to facilitate the teaching of Physics 8 and 9, Chemistry 9, and Biology 8 and 9. The project "Virtual general physics laboratory", developed by the Institute of Technical Physics at Hanoi University of Science and Technology, employs virtual physics experiment software. This software fully designs the liquids, gases, and equipment used, ensuring the authenticity of the scientific processes and simulating experimental operations "almost" as they occur in reality, thereby creating a virtual practice and experimentation environment that closely resembles real life as displayed on the computer [40, 41].

Currently, many domestic educational institutions, ranging from vocational education to colleges and universities, as well as managers, scientists, and businesses, have shown interest in researching, developing, and implementing various solutions to transform the vocational training model. This transformation aims to shift from purely theoretical teaching and training or traditional practice equipment to virtual, smart, and remote vocational practice models by employing advanced technology, 4.0 technology, or virtual reality technology to design and build virtual practice software [42-44]. In particular, according to the leaders of some training schools, virtual practice not only adapts to the unpredictable developments of the COVID-19 pandemic but also represents a means of 'taking a shortcut' in the digitalisation of vocational training [44]. Virtual welding, virtual car repair, and other applications on virtual reality devices or modern software are being utilised by many vocational schools. With practical training accounting for 60-70% of the training programme, vocational and secondary schools have recently faced significant challenges due to the COVID-19 pandemic, which has interrupted practical training as students have been unable to attend school.

Thus, the current state of mechanical engineering training in vocational institutions nationwide is still lacking in practical equipment. These institutions have not yet fully exploited or kept pace with the applications of advanced science and technology, digital transformation, and the outcomes of the fourth industrial revolution, such as virtual reality and augmented reality, in developing virtual and smart mechanical practice training solutions [45, 46]. This shortfall has resulted in a decline in the number of students and individuals participating in mechanical vocational training, leading to a decrease in quality, whereby learners do not meet the skills required upon graduation from training courses.

3.3. Proposed solutions to convert traditional vocational practice models into virtual vocational practice

Virtual practice enables vocational schools to create online learning platforms featuring interactive materials, lectures, and exercises, thereby assisting students in understanding and applying knowledge more effectively. Advanced technologies such as 3D images, virtual reality, and interactive experiences provide students with opportunities to learn interactively and practice in a safe and realistic environment. Consequently, it is essential to enhance the application of virtual reality technology in the digital transformation of virtual practice models. Online classes also foster an interactive and engaging learning environment. Rather than merely sitting and listening to lectures from teachers, students can participate in interactive activities such as online discussions, educational games, and online assessments. This approach allows them to engage with knowledge in a more active and stimulating manner, thereby improving their comprehension and retention. As a result, online classroom solutions and virtual reality simulation systems are becoming increasingly popular and necessary in modern education. Smart classroom solutions and virtual reality simulation systems support human resource training in the automotive, welding, health, and pharmaceutical industries, with applications designed to provide interactive, hands-on learning experiences. In the era of Industry 4.0, education is undergoing significant innovation with the emergence of online classrooms and virtual reality simulation systems. This solution not only offers new learning experiences but also enhances the quality of education and training.

For this solution to be effective, vocational schools must establish a robust technology platform to support the implementation of virtual reality courses and simulations. This includes developing specialised applications and software, as well as building network infrastructure to ensure stable and fast internet connections. Additionally, vocational schools need to enhance and promote the development of training content, such as constructing online courses or virtual reality simulations. This content should be designed to reflect practical skills and knowledge pertinent to specific professions while being engaging and appealing to attract students' interest. Training and support for teachers to effectively utilise new technologies and develop high-quality educational content also play a crucial role. Educators need guidance on how to interact with students in online and virtual reality environments to optimise the learning process. One of the significant advantages of online learning and virtual reality is the ability to create an interactive and enjoyable learning environment. Therefore, it is essential to design interactive learning activities, such as online discussions, educational games, and online assessments, to stimulate student interest and interaction, while ensuring accessibility and the effective implementation of virtual reality simulation courses. This includes providing internet access and learning devices to all students and creating financial support policies for those from disadvantaged backgrounds. It is also necessary to design effective measurement and evaluation methods to ensure that online courses and virtual reality simulations achieve the desired learning outcomes. This may involve the use of online assessments, feedback from students, and monitoring their progress over time. For each learning module, specific simulations are required; for instance, when teaching mechanical engineering, simulation systems should create opportunities for learners to explore mechanical components through a variety of 3D simulation objects, thereby developing the fundamental principles needed in various manufacturing processes, including production, logistics, and maintenance.

Pilot project to build a virtual vocational training model for virtual practice on metal corner welding method using gas welding:

In this article, the authors investigate, test, and develop a virtual practice for the metal corner welding method employing gas welding techniques. Building upon traditional lessons, the authors establish a pilot process for metal corner welding using gas welding techniques, facilitated by virtual reality technology, as follows:

Details of the welding process steps:

Step 1: Prepare the tools and equipment required for the metal corner welding method using gas welding techniques, including gas cylinders, gas flow control valves, gas lines, metal pieces, welding rods, a welding torch, and protective gear such as gloves, helmets, and clothing.

Step 2: Create 3D models of the tools and instruments using software applications such as 3DS Max and Unity 3D.

Step 3: Execute procedures with the gas cylinder, including opening the cylinder, unscrewing the gas cylinder lock, and adjusting the gas cylinder gauges to meet the required specifications.

Step 4: Ignite the flame and adjust the steam or gas pressure.

Step 5: Welding process: first, heat the welding billet, insert the welding tip into the joint to be welded, and simultaneously introduce the welding rod into the weld. The welding rod should be moved from left to right across the area to be welded.

Step 6: Heat the copper until it melts into the weld to achieve the desired welding result.

Based on the above six steps for the method of welding metal corners using gas welding techniques, the project team proceeded to develop a virtual practice using virtual reality technology and other technologies, including:

There are numerous 3D modelling tools available worldwide. However, in this article, the authors utilise 3Ds Max and Unity 3D, as these are two convenient, user-friendly, and easy-to-use tools for creating 3D models while providing high-quality outputs (illustrated in the results of building 3D models of tools and equipment at the following link: https://daphuongtien.io.vn/detaicapbo/). Moreover, these two tools support exporting to various 3D model formats and can easily generate simulation videos of practical exercises. ZBrush is employed for creating shapes and convexities, Substance Painter is used for developing materials, and Maya is utilised for creating movement and animation.

The programming technology group responsible for building virtual, interactive practice lessons includes C#, the Unity 3D Engine, and VRML. These technologies are used to programme the control of initialising (loading) 3D models into the virtual reality environment, as well as to programme the control of camera settings, interaction with 3D tools, and the steps of the virtual practice process.

The flowchart of the virtual practice building process is shown in Fig. 2.

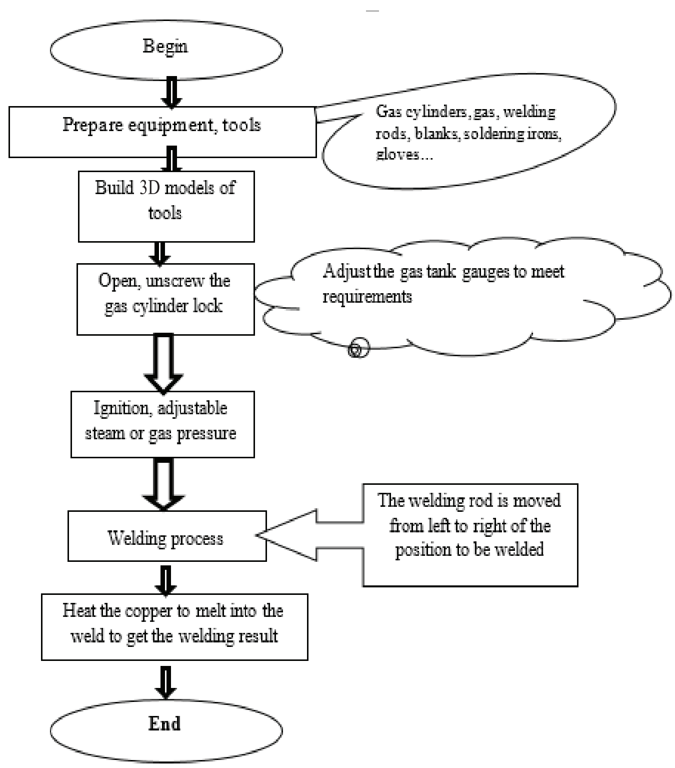

Fig. 2. Flowchart of the virtual practice building process. Source: Compiled by the authors.

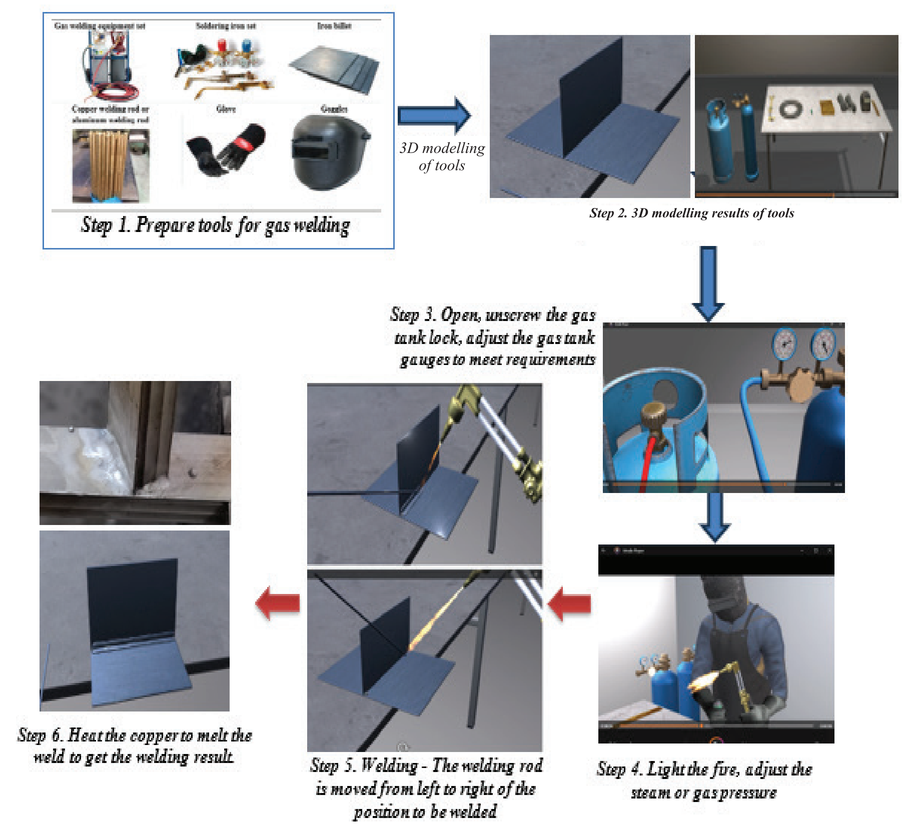

Fig. 3. Results of each step in building a practical model of metal welding using gas welding techniques. Source: Compiled by the authors.

Figure 3 illustrates each step in building a virtual practice model from preparation to final result. The instructions for preparing the necessary tools, equipment, and components used in the practice, as well as determining cutting lines and connecting/adjusting gas cylinders are provided under each image.

Fig. 4. Tools, instruments, and components used in the practice. Source: Compiled by the authors.

Figure 4 shows all the tools, equipment, and components used in practice, which include a gas cylinder, regulator, gauge, soldering iron tip, handle, and iron billet.

Figures 5 and 6 are illustrations of the iron billet, gas cylinder valve, igniting the soldering iron, and the welding process.

3.4. Evaluation of virtual simulation programme for practical practice of fillet welding technique using gas welding

Section 3.3 above presented the construction of a virtual simulation programme for a gas welding corner-welding practice lesson, developed based on research into the content of a traditional practice lesson. Multimedia methods, such as cameras and scanning, were employed to collect tools, instruments, and related components used in the practice lesson, facilitating the creation of a 3D model for each tool and component. Building upon this foundation, the design,

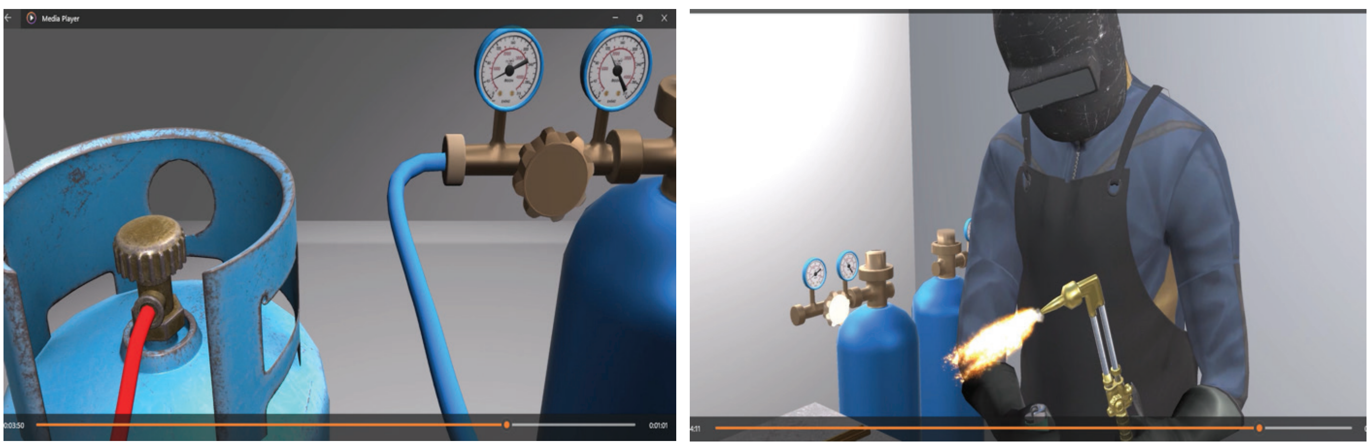

Fig. 5. Illustration of gas cylinder valve and soldering iron ignition. Source: Compiled by the authors.

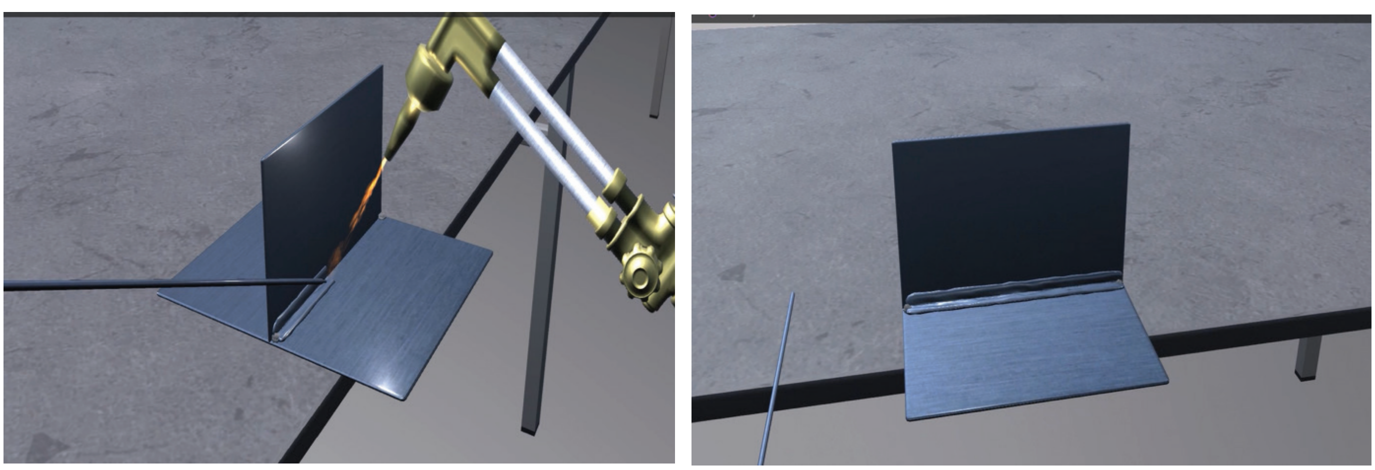

Fig. 6. Illustration of welding process and welding results. Source: Compiled by the authors.

arrangement, and assembly of a virtual gas welding corner-welding practice lesson were carried out.

To evaluate the quality and convenience of the virtual simulation system for the practical welding of corner pieces using the gas welding method, the article assessed the system by organising a scientific workshop and inviting approximately 40 experts, scientists, and teachers with specialised knowledge related to welding, electrical engineering, and mechanical engineering, as well as 270 students from five colleges and vocational schools in Thai Nguyen province that offer training in electrical, mechanical, and welding disciplines.

The scientific workshop focused on presenting two main topics: an overview of the content of the traditional practical lesson teaching script and a demonstration of the programme introducing the main functions guiding the virtual vocational training skills practice lesson on corner welding using the gas welding method within a simulation software environment. The results received evaluations from 40 experts, scientists, and teachers, as well as 270 students from five colleges and vocational secondary schools in Thai Nguyen province that provide training in electricity, mechanics, welding, and related fields (Table 1). The evaluation results and comments are as follows:

Table 1. Summary of survey results.

Survey criteria	Expert assessment achieved	Expert assessment not satisfactory	Learner assessment achieved	Learner assessment not satisfactory
About the interface (friendly, easy to use, easy to understand...)	34 (85%)	6	250 (93%)	20
About the quality of 3D models of tools, instruments and components used	38 (95%)	2	249 (92%)	21
About the practice tutorial script	37 (93%)	3	260 (96%)	10
About the accuracy and ease of understanding of the practice instructions	33 (83%)	7	248 (92%)	22
About the quality, logic of the audio guide to the practice lesson	37 (93%)	3	244 (90%)	26

Source: Compiled by the authors.

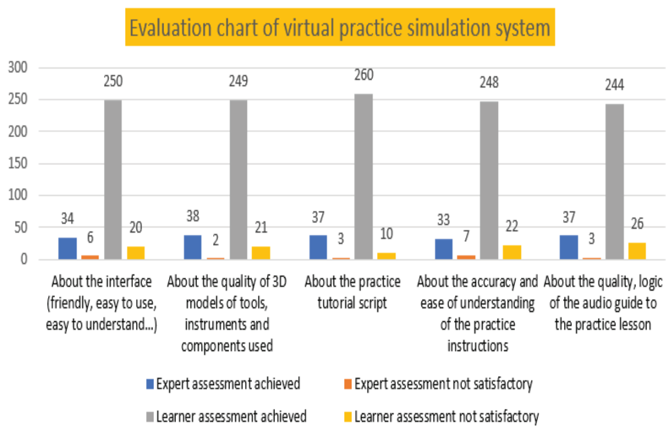

Fig. 7. Evaluation chart of virtual practice simulation system. Source: Compiled by the authors.

Based on Fig. 7, the following observations can be made:

Regarding the interface (friendly, easy to use, easy to understand): up to 85% of experts, scientists, and teachers rated it as satisfactory; up to 93% of learners rated it as satisfactory, with the remaining 7% suggesting adjustments to enhance user-friendliness.

Regarding the quality of the 3D models of tools, instruments, and components used in the practice: up to 95% of experts, scientists, and teachers rated the 3D models as satisfactory; up to 92% of learners rated them as satisfactory, with the remaining 8% recommending further improvements.

Regarding the practice instruction script: up to 93% of experts, scientists, and teachers rated the instruction script as satisfactory; up to 96% of learners rated it as satisfactory, while the remaining 4% rated it as unsatisfactory.

Regarding the accuracy and ease of understanding of the practice instructions: up to 83% of experts, scientists, and teachers assessed that it met the requirements; up to 92% of learners agreed, with the remaining 8% suggesting further revisions.

Regarding the quality and coherence of the audio explanation of the practice instructions: up to 93% of experts, scientists, and teachers assessed that it met the requirements; up to 90% of learners concurred, while the remaining 10% considered it inadequate.

The pilot application implemented at vocational training institutions in Thai Nguyen has demonstrated significant results. The details are presented in Table 2.

Table 2. The effectiveness of vocational training activities at educational institutions in Thai Nguyen province before and after implementing the virtual reality vocational training digital-transformation model.

Vocational training facility	Current status of practical guidance before applying virtual reality technology into practice (Source: Actual survey at school from learners at link: *https://forms.gle/d4KNtt7ZJvtqYXZh9*)	Effectiveness of applying virtual reality technology to support virtual reality practice in vocational training (Source: The authors; Virtual practice software - *https://daphuongtien.io.vn/detaicapbo*)
Thai Nguyen College of Economics and Techniques	Not yet 100% met, learners mainly use old equipment; Virtual reality technology has not been applied	100% of learners can practice virtually on the software. Learners can practice anytime, anywhere. Save time and investment costs.
Vietnam-Germany Industrial College	Not yet 100% met, learners mainly use old equipment; Virtual reality technology has not been applied	100% of learners can practice virtually on the software. Learners can practice anytime, anywhere. Save time and investment costs.
College of Technology and Commerce	Not yet 100% met, learners mainly use old equipment; Virtual reality technology has not been applied	100% of learners can practice virtually on the software. Learners can practice anytime, anywhere. Save time and investment costs.
Thai Nguyen Industrial College	Not yet 100% met, learners mainly use old equipment; Virtual reality technology has not been applied	100% of learners can practice virtually on the software. Learners can practice anytime, anywhere. Save time and investment costs.
Thai Nguyen Vocational School	Not yet 100% met, learners mainly use old equipment; Virtual reality technology has not been applied	100% of learners can practice virtually on the software. Learners can practice anytime, anywhere. Save time and investment costs.

Source: Compiled by the authors.

The research findings presented in this article hold significant implications for innovating teaching methods and enhancing the quality of practical skills training in vocational lessons for students and learners. Consequently, this approach enables learners to practise proficiently using vocational virtual reality simulation software. It provides learners with access to virtual digital equipment based on virtual reality technology, allowing for convenient practice without constraints of space and time, thereby facilitating practice anytime and anywhere. Therefore, the proposed solution demonstrates practical significance by reducing investment costs.

4. Conclusions

To support practical training, a more effective solution is required, namely the development of virtual practice models. Through these virtual practice models, learners interact within a simulated environment closely resembling reality, enabling them to experience and practise vocational skills comparable to those in a real setting. Learners can access documents, knowledge, equipment, and working processes via a virtual interface, and engage in exercises, simulations, and interactions with virtual elements. They can carefully observe virtual reality videos, study sample operations to understand the technical movements of experts, and practise basic movements independently without equipment. Subsequently, learners can practise on technical equipment; for example, driving lessons have begun implementing this method, allowing learners to train in virtual cabins. Thus, training facilities can easily increase practice time for learners while reducing costs. If students are passionate about their profession and capable of self-study, they will develop highly effective practical skills. Furthermore, this solution enhances learners' interest in practising and testing within the virtual reality system. Simultaneously, the virtual practice model helps to mitigate risks during the training process. Moreover, it allows learners to experience diverse situations and scenarios without geographical or physical constraints, providing a safe environment while facilitating the detection and correction of errors and mistakes. This supports learners in improving their skills and confidence before performing practical operations on equipment in real environments. Vocational skill training at vocational training institutions today plays a crucial role in creating a substantial labour force for the country, contributing to the development of production, the economy, and social security. In recent years, although the state has prioritised vocational training with specific and clear orientations and goals, significant achievements have been realised, altering the allocation of labour resources nationwide and generating wealth for society.

In the future, the authors intend to continue improving the software interface and the functions of vocational practice guidance, enhancing the quality of lecture explanations. They also plan to add and update other vocational skill practice lessons in alignment with current trends to train vocational skills for students and learners across the country.

CRediT author statement

Nguyen Van Huan: Conceptualisation, Methods, Writing overview of research situation, Writing and Running virtual practice models; Nguyen Thi Hang: Survey, Analysing and Processing data, Writing conclusions; Nguyen Thi Hue: Editing, Proofreading, Translation, Document search support, Document synthesis.

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COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

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Insights into English as a foreign language students' engagement in English medium instruction classes

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Abstract:

English medium instruction (EMI) has gained significance in English language education; however, research on English as a foreign language (EFL) students' engagement in EMI classes in different contexts, such as Vietnam, has not been extensively explored. This study aims to investigate EFL students' engagement in EMI classes. One hundred and eighty students from various majors were sampled from a higher education institution in Ho Chi Minh city, Vietnam. A quantitative approach was employed, utilising a closed-ended questionnaire for data collection. Data were analysed using SPSS software for descriptive and inferential statistics. The findings demonstrated that EFL students exhibited a high level of engagement in EMI classes across three aspects: behavioural, cognitive, and emotional engagement; however, students showed their cognitive engagement at the highest level, followed by emotional and behavioural engagement. Notably, the study revealed a significant difference in EFL students' engagement in EMI between hard sciences and soft sciences. This study suggests several pedagogical implications for enhancing student engagement in EMI classes at the context of higher education institutions in Vietnam and other similar ones.

Keywords: **engagement, English as a foreign language (EFL), English medium instruction (EMI), hard sciences, soft sciences.**

Classification numbers: **3.1, 3.2, 9.1**

1. Introduction

English, as a globally dominant lingua franca, plays an irreplaceable role in international communication and affects various fields, such as business, diplomacy, and academia. This phenomenon is clearly evident in cyberspace, where the English language can be found throughout online content and worldwide media [1]. Consequently, this linguistic hegemony of English has enabled it to become the primary medium for global communication and to establish policies in numerous cultural settings with different languages. Accordingly, English has become an international language of instruction for those who do not speak it natively. To put it simply, the use of English, which is not the students' first language, is intended to transmit subject content rather than language content. This is referred to as EMI [2], commonly adopted in universities and schools in various contexts as part of internationalisation efforts, which aim to improve students' English proficiency while delivering subject knowledge [3].

Research on different aspects of EMI in the Vietnamese context has been conducted. For example, H.V. Nguyen, et al. (2022) [4] identified that while EMI could enhance students' English language skills and academic skills, students still encountered a number of pedagogical and cultural difficulties. They highlighted the necessity for contextualised methods that consider students' diverse linguistic requirements. Likewise, T.T.H. Le (2021) [5] conducted a study that found students in EMI classes still faced various challenges related to English language skills and subject knowledge. Additionally, N.T. Hoang, et al. (2023) [6] carried out a study exploring students' challenges in EMI courses and found that while students had positive perspectives on EMI courses, they still faced several challenges (e.g., students' English language

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knowledge, motivation, and lecturers' teaching methods) in taking EMI courses. Nevertheless, the research focus on students' engagement in EMI courses remains underexplored, indicating a need for further investigation.

Within the research context of a higher education institution located in Ho Chi Minh city, both local and international training programmes are delivered in Vietnamese and English, respectively. Regarding the international training programmes (e.g., civil engineering, environmental engineering, mechatronics, international business, marketing, accounting, etc.), English is used as the main language of instruction. Students are required to meet the English language proficiency standards for such training programmes; therefore, they must take general English courses and pass an English language proficiency test. It has been observed that EMI students in this context often face challenges in their studies. The predominant issue for them is that many students struggle with technical terms in English and with subject content delivered in English. Additionally, they are seen to have difficulties engaging in EMI classes due to their insufficient understanding of subject knowledge. Therefore, this study endeavours to investigate students' engagement in EMI classes at a higher education institution located in Ho Chi Minh city. It addresses a pair of research questions as follows:

What is EFL students' level of engagement in EMI classes?

Are there any significant differences in EFL students' engagement in EMI classes in terms of academic disciplines? If so, how?

This research can contribute to the existing body of literature in understanding EFL students' engagement in EMI classes. Moreover, it is hoped to provide insights into EFL students' engagement in EMI classes at higher education levels, which can be practical for stakeholders (e.g., teachers, students, administrators) to adjust teaching strategies, curriculum designs, and language policies.

2. Literature review

2.1. Student engagement in English medium instruction

Student engagement is crucial for improving learning outcomes and is typically categorised into three components: behavioural engagement (participation and effort in activities), emotional engagement (attitudes towards education), and cognitive engagement (mental investment in learning and self-regulation). These dimensions are interrelated and essential for effective learning in higher education [7, 8]. Engaged students are more motivated, persist longer, and demonstrate a deeper understanding of course materials [9]. Collaborative environments also enhance engagement by fostering skills such as communication and teamwork, which are valuable both academically and professionally [10].

EMI is an increasing trend globally, especially in non-native English-speaking countries, where it is used to prepare students for international academic and professional settings [11]. EMI enhances students' English proficiency and helps them navigate globalised academic and work environments. Additionally, research [12] shows that EMI not only improves language skills but also promotes intercultural collaboration and prepares students for success in global markets. In many contexts, EMI is implemented through various strategies, such as offering English for academic purposes courses and directly enrolling students in EMI courses [13].

Students' engagement in EMI classes can vary significantly depending on their academic discipline. In hard sciences (e.g., civil engineering, environmental engineering, mechatronics), students are more likely to exhibit high cognitive engagement but may struggle with emotional engagement if their language proficiency is low [14]. In soft sciences (e.g., international business, marketing, accounting), language plays a central role in learning, leading to greater emotional and cognitive engagement [15]. Previous studies suggested that EMI can boost both language skills and job prospects, but the level of engagement differs across fields, highlighting the need for tailored teaching strategies [16, 17].

2.2. Studies on English medium instruction

Previous research has studied EMI in a variety of circumstances and from a range of perspectives. Likewise, L. Jiang, et al. (2024) [18] investigated students' motivation and active participation in EMI programmes at Chinese universities. They employed a multidimensional approach to modify the motivation and engagement scale data from 696 students across 34 universities. It was found that students reported high levels of motivation and engagement in EMI classes, and individual variations (e.g., gender, region, grade, major, and institutional prestige and profession) affected students' motivation and engagement in EMI classes. In a similar context, H. Liu, et al. (2024) [19] examined the relationships between language boredom, engagement, and buoyancy by using a questionnaire to collect data from 2,992 Chinese language learners. The results indicated that the factor of boredom strongly and negatively influenced engagement. The factors of engagement and buoyancy acted as mediators in the relationship between boredom and engagement. In the Vietnamese context, T.T.Q. Tran, et al. (2019) [20] explored Vietnamese higher education institutions' views on students' English proficiency and how they prepared students' English proficiency for EMI classes. Using document analysis and purposive sampling at eight universities, their qualitative study found inconsistencies in English proficiency requirements as well as differences in practices across preparatory programmes. Furthermore, T.H. Tran (2024) [21] studied the effects of EMI programmes at a northern university in Vietnam and found that EMI courses could improve students' job prospects, English proficiency, and social skills. Additionally, EMI students faced various challenges, such as learning methods and emotional issues.

Moreover, H.Q. Ngo, et al. (2021) [22] assessed the impact of motivation on student engagement and academic achievement, reiterating that only high-level intrinsic motivation may provide cognitive involvement, with no direct influences from any form of extrinsic motivational characteristics to improve learning outcomes. Subsequently, H.T. Nguyen, et al. (2022) [23] and H.T. Nguyen, et al. (2023) [24] explored EFL students' perceptions of the challenges in EMI classes to support the implementation of EMI classroom practices, using a questionnaire and interviews to collect data from 280 students. They found that students encountered different challenges (emotion, motivation, engagement with learning materials, and English language proficiency) during EMI courses.

The studies collectively underscore the significance of EMI in global education by offering insights into both its potential benefits and challenges across various educational environments. Nevertheless, the research conducted in the Vietnamese context regarding the participation of EFL students in EMI classes has certain limitations. To that end, this study aims to examine EFL students' level of engagement as well as their engagement in EMI classes concerning different majors.

3. Methodology

3.1. Research setting and participants

This study was conducted at a higher education institution in Ho Chi Minh city, where the EMI programmes are designed to cultivate English-speaking and globally minded students. The teaching and learning activities are carried out in English. Students participate in affiliate programs or international standard programs in which English is the primary language of instruction. To pursue such training programmes, students are required to take general English courses (from English 1 to English 6, totalling 18 credits) and pass an English proficiency test. If students already possess international English proficiency certificates indicating band scores of 5.0 or higher, they can enrol in EMI courses without taking general English courses. In EMI courses, all subjects are taught in English by both foreign and local lecturers. Additionally, all exams are administered in English.

A quantitative approach was employed to investigate EFL students' engagement in EMI classes. A total of 180 participants were sampled using the convenience sampling technique. There were 71 (39.4%) juniors and 109 (60.6%) seniors. 84 (46.7%) participants majored in hard sciences (e.g., civil engineering, environmental engineering, mechatronics, etc.), while 96 (53.3%) participants were in soft sciences (e.g., international business, marketing, accounting, law, etc.).

3.2. Research instrument

The questionnaire, which was adapted from the study by T.N. Le, et al. (2023) [25] was employed to measure the students' level of engagement in EMI classes. It consists of two sections: Section 1 seeks the participants' general information, and Section 2 includes 15 items collecting data on students' engagement in terms of behavioural (5 items), cognitive (5 items), and emotional engagement (5 items). A five-point Likert scale was used, ranging from strongly disagree to strongly agree. The questionnaire was piloted, and modifications in terms of language and content were made before it was officially used. Additionally, the instrument was designed in English and then translated into Vietnamese to ensure that respondents did not encounter any language difficulties.

To validate the questionnaire, confirmatory factor analysis was conducted on the 15 items divided into three group factors with a sample of 180 respondents. The results of the model fit showed that $\chi^2/df=2.14$, CFI=0.93, TLI=0.91, RMSEA=0.06, and SRMR=0.05, indicating an acceptable-to-good model fit. All 15 items loaded onto three factors were statistically significant ($p<0.001$) and indicated standardised factor loadings ranging from 0.62 to 0.80, confirming the construct validity of the questionnaire. The Cronbach's alpha of the questionnaire is 0.92 (behavioural engagement =0.80, cognitive engagement =0.89, and emotional engagement =0.83), which indicates that the reliability of the questionnaire was very high.

3.3. Procedures for data collection and analysis

The questionnaire in Google Forms was sent to students, and it took them around 20 minutes to complete; however, it took approximately four weeks to collect 180 valid responses. The collected data were analysed in terms of descriptive statistics (mean and standard deviation) and inferential statistics. The five-point Likert scale was interpreted as follows: 1-1.80: strongly disagree; 1.81-2.60: disagree; 2.61-3.40: neutral; 3.41-4.20: agree; 4.21-5.00: strongly agree. Intra-rating was used to guarantee the validity and reliability of data analysis. The data were analysed twice by the same researchers. First, the data were analysed, and results were obtained. Then, after three weeks, the same data set was re-analysed by the same researchers to cross-check the results. The same results from both analyses were obtained, indicating that the data analysis was valid and reliable.

4. Results and discussion

4.1. Results

4.1.1. English as a foreign language students' engagement in English medium instruction classes

Table 1 indicates that students displayed a high level of engagement in the EMI classes (M=3.88; SD=0.61) across all three engagement components. Specifically, students reported high levels of engagement within each component: behavioural engagement (M=3.81, SD=0.67), cognitive engagement (M=3.99, SD=0.69), and emotional engagement (M=3.84, SD=0.68). Out of the three types of engagement, cognitive engagement had the highest average score, indicating that students felt most mentally connected to the EMI course. Behavioural and emotional engagement were slightly lower, with behavioural engagement being the lowest. This suggests that students were most engaged cognitively in EMI classes.

Table 1. English as a foreign language students' engagement in English medium instruction classes.

No.	Engagement	N=180	
		Mean	*SD*
1	Behavioural	3.81	0.67
2	Cognitive	3.99	0.69
3	Emotional	3.84	0.68
	Average	**3.88**	**0.61**

Source: Data from this study.

EFL students' behavioural engagement in EMI classes:

The results in Table 2 reveal that most EFL students agreed that they tried to respond to all teachers' questions (item 5: M=3.93; SD=0.91), completed all their learning tasks (item 3: M=3.90; SD=0.87), and shared their perspectives (item 4: M =3.89; SD=0.90) in EMI classes. They also acknowledged that they participated in all learning activities in EMI classes (item 1: M=3.68; SD=0.97) and made an effort to attend all their EMI classes (item 2: M=3.67; SD=0.88). In brief, students tended to engage behaviourally in completing language tasks in EMI classes at a high level.

Table 2. English as a foreign language students' behavioural engagement in English medium instruction classes.

No.	Behavioural engagement	N=180	
		Mean	*SD*
1	I participate in all learning activities in EMI classes.	3.68	0.97
2	I try to attend all my EMI classes.	3.67	0.88
3	I complete all my learning tasks in EMI classes.	3.90	0.87
4	I try to share my perspective in EMI classes.	3.89	0.90
5	I try to respond to teachers' questions in EMI classes.	3.93	0.91

Source: Data from this study.

EFL students' cognitive engagement in EMI classes:

As seen in Table 3, EFL students asked questions to better understand what they were learning (item 9: M=4.11; SD=0.79) and engaged in learning activities to gain new knowledge (item 10: M=4.06; SD=0.71) in EMI classes. Additionally, they paid attention to learning activities (item 6: M=3.98; SD=0.86), stayed focused (item 7: M=3.82; SD=0.95), and requested explanations from teachers (item 8: M=3.96; SD=0.82) in EMI classes. In short, students demonstrated a high level of cognitive engagement in EMI classes.

Table 3. English as a foreign language students' cognitive engagement in English medium instruction classes.

No.	Cognitive engagement	N=180	
		Mean	*SD*
6	I pay attention to learning activities in EMI classes.	3.98	0.86
7	I stay focused during EMI classes.	3.82	0.95
8	I ask for explanations from teachers in EMI classes.	3.96	0.82
9	I ask questions to better understand what I am learning in EMI classes.	4.11	0.79
10	I get engaged in learning activities to gain new knowledge in EMI classes.	4.06	0.71

Source: Data from this study.

EFL students' emotional engagement in EMI classes:

EFL students (see Table 4) reported that they were motivated to take EMI classes (item 12: M=3.91; SD=0.96), interested in acquiring new knowledge (item 14: M=3.76; SD=0.89), and enjoyed participating in learning activities (item 15: M=3.81; SD=0.79) in EMI classes. Additionally, they felt comfortable sharing their thoughts during class discussions (item 13: M=3.88; SD=0.90) and were excited to discuss the topics (item 11: M=3.82; SD=0.88). Generally, EFL students appeared to engage emotionally in EMI classes at a high level.

Table 4. English as a foreign language students' emotional engagement in English medium instruction classes.

No.	Emotional engagement	N=180	
		Mean	*SD*
11	I feel excited to discuss the topics in EMI classes.	3.82	0.88
12	I am motivated to take EMI classes.	3.91	0.96
13	I feel comfortable sharing my thoughts during class discussion in EMI classes.	3.88	0.90
14	I am interested in learning new knowledge in EMI classes.	3.76	0.89
15	I enjoy partaking in learning activities in EMI classes.	3.81	0.79

Source: Data from this study.

4.1.2. Differences in English as a foreign language students' engagement in English medium instruction classes in terms of academic disciplines

As shown in Table 5, there were significant differences in students' engagement in EMI classes based on their majors. Students majoring in soft sciences tended to be more engaged in EMI classes than those majoring in hard sciences. Students in soft sciences (M=3.94; SD=0.67) exhibited a higher level of behavioural engagement (t=2.030; p=0.044) than those in hard sciences (M=3.74; SD=0.63). Similarly, students in soft sciences (M=3.94; SD=0.63) demonstrated a higher level of cognitive engagement (t=2.575; p=0.011) than those in hard sciences (M=3.68; SD=0.71). Finally, students in hard sciences (M=3.72; SD=0.63) showed a lower level of emotional engagement (t=2.002; p=0.047) compared to those in soft sciences (M=3.90; SD=0.55).

Table 5. Differences in English as a foreign language students' engagement in English medium instruction classes in terms of academic disciplines.

	Soft sciences mean (SD)	Hard sciences mean (SD)	t	Sig.
Behavioural engagement	3.94(0.67)	3.74(0.63)	2.030	0.044*
Cognitive engagement	3.94(0.63)	3.68(0.71)	2.575	0.011*
Emotional engagement	3.90(0.55)	3.72(0.63)	2.002	0.047

*p<0.05. Source: Data from this study.

4.2. Discussion

This study had two key findings. First, the study showed that EFL students actively engaged in EMI classes, with cognitive engagement being the most prominent, followed by emotional and behavioural engagement. This suggests that students were not only actively involved in their learning but also engaged intellectually and developed emotional connections to the content. In terms of behavioural engagement, EFL students demonstrated a high level of engagement in EMI classes. As students in this study were required to have good English language proficiency to take EMI classes, they may have felt eager to engage in these classes to achieve good academic results. Therefore, they tried to engage in EMI as much as possible. This finding partially aligns with that of A.J. Fredricks, et al. (2004) [26], which showed that academic achievement and behavioural engagement were positively correlated.

Concerning cognitive engagement, students were deemed active in engaging in EMI classes for knowledge. They may have been aware of the importance of the knowledge taught in EMI classes, leading them to pay close attention to learning activities, stay focused, and seek explanations for a better understanding of the content. Furthermore, students' active behaviours in class could lead to a high level of cognitive engagement. This finding was supported by N.M.M. Zainuddin, et al. (2020) [27], which revealed that participation in class activities was enhanced by active learning. As for emotional engagement, EFL students were found to engage emotionally in EMI classes at a high level. Within the EMI classes, they felt more excited, motivated, comfortable, and interested in participating in various learning activities for knowledge and content clarification. As discussed above, students exhibited high levels of behavioural and cognitive engagement, which could result in a high level of emotional engagement. This finding is consistent with J. Han (2023) [28] study, which discovered that engaging positive emotions, such as pleasure and joy when working with classmates and professors, as well as interest and curiosity about academic subjects, was beneficial. Students believed that they had strong connections, feeling comfortable sharing their perspectives during EMI class discussions. Consistent with the findings of A.J. Fredricks, et al. (2004) [26], many students felt at ease sharing their perspectives, which strengthened their sense of belonging in the classes.

Second, the study highlighted a significant difference in engagement levels between students in soft sciences and hard sciences. Students in soft science disciplines exhibited higher levels of engagement across all three dimensions (cognitive, behavioural, and emotional engagement) than those in hard sciences. This indicates that the nature of the subject matter and the teaching methods may influence how students engage with the content in EMI classes. Soft science subjects, with their emphasis on discussion and communication, may foster a more dynamic and emotionally invested classroom environment, while hard science courses tend to focus more on technical knowledge, requiring higher cognitive engagement but leaving less room for emotional or behavioural involvement. Moreover, students in soft sciences were more inclined to contribute fully to class discussions, demonstrate intellectual curiosity, and establish an emotional connection to the content. In contrast, hard science students tended to be more passive in their participation, with lower emotional involvement and less intellectual curiosity. This disparity in engagement can be attributed to the distinct characteristics of the subjects.

Additionally, soft sciences may involve more interactive and communicative learning environments, which can promote a more dynamic, emotionally invested, and behaviourally engaged classroom experience. On the other hand, hard science courses, while intellectually stimulating, may place greater emphasis on technical mastery, which could lead to more cognitive engagement but less emotional or behavioural involvement. This may be due to the naturally discussion-driven and participatory approach typical in these subjects, which tends to boost engagement. This finding is supported by S. Hidi, et al. (2006) [29] theory of situational interest. According to this theory, interactive and socially stimulating environments can increase student interest and engagement. Furthermore, students in hard sciences may face difficulties due to the complex technical terms, which may hinder their understanding of the taught content.

5. Conclusions

This study aimed to explore EFL students' engagement in EMI classes and the differences in their engagement in terms of academic disciplines. It found that students exhibited high levels of engagement across the main components (behavioural, cognitive, and emotional engagement) in EMI classes. Remarkably, EFL students' cognitive engagement was the most notable. Moreover, the study revealed that students in soft sciences were more likely to engage in EMI classes than those in hard sciences.

Several implications can be drawn. Firstly, curriculum design should take into consideration the diverse engagement needs of students in EMI classes. More discussion-oriented and interpretative activities can be adopted to boost the engagement and comprehension of soft science students, while hard science students might need additional support in expanding their technical English and participating in group problem-solving exercises to create a more dynamic educational setting. Learning resources should also be prioritised by instructors, as they have been shown to increase students' motivation and cognitive engagement. Secondly, to address the specific challenges faced in EMI classes, teacher training workshops are crucial. These workshops should focus on equipping teachers with strategies to enhance cognitive engagement, create inclusive environments, and foster emotional involvement. Activities that encourage critical thinking, such as problem-solving and case studies, are essential for improving students' understanding. Furthermore, engaging lessons can be more effective when they incorporate real-world situational applications that are beneficial for students' future careers. Particularly, role-playing, discussions, and gamified exercises are also vital for increasing behavioural engagement for all students, regardless of their subject matter or language proficiency, enabling them to comprehend and benefit from the courses. Last but not least, students' engagement in EMI classes is a crucial factor in fostering their eagerness and interest. When students participate in EMI classes related to their majors, they express more positively that they can acquire knowledge and apply it to activities in class, as language tasks, jargon, and conversational English situations can address specific disciplinary requirements. This, particularly when combined with various digital tools and an online platform, provides flexible opportunities for students to practice improving their English and effectively solve problems in EMI classes.

Although the study highlights students' engagement in EMI classes within a higher education context, it has some limitations that could impact the generalisability of the findings. Firstly, the small sample size and the single study context may limit the applicability of the results. Secondly, this study employed a quantitative approach for data collection, using a self-reported questionnaire, which may lead to biased and inaccurate responses. Therefore, further studies should expand the sample size across various contexts and collect data from multiple sources for triangulation.

CRediT author statement

Thi Gia Linh Nguyen: Collecting data and Writing the article; Quoc Thao Tran: Providing research guidance and Editing the article.

COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

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Zambalataya: Where are the 21st-century faithful today? A narrative inquiry

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Abstract:

Zambalataya is a blended phrase referring to the people of Zambales (Zambaleño) and Faith (Pananampalataya). This qualitative study seeks to investigate the evolving experiences of the faithful concerning their religiosity and spirituality. Employing narrative inquiry as the research design, the study engaged novena devotees and laypersons who served as church volunteers as its participants. Data were collected through the focus group discussions (FGD) method. The findings reveal that the 21st-century faithful in the Filipino society hold faith in high regard as integral to their lives and identity, acknowledge the evolving nature of faith traditions, and demonstrate a strengthened faith amidst societal changes. Religious faith is nurtured even through the evolution of showcasing faith. The material aspects of religion change, but its non-material aspect cultivates more from its origins, as exposed by the rising number of young faithful involved in rituals using different media to display modern religiosity. These findings significantly enhance our understanding of dynamic religiosity as reflected in personal spiritual expressions. Findings also foster ecumenism as they uncover the evolving religious and spiritual practices of the 21st-century faithful.

Keywords: **21st-century faithful, evolving religious traditions, religiosity, social change.**

Classification numbers: **4.1, 4.4, 11**

1. Introduction

The term Zambalataya, a fusion of the people of Zambales (Zambaleño) and Faith (Pananampalataya), underscores the deeply intertwined connection between Zambaleños and their faith, a heritage passed down through generations. The province of Zambales, renowned for its rich culture, is more than just picturesque landscapes. Its culture is deeply rooted in religious beliefs that permeate its indigenised social life. The study of cultures cannot be complete without the inclusion of religion [1], highlighting the cultural significance of Zambales.

Over the centuries, Western faith was introduced, restructuring the pre-colonial social order of the Philippines. The mission resettlement known as Reduccion, named by T.A. Agoncillo (1990) [2], profoundly seeded the Hispanic faith into the archipelago's soil, transforming the pre-colonial faithful. This resettlement programme uprooted the early people of Zambales not only from their places of birth but also from their traditional faith and practices, preserving the prominence of Hispanic faith and influence over the centuries.

Years have passed, and this religious faith was indigenised and made its own. Folk religiosity is "part of cultivating authentic faith expressions" [3]. As a result, although Filipinos have publicly acknowledged the influence of the Spanish on their behaviour, they have primarily maintained an orientalist worldview, giving rise to a type of Filipino Folk Christianity that refers to a religious movement indigenous to the area and maintains its identity as such, according to S. Stosic, et al. (2016) [4].

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With the advent of modernisation, sociocultural changes became inevitable in Filipino society. For J.M. Henslin, et al. (2006) [5], religion, as viewed from the conflict perspective, would change people when they have already grown out of life's difficulties. Changes among the faithful are caused by changes in their beliefs manifested in the rituals they practise and adopted by their community. For H. Spencer (1867) [6], social change occurs when society transitions from a state of homogeneity or simplicity to heterogeneity or complexity. Additionally, as society evolves, the functions of people become specialised. It is accepted that the evolution of society, where religion is an institution, depends on the level of conservation and adaptation of the community. This study intends to examine the religiosity and spirituality of the faithful in this day and age. The study's findings could be relevant to the in-depth understanding of the religious culture of the faithful, the preservation of religious culture, and the advocacy of ecumenism.

2. Theoretical framework

The evolutionary changes in society include changing social structures and institutions [7]. H. Spencer (1867) [6] created an analogy of society with a biological organism, where society progresses in size like an organism; thus, its structure becomes more complex. Over time, society evolves from simple societies to compound societies and from doubly compound societies to trebly compound societies. The faith demonstrated in the practice of religious rituals continues to adapt to social changes.

3. Scope and limitations

The study is limited to the qualitative exploration of the lived experiences, narratives, and perceptions of the faithful in a religious organisation, specifically the Roman Catholic Church, focusing on the novena devotees. The participants in the study do not include any clergy or academics but consist solely of parishioners. It is expected that their views and sentiments regarding the impact of their faith and religiosity might have similarities. Considering this limitation, the findings of the study only reflect the feelings and viewpoints of the devotees concerning their faith and religiosity.

4. Research methodology

The research adopts a qualitative approach, using narrative inquiry as its design. As a qualitative research design, narrative inquiry considers people's stories encompassing "culture, historical experiences, identity, and lifestyle" [8].

This study employed the FGD method to gather relevant data about the lived experiences and perceptions of the 21st-century faithful. These include both the old and young faithful who are actively engaged in church activities such as novena and other religious activities. Furthermore, thematic analysis was used to analyse and interpret the data gathered. The study was conducted in selected barangays in Castillejos, Zambales.

Eleven novena devotees were selected because the study focuses on describing and exploring the experiences and perceptions of the 21st-century faithful in a bicentennial town. There were nine female and two male participants aged from 30 to 81. All participants had been serving the church for at least two years in various capacities, they were chosen to serve as participants based on their depth of engagement in the religious activities.

The interview aimed to describe the religious rituals and explore the similarities and differences between these and traditional ones. Follow-up questions were also prepared to delve deeper into the effects of religious participation on the lives of the faithful. The open-ended questions were pilot-tested.

A series of empirical observations of the phenomenon was first conducted to gather predetermined data. Permission was then sought from the authorities to conduct the study. The FGD method was primarily used to gather data. After the devotees completed their novena in August 2015, they were invited for a group interview, guided by the prepared open-ended questions and conducted using the semi-structured interview method. They were asked about their religious practices and engagements, and their understanding of religious rituals. They were also asked to describe the differences between religious rituals performed in the past and current practices, as well as their lived experiences, including their spirituality as 21st-century faithful. The responses during the FGD were recorded and transcribed on a smartphone then translated using Google Translate and validated by a language expert. The semi-structured group interview was held after the devotees completed their novena in the afternoon. They were invited to the FGD which lasted for 45 minutes. The interview was recorded via smartphone and transcribed for analysis.

For ethical considerations, informed consent was obtained from the participants through a consent form before the FGD method was conducted. The study did not reveal the participants' names; instead, the code "ND" for novena devotees was used to maintain the participants' confidentiality.

Thematic analysis was primarily used to process the data gathered. In this process, the direct responses of the participants from the group discussion were transcribed. Thematic analysis is a research method that identifies, describes, and interprets patterns from the data [9]. Key concepts from the thematic analysis were further analysed to identify the research themes, which served as the research outputs. Finally, the themes were discussed and interpreted. The verbatim responses of the participants were categorised, clustered, and interpreted to generate relevant themes.

5. Results and discussion

5.1. Faith as life and identity

The 21st-century faithful in a bicentennial pueblo have diverse stories where faith is exhibited as a product of tradition and doctrine. Additional research demonstrates a favourable correlation between a person's religious experience and their physical and mental health [10]. A participant specified that the faith indoctrinated by the Spaniards has been passed down through generations and transformed into their indigenised faith. He said "Sa akin oo kasi iyong faith natin ngayon dalawa ang pinanggalingan tradisyon at doctrine kaya di pwede mahiwalay ang tradition at doctrine, sa karamihan na ineenjoy natin base sa mga unang pinakita dati na unang tradisyon. Naabsorbed natin na tradisyon ng mga Kastila na naipasa pasa sa generation-to-generation kaya pag hindi sinunod iyon parang di mo rin naabsorbed iyong paniniwala. Pagpapasa ng bawat pamilya sa pamilya nagsimula, bihira na iyong scenario na nahatak ka ng kaibigan mas malamang iyong lola ng lola mo ay napakareligious na naipasa sa pamilya, parang iyong values noon ay parang dumaan sa pamilya… influence ng family…" [ND6] (To me, yes, because our faith today comes from two sources, tradition and doctrine, so tradition and doctrine cannot be separated, for the most part we enjoy it based on what was first shown in the past, which is the first tradition. We have absorbed the tradition of the Spaniards that was passed down from generation to generation, so if you don't follow that, it's like you haven't absorbed your belief either. Passing on from family to family, it's rare that you are pulled by a friend, more likely your grandmother was very religious and passed it on to the family, it seems like your values were passed on to the family... influence of the family…). The other participant added "Iyon na po ang kinagisnan natin, para sa amin iyan na rin ang pananampalataya namin" [ND1] (That's what we've lived for, for us, that's our faith).

The majority of the participants pointed out that practising the tradition is proof of being faithful. By incorporating spiritually oriented viewpoints that involve recognising aspects of faith and human life, existing models of relational spirituality coping might be better understood [10]. "Though Catholicism kasi maraming ibat' ibang style may mga konserbatibo, meron mga katoliko dahil nabinyagan as Catholic siguro malaking rin ung effect nung part ka talaga… para pag may nagtanong sa iyo kung bakit may mga prusisyon na iyan pag active ka na nanakiisa may alam ka, may isasagot ka. Malaking bagay iyon kasi pag hindi mo alam iyong pinagmulan ng iyong tradisyon magkakaroon ng ideya ang iba na bakit katoliko siya pero hindi niya alam ang pinagmulan ng paniniwala. Mahalagang alam mo bakit mo ginagawa iyan, lalo na makikila ang paniniwala" [ND6] (Though Catholicism has many different styles, there are conservatives, and there are Catholics because they were baptised as Catholics, maybe the effect was big when you were really a part of it... so when someone asks you why there are processions when you are actively participating, someone knows. You, you have something to answer for. That's a big thing because if you don't know the origin of your tradition, others will have an idea why he is Catholic but he doesn't know the origin of the belief.

Table 1. Religiosity and spirituality of the 21st-century faithful. Source: Research results, derived from qualitative data analysis.

Sample direct statement	Theme	Description of the theme
"Kasi nga po ayon sa naranasan at karanasan ng tao huwag na tayo iiba sa atin na lamang may pagkakataon na humingi ako sa Kanya at talagang pinagkaloob Niya, iyan ay nagawa dahil sa pananampalataya ko sa Kanya" [ND3] (Because, according to human experiences and encounters, let us not stray away; I once had the opportunity to ask Him, and He truly granted it. This was made possible because of my faith in Him).	Faith as life and identity	The theme values the significance of faith in the lives of the faithful. Expression of faith reflects a person's identity and personality.
"Siguro noon napakaformal ng setting… ngayon animated na. Mas reachable ngayon kasi iyong mga Pari nakikipag usap ngayon hindi tulad ng mga pari noon reserved para mahirap abutin sila hindi mo sila maka bonding, di tulad ngayon mas open sila" [ND6] (Maybe in the past, the setting was very formal… but now, it's more animated. It's more reachable now because priests interact more; unlike before, when they were reserved and hard to approach, you couldn't bond with them. But now, they are more open).	Evolving traditions of faith	Religious practices and rituals continue to evolve in a more accommodating and practical manner.
"Nagkakaroon lang pagbabago sa klase ng tradisyon subalit ang paniniwala sa Panginoon ay andoon pa rin" [ND2] (There are just changes in the kind of traditions, but the faith in the Lord still remains).	Stronger faith amid social changes	Society continues to change. Socio-cultural components such as social values and attitudes waned, but faith continues to grow, as articulated in their enriched spirituality.

It's important that you know why you're doing that, especially to understand the belief). Religion directs life to better living. For Marx, religion serves as a getaway for those longing for ease from their life's burden [5]. Through religion, happiness becomes more realisable in most aspects of life. Living a healthy, productive, sound and content life is what religiosity promises [11]. This is also reflected in several participants' narratives, as illustrated in Table 1.

The Functionalist Perspective views religion as an institution that keeps language alive and preserves religious rituals and teachings to continue the past culture [5]. Religion influences and determines the quality of life. Studies show that religion has significantly affected our lives. It also provides information about how others view their religion and how closely they need to be connected in the future [11]. One of the participants pointed out that their involvement in various customary religious activities affected her life. "Malaki ang epekto lalo sa ispiritwal na aspeto ng buhay dahil sa ganyan na pagtalima lalo na iyong pagsamba sa ating Panginoon Diyos, kung baga napakalaking nagawa sa ating buhay lalo pag mayroon tayong suliranin iyong kahilingan natin sa Diyos nabibigyan ng katugunan" [ND2] (There is a big impact, especially in the spiritual aspect of life because of such obedience, especially your worship of our Lord God, as if a great deal has been done in our lives, especially when we have a problem, our request to God is answered). Becoming "maka-Diyos" entails one's religiosity and spirituality. Every faithful expresses his/her religiosity through "public practices" and spirituality through his/her "personal ways". Moreover, these two expressions of "maka-Diyos" among Filipino faithful are encompassing [12].

5.2. Evolving traditions of faith

Religion as an institution creates a moral community through reli gious rituals [13]. According to J.M. Henslin, et al. (2006) [5], religion is not exempt from changing or waning. Most participants found that religious doctrine is as dynamic as society, as evidenced by evolving religious rituals or repetitive activities and ceremonies. Only a few of today's faithful are revitalising the religious rituals of olden times. "Mangilan-ilan na lang ang sumusunod sa lumang tradisyon. Siyempre andito na tayo sa makabagong panahon at ng teknolohiya. Pag-usad ng panahon… Sumasama sa daloy ng pag-unlad…" [ND2] (Only a few follow the old tradition. Of course, we are here in modern times and technology. Progress of time… Going with the development…).

One of the participants pointed out "May mga scenario na ginagawa ang mga tradisyon dahil gusto talaga ng faithful, siguro maliit lang ang percentage na gumagawa dahil gusto o voluntary, iyong iba talaga parang mas malaki na iyong iba sumasama sa prusisyon lang dahil kailangan…" [ND6] (There are scenarios where the traditions are done because the faithful really want to, others join the procession just because they have to... it's rare if they want to...).

All participants specified that there are drastic changes in today's religious rituals compared to the spiritual rituals of the past. One of the participants said "Noon napaka traditional, talagang sinauna, makaluma sa pananamit pa lang eh nakabelo ang mga babae, ang mga lalaki at babae maayos ang damit… kasi feeling ko ngayon dadami lang ang tao pag may kailangan sila…" [ND6] (Back then, clothing was very traditional and old-fashioned; the women were veiled, and the men and women were well-dressed. Now I feel that more and more people pray when they need something). The ways the faithful express their religiosity vary from more conservative and traditional to progressive and novel means of manifestation.

Almost all participants agreed and pointed out that one of the major differences is in the manner of dressing when going to church. Previously, women wore long dresses with veils on their heads. One participant added that women even dressed according to the insignias of the saints they were honouring. "Noong unang panahon sa simbahan nagsusuot ng belo at mahahabang kasuotan , halimbawa kung ikaw ay nag iilaw kay Santa Maria sa prusisyon ikaw ay nagsusuot ng puti ganoon din kay Apo San Antonio ang kasuotan ay brown at dilaw. Gumagamit din sila ng tali sa baywang na kung ilang buhol iyon din ang bilang ng taon na susuotin mo ang nasabing damit" [ND3] (In the olden days, in the church, people wore veils and long clothes. For example, if you offered light to Santa Maria in the procession, you wore white, while for Apo San Antonio, the clothes were brown and yellow. They also used a tie around the waist, with how many knots that was also the number of years you would wear said dress). The display of faith and spirituality has also evolved, just like in clothing decorum.

One of the participants, in her story, stressed that during her time (her childhood) growing up in a "sarado Katoliko" (Active Catholic) family, Lent was observed sacredly, far different from today. There was a distinct time given for prayer and singing the Pasyong Mahal (Passion of Christ) to observe Christ's passion, death, and resurrection. At a young age, the children were encouraged and taught to sing Pasyong Mahal (Passion of Christ) till late at night at the kubol (street altar) and the following day at the church. She said "Mula noong maliit pa ako dahil nga ako ay galing sa sarado Katolikong pamilya ibang-iba na ang Semana Santa. May oras sa pagdarasal at pagpapasyon sa pagsasariwa sa buhay ni Kristo. Hinihikayat kami noong mga bata pa kami na magpasyon at manatili sa kubol magdamag at kinaumagahan nasa simbahan naman kami" [ND4] (Since I was little, because I come from a closed Catholic family, Holy Week has been very different. There is time for prayer and singing the "Pasyon" for reliving the life of Christ. We were encouraged when we were kids to read the 'Pasyong Mahal' and stay in the hut overnight, and the next morning we were at church). The traditional faithful during their era had experienced practicing faith in a very structured and fundamentalistic way, far opposite to the practices of the modern-day faithful, which is less structured and spontaneous.

The religious rituals before were very formal and fundamentalist, as one of the youngest participants pointed out "…eh ngayon ini-invite ang lahat na makiisa, mas naging open iyong simbahan sa lahat… open to all ang pinto ng simbahan ngayon walang sineseclude…" [ND6] (Now everyone is invited to join in, your church has become more open to everyone... the church door is open to all, and no one is excluded…). This generation's religious rituals are different, evolving into more vibrant practices. As the centre of faith and tradition, the church becomes more open to all as it reaches out to the community. Moreover, as the church exists beyond borders, it reaches out to the public in a way that is more inclusive and accessible.

The participants agreed that with the advent of the technological advancement era, only a few remain fundamentalists. One participant pointed out that it is proper for religious traditions to conform to a dynamic society. Participants from different generations admitted that Filipinos have indigenised the religious rituals of indoctrinated faith. Most participants noted that Filipinos have become "over-acting" in their versions of these religious rituals. One of the participants indicated "…minsan nagiging over acting na ang mga Pilipino, nagiging over acting ang bersyon ng mga Pilipino… anyway nabubuhay pa rin ang mga matatanda na nagpapaalala sa mga sinaunang gawain" [ND6] (...sometimes the Filipinos become over-acting, the Filipino version becomes over-acting... anyway the old people are still alive and remind us of the early practices). Nevertheless, as the other participant specified, the fear of totally uprooting the religious rituals from their foundation is monitored and even censored by the presence of the traditional faithful. Further, the rapid modernisation through technological advancement perhaps drastically and openly waned the socioeconomic aspects of life, which are tangible but not the spiritual aspect of life, the imperceptible element of life that remains sacred and personal.

As society becomes more complex, religion's structures and rituals vary. According to Whitehouse, amid social changes, "rituals become more routinised... doctrine and narrative become more standardised, and beliefs become more universalistic" [1].

5.3. Stronger faith amid social changes

Traditional society has been transformed through significant social changes. Postmodernism has led the faithful to become more focused on "local narratives" and the reawakening of spirituality [5]. Participants pointed out that more influential technology changed the perception of the faithful when doing traditional religious rituals. It would be difficult to bring back the traditional religious rituals because everything now is being modernised as pointed out by one of the eldest participants, "Sa takbo ng teknolohiya nagkakaroon ng pagbabago sa paniniwala ng mga kabataan sa mga artists na ginagaya na ng mga kabataan. Mahihirapan na ibalik ang tradisyon ,minomoderno na ang interpretation na ginagawa ngayon" [ND5] (In the course of technology, there is a change in young people's beliefs in the artists that the young people are imitating. It will be challenging to bring back the tradition; the interpretation that is being done today is being modernised). In addition, the trend today is that only the more senior people cling to the past, while the young have diversions as reasons for moving away from it [5]. Religion provides a concrete means to deal with uncertainty [14].

However, this does not mean social institutions such as religion are replaceable or comparable to scientific breakthroughs. The participants recognised that faith has become more active in this generation of modernisation. While the ways the 21st-century faithful perform religious rituals and practices are modernised, faith has matured and is nurtured more effectively.

Science can never replace religion; the former cannot dictate the morals of any action [5]. Religion continues to exist as long as people search for acceptable roles and behaviours [5]. One participant pointed out that faith remains strong among the youth albeit expressed differently. Despite challenges and social changes, religion remains strong even among the youth [5]. The differences in 21st-century faith are often misinterpreted by the elderly. The majority of participants specified that today's faithful have their unique way of professing faith but believe that faith continues to grow. "Ang nangyayari nawala iyong focus di nawala iyong Catholic faith… depende talaga sa time ang uri ng pagpapakita ng panampalataya… di nawala ang pananampalataya nagbago lang ng strategy at way kung paano siya ipapalaganap, katulad ng social media sa facebook paano ka makaka-envangalize kung iyong sinauna pa rin ang paraan. Lumago lalo di nawawala" [ND6] (What is happening is that you lost your focus, you did not lose your Catholic faith... the type of display of faith really depends on the time... the faith is not lost, it is just that the strategy and way of spreading it have changed, like social media on Facebook, how can you evangelise if you are still using the old way. Grow more, not disappear). Filipinos are known to be "Maka-Diyos" [12]. Even the youth, who are the 21st-century faithful (modern faithful) are considered equally religious as the traditional faithful, but express it in unique ways. The religiosity of Filipinos is shown beyond manifestation to oneself; but also in their relationship with others.

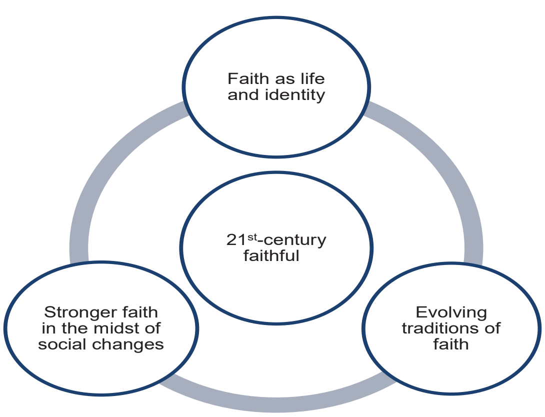

Fig. 1. Framework of the research findings.

Figure 1 shows the study's findings that centre on faith as life and identity, evolving traditions of faith, and stronger faith amid social changes.

6. Conclusions

The community of the 21st-century faithful consists of enculturated individuals who are old-style, traditional, and elderly and acculturated individuals who are active, dynamic, and young. The dominant faith recognised by the faithful is deeply rooted in the introduced Western faith, traced to the relentless practice of traditional religious rituals.

The 21st-century faithful vary in how they practise religious rituals; young faithful are non-traditional, shown in their more animated and less fundamentalist display of beliefs, which is quite the opposite of the rituals of the old-style faithful. However, both groups maintain a high level of understanding and appreciation of the original belief, as displayed in the lively practice of religious rituals. Religious faith continues to grow despite the vigorous evolution in the display of faith. The material aspects of religion (rituals and practices) evolve, but its immaterial aspect (spirituality) grows more from its roots. This is evidenced by the growing number of young faithful engaging in modern religious rituals using different media.

Relatively, the spirituality of the 21st-century faithful remains untainted despite the dynamic expression of both traditional and modern religiosity. The faith they embrace has uniquely transformed the lives of intergenerational faithful.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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China and India in the race for leadership of the Global South: Current status and international relations challenges

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Abstract:

This research examines the escalating competition between China and India for leadership in the Global South, highlighting their differing approaches to expanding influence across the region. The research focuses on their economic, political, and diplomatic strategies, particularly concerning the Belt and Road Initiative (BRI) by China, while India emphasises soft power, democratic values, and cultural diplomacy. The research method is primarily qualitative, using comparative analysis of China's and India's foreign policies to assess the broader geopolitical implications. The research explores the impact of this rivalry on regional and global governance, examining how it shapes the political and economic trends of the Global South. As both nations strive for dominance, the research considers the challenges and opportunities that such competition presents for smaller and emerging countries, as well as the potential risks of deepening divides within multilateral institutions.

Keywords: **China, Global South, India, international relations, leadership competition.**

Classification numbers: **5.1, 5.2, 5.3**

1. Introduction

Since the early days of the Asian-African Conference in Bandung in 1955, where China and India engaged in debates and cooperation against colonialism and racial discrimination, the two nations have continued to compete for leadership in the Global South. China, with its superior economic power and initiatives such as the Belt and Road Initiative (BRI), has increasingly positioned itself as a leading country in providing infrastructure investment for developing nations. Meanwhile, India, despite not possessing the same economic resources as China, stands out with its flexible diplomacy, adeptness at maintaining relations with major powers, and especially its ability to promote South-South cooperation. As the largest democracy in South Asia, India has the advantage of leveraging democratic and human rights values in its foreign policy strategies, setting itself apart in the race for leadership.

However, the competition between China and India for leadership in the Global South not only affects the countries in the region but also has far-reaching implications for international relations. The Global South, with its vast population and strategic positioning, is increasingly asserting its significance in global affairs. The relationship between major powers like China and India, combined with the active participation of Global South nations, will bring about major transformations in the structure and operation of the international order. The rivalry between China and India is not merely a matter of confrontation; both nations recognise that a combination of cooperation and competition can yield benefits for themselves as well as for the Global South. Meanwhile, countries in the region will have to make crucial strategic decisions, weighing their options between collaborating with China, India, or other global powers amid the uncertainties of global political and economic shifts.

The objective of this research is to examine the race for leadership in the Global South between China and India, analysing each country's strategic moves across various domains, and predicting the implications for both the Global South and the broader international order. The findings will not only clarify the competitive

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dynamics between China and India but also provide valuable insights into the opportunities and challenges of shaping a new international order where the Global South plays an increasingly significant role.

2. Theoretical overview

2.1. The concept of the Global South

The term "Global South" originally denoted a geographical distinction, referring to nations located below the equator. Over time, it has evolved into a broader political and economic concept encompassing developing and underdeveloped countries in contrast to the developed nations of the Global North. Coined by C. Oglesby (1969) [1], the term highlighted structural power imbalances between North and South. During the Cold War, it was associated with the "Third World", referring to countries unaffiliated with the Western or Soviet blocs, before gradually being replaced by this term due to its negative connotations.

Politically and economically, the "Global South" transcends geography and signifies enduring global power divisions rooted in shared experiences of colonialism and economic marginalisation. These disparities continue to shape contemporary perceptions of hierarchy within the international political economy.

From a theoretical perspective, the Global South has been analysed through several major frameworks. Early theories of imperialism (Hobson, Lenin, Gramsci, Du Bois) describe how colonial extraction and capitalist expansion created long-standing inequalities between the North and South. These ideas later informed dependency theory (Prebisch, Singer, Frank), which argues that countries on the "periphery" remain economically subordinate to industrialised "core" nations due to unequal trade structures and historical dependencies. Postcolonial theorists such as Fanon and Du Bois further highlight how colonial legacies produced racialised global hierarchies that persist in international politics. More recent scholarship emphasises the growing agency of Global South states, portraying them not as passive recipients of global structures but as emerging actors capable of reshaping governance norms [2]. These theoretical lenses provide the foundation for analysing leadership competition within the Global South today.

The Global South comprises a diverse group of nations united by shared historical constraints and aspirations for greater global influence. Countries such as Brazil, South Africa, Indonesia, India, and China play pivotal roles through platforms like BRICS and the G77 [3]. Despite economic heterogeneity, with emerging economies contributing over 40% of global GDP, the group maintains political solidarity in advocating a more equitable international order [4]. This diversity underscores the complexity of leadership competition within the Global South.

Despite its geographic origins, the term "Global South" is not spatially precise, as major nations like China and India, both located in the Northern Hemisphere, are included due to their political, economic, and developmental trajectories [5]. In the 21st century, rising Southern powers have increasingly challenged Western dominance, prompting a re-evaluation of global power distribution.

2.2. The concept of leadership in international relations

Leadership in international relations refers to the position of an entity that has the decisive ability to influence other actors, particularly states and relevant organisations [6]. This ability is reflected not only in the relationship between the leader and the subjects being led but also in the interactions among actors within the international system. Leadership becomes decisive when the leading entity can take actions that directly impact the status and interests of other actors within this system. A leadership position is often derived from various factors such as military, economic, and cultural power, but changes in the international system can also alter a nation's leadership role. Historically, countries such as the United Kingdom, France, and the United States have successively held global leadership roles, from the "great powers" of the 19th century to the "superpowers" of the 20th century. Today, the rise of nations such as China and India indicates a shift in global leadership [7].

Leadership in international relations is demonstrated not only through a nation's ability to achieve its political goals but also through its capacity to organise and control the actions of competing actors [8]. One of the key factors in leadership is the ability to maintain influence and coordinate the actions of other states, even in the face of resistance. The evolution of the international system has transformed the nature of leadership from the dominance of "great powers" in the 19th century to "superpowers" in the 20th century and, in the present, a competition among nations aspiring for global hegemony. Leadership competition is evident in the rivalry for dominance among nations, especially when a major power refuses to accept the dominance of another. The lack of acceptance of leadership can lead to reactions such as regional competition or direct confrontation between major powers. Secondary states may employ strategies such as "soft balancing" or cooperation to navigate leadership challenges. External factors, such as regional policies and the internal political dynamics of states, also play a crucial role in shaping responses to regional leadership [9].

2.3. Power dynamics in the Global South

2.3.1. Power transition theory and its implications

Power transition theory (PTT) is a dynamic and structural model for analysing fundamental shifts in global power [10]. Structurally, PTT envisions world politics as a hierarchical system of states with varying degrees of cooperation and competition. The theory identifies the relative roles of states within this hierarchy, the system of governing rules, and how powerful states attempt to manage global politics [11]. Dynamically, PTT focuses on the differential growth rates among nations, arguing that these relative shifts in power create new relationships between states. Key elements of the theory include hierarchy, power, and satisfaction. The satisfaction or dissatisfaction of nations with the existing status quo, including the broad acceptance of international rules and norms, plays a crucial role in determining the likelihood of major conflict [12]. The most powerful nations hold the top positions in the global or regional hierarchy, with the leading nation referred to as the "dominant" state. However, unlike competing theories, the dominant nation is not a hegemon but seeks to manage the system with a coalition of stable and satisfied supporters [13].

A significant implication of PTT is its ability to predict conflict when a challenging nation and the dominant nation reach a stage of power parity. At this point of parity, the likelihood of winning a war becomes more uncertain, increasing the risk of conflict. However, PTT is not solely a theory of war but also explains longer periods of peace in world history.

In the context of the rise of China and India, PTT had foreseen the importance of this power shift early on. A.F.K. Organski (1958) [11] posed the question not of whether China would become the most powerful nation on earth, but rather how long it would take her it to achieve this status. Currently, the parity in GDP (purchasing power parity) between China and the United States has become evident. The rise of these two Asian powers promises to create a global and regional power transition. However, it is important to note that the satisfaction of China and India with the current international order will play a decisive role in whether this transition is peaceful or conflictual.

Relating to the potential leadership role of China and India in the Global South, PTT suggests that as these nations continue to grow and gain the ability to challenge or even surpass current great powers, they could become key actors in reshaping international rules and norms. If China and India feel dissatisfied with the existing order, largely established by Western powers, they might seek to promote the interests of the Global South and establish an international system that better reflects the perspectives and needs of developing nations. However, if they are satisfied with the benefits derived from the current order or seek to integrate and change the system from within, their leadership might focus on promoting cooperation and shared development within the Global South within the existing framework.

2.3.2. Balance of power theory in the context of China-India rivalry

The balance of power theory is a fundamental theory in international relations, asserting that states act to prevent any single state or coalition from dominating the system [13]. In an international order lacking a central governing authority, states prioritise survival and security by countering excessive concentrations of power. This balancing can take two primary forms: internal balancing, where states enhance their own military, economic, and technological capabilities, and external balancing, where states form alliances or partnerships to counter potential threats [14].

For decades, India exhibited underbalancing in its approach to China. Instead of engaging in direct military competition or forming robust alliances, India pursued a hedging strategy, combining soft balancing, selective hard balancing, and diplomatic engagement.

This cautious approach was shaped by the perception that China did not pose an existential threat, unlike Pakistan. An existential threat is one that endangers a state's survival and core national identity, and for Indian policymakers, Pakistan remained the more immediate concern [15].

This perception was reinforced by India's early leadership. Prime Minister Jawaharlal Nehru initially saw China as a natural partner, emphasising post-colonial solidarity rather than military rivalry. Even after the 1962 Sino-Indian War, which exposed India's military vulnerabilities, New Delhi refrained from entering formal military alliances with the West. Several factors contributed to this underbalancing, including domestic political priorities, economic interests in maintaining cooperation, the natural geographical barrier of the Himalayas, and nuclear deterrence, which reduced the risk of outright war [16].

However, since 2017, India's balancing strategy has shifted in response to China's growing assertiveness under Xi Jinping, particularly regarding border tensions [17]. This shift marks a move towards limited hard balancing, characterised by increased military infrastructure development, enhanced troop deployments, and procurement of advanced weaponry. While India's military capabilities remain asymmetrical compared to China's, its strategic recalibration signals a more active role in countering China's influence.

In terms of external balancing, India has strengthened its strategic partnerships with the United States, Japan, and Australia within the Quad framework. However, India remains wary of being entrapped in military conflicts and maintains its strategic autonomy [1]. Alongside hard balancing, India continues to employ soft balancing, leveraging diplomatic influence and multilateral institutions to counterbalance China's rise without direct military confrontation.

China's approach to India has historically oscillated between benign neglect and strategic countermeasures. While Beijing has often dismissed India as a secondary concern, it has actively supported Pakistan as a balancing measure against Indian power, particularly in nuclear capabilities. For instance, China aided Pakistan's nuclear programme following India's 1974 nuclear test and has since opposed India's membership in the Nuclear Suppliers Group (NSG) [18].

China has also engaged in selective border intrusions while simultaneously pursuing economic cooperation with India, a strategy aimed at preventing New Delhi from fully aligning with Washington. Moreover, Beijing's economic investments in South Asian nations serve to expand its regional influence, though these smaller states have generally avoided forming direct military alliances against India [19].

2.4. Overview of the current situation in the Global South

In the current context, the Global South is gradually strengthening its position and seeking sustainable development pathways. Economically, a key trend in the Global South is the rise of emerging economies, which are making increasingly significant contributions to global economic growth. Today, this region accounts for more than 40% of the world's GDP and has contributed approximately 80% of global economic growth over the past two decades. Experts note that cooperation among peer economies is increasing, and the Global South is finding a "greater voice" [20], with countries such as China, India, Brazil, and South Africa playing crucial roles in reshaping the international economic order [4].

Additionally, the Global South is gradually enhancing its political influence. China's mediation between Iran and Saudi Arabia, along with Brazil's efforts to promote a peace plan for Ukraine, demonstrate the growing capacity of these nations to intervene in and resolve regional conflicts. At the same time, the development of cooperative mechanisms such as BRICS and the "Voice of Global South Summit" highlights increasing solidarity within the region. Furthermore, multilateral cooperation between China and Latin American countries is creating a new foundation for global governance. Faced with challenges such as protectionism, great power politics, and geopolitical instability, the Global South is actively seeking effective cooperation models to safeguard common interests and promote a more equitable world order.

Despite its development potential, the Global South still faces significant challenges. First, economic and social inequalities between the Global North and South remain a pressing issue. International financial and trade institutions, largely controlled by the West, continue to create barriers for developing countries in accessing capital and technology. Nations in the

Global South remain highly vulnerable to geopolitical and economic fluctuations. Tensions between major powers, particularly the United States and China, could impact the region's stability and economic growth. Moreover, dependence on raw material exports makes many countries susceptible to market volatility. Additionally, internal issues such as corruption, weak governance, and political instability continue to hinder sustainable development. Strengthening governance capacity and enhancing transparency are key factors for the Global South to fully realise its development potential.

3. China and India's moves in the race to lead the Global South

3.1. China's actions

3.1.1. Economic and investment strategies

China has emerged as a global superpower in the 21st century and one of the most prominent financial and investment contributors in the race to lead the Global South [25]. The Belt and Road Initiative (BRI) exemplifies China's strategy to position itself as both a donor and provider of infrastructure projects while fostering close cooperation with Global South nations. Through the lens of power transition theory (PTT), the BRI reflects China's ambition to challenge the Western-dominated global order, reshaping international norms to favour developing nations [21]. By offering loans and infrastructure investments, China seeks to enhance its status as a leading power, fostering economic dependence among partner nations.

As a superpower, China views itself as both a donor and a recipient of aid. It believes it understands the needs of developing nations, having transitioned from poverty to the world's second-largest economy. China is eager to share its "Chinese wisdom and solutions" to address global development challenges. It argues that "Chinese-style modernisation" (modernisation without political liberalisation or democracy) is not only the path to the "great rejuvenation of the Chinese nation" but also a model for other developing nations [22].

The BRI represents China's shift from a reactive approach to proactive great power diplomacy [23]. Initially aimed at enhancing cooperation with neighbouring countries, the BRI rapidly expanded to a global scope, encompassing finance, infrastructure, innovation, trade, transportation, sustainability, and people-to-people connectivity. China presents itself as a development partner offering "mutually beneficial cooperation", in contrast to Western-style aid. China's development cooperation goals are to help developing nations achieve independence, particularly from the West [24].

To analyse China's strategies further, power transition theory and balance of power theory can be applied. PTT explains how China, through initiatives like the BRI, seeks to challenge the dominance of the United States and other Western powers in the international system. Similarly, balance of power theory elucidates China's broader strategy to assert itself as a global leader, aiming to balance or surpass existing powers through economic and diplomatic efforts.

Responses from Global South nations and experts to the BRI are varied and complex. Proponents view the BRI as an example of South-South cooperation, emphasising mutual benefits and solidarity among developing nations [26]. Many Global South countries welcome the BRI for addressing infrastructure challenges, stimulating economic growth, and enhancing regional connectivity. Unlike Western aid, Chinese projects often come without political conditions, making them attractive to some governments.

However, some experts and nations express concerns that large-scale loans from China may lead to "debt-trap diplomacy", making debt repayment challenging and increasing dependence on China [27]. Additionally, the lack of transparency in BRI loan contracts and terms has raised concerns about fairness and the true benefits accruing to participating nations. Some BRI projects have negatively impacted local communities, including land appropriation, environmental pollution, and disruption of livelihoods. Critics also argue that the benefits of the BRI are unevenly distributed, often favouring state-owned enterprises and the middle and upper classes. Moreover, the presence of large numbers of Chinese workers in BRI projects, while locals are limited to low-level positions, has sparked concerns and resentment.

Furthermore, the legal framework governing international financial regulations, particularly those set by organisations such as the Financial Action Task Force (FATF), plays a significant role in shaping China's ability to implement large-scale initiatives.

I. Chakrabarty (2023) [28] discusses how global financial regulations impact China's investments, presenting both opportunities and challenges in meeting international expectations and policies. These legal constraints can affect the development and success of BRI projects, complicating compliance and transparency.

"Chinese-style modernisation" represents a unique development model, emphasising economic growth and technological innovation while avoiding political democratisation. This model is presented as a blueprint for other developing nations in the Global South, offering an alternative to Western-led democratic and development models. China's emphasis on economic modernisation, without the political reforms often associated with development, is a critical aspect of its soft power in the region.

3.1.2. Political and diplomatic strategies

The rise of the Global South signals a shift in global power, challenging Western-led institutions. China, positioning itself as the leader of this transformation, has adjusted its foreign policy to align with the interests of developing nations. In a speech, Chinese Foreign Minister Wang Yi emphasised China's role, reinforcing its commitment to uniting and revitalising the Global South, enhancing South-South cooperation, and increasing its influence in global governance [29].

China's engagement with the Global South is driven by four primary goals. First, China seeks to amplify the voice of developing nations in multilateral forums such as BRICS, the G77, and the United Nations, countering Western dominance in global decision-making. Second, China aims to restructure the global political and economic order, promoting alternatives to Western-led financial institutions such as the Internationnal Monetary Fund and World Bank. The establishment of the Asian Infrastructure Investment Bank (AIIB) exemplifies this effort, positioning China as a leader in reshaping global finance.

Third, China's economic and political stability is closely tied to the stability of the developing world. By fostering economic and diplomatic ties, China ensures access to key markets, resources, and strategic alliances necessary for long-term growth. Finally, China frames itself as a natural partner to the Global South, leveraging historical ties against colonialism and promoting economic cooperation. This narrative is reinforced through initiatives such as the BRI, emphasising China as a development partner rather than a hegemonic power [30].

To achieve these goals, China has initiated several frameworks, including the Community of Shared Future, Global Security Initiative (GSI), Global Development Initiative (GDI), and Global Civilisation Initiative (GCI). These frameworks help solidify China's leadership role and counter Western criticisms. By promoting these frameworks in global forums such as BRICS, the G20, and the World Trade Organisation (WTO), China strengthens its position and influences global governance structures to reflect the interests of developing nations.

Economic diplomacy plays a pivotal role in China's Global South strategy. Through the BRI, China provides financial resources, infrastructure development, and technology to partner nations, fostering economic interdependence. However, the BRI has faced criticisms, with some nations questioning the sustainability of Chinese investments due to rising debt burdens and concerns over sovereignty. Nevertheless, China's growing role as a global mediator, such as in resolving conflicts between Saudi Arabia and Iran, underscores its increasing influence in international diplomacy [31].

Under Xi Jinping, China's political centralisation has also significantly impacted its global strategy. Centralised power has enabled more assertive economic planning, including stricter regulatory oversight of BRI projects. This has helped mitigate financial risks and ensure national oversight, though it has also caused delays and increased scrutiny from recipient nations regarding loan terms. Critics argue that this centralisation reduces flexibility and imposes constraints on local governance in partner countries.

Moreover, China's governance adjustments have influenced its approach to state-owned enterprises (SOEs) and private sector engagement in international markets. While SOEs are encouraged to lead overseas investments, tighter regulations on the private sector, particularly in technology, reflect China's strategy to leverage state power while maintaining control over domestic economic stability.

In recent years, China has also prioritised sustainability, seeking to balance rapid industrialisation with environmental responsibility. This is evident in China's commitment to achieving carbon neutrality by 2060. The BRI increasingly promotes green development through investments in renewable energy, such as solar and wind power in Africa and Southeast Asia, to foster sustainable infrastructure. However, inconsistencies between China's green goals and continued investments in fossil fuels have drawn criticism, highlighting the challenges China faces in reconciling economic ambitions with environmental commitments.

China's legal strategies in trade disputes also shape its role in the global economy. At the WTO, China advocates for a fairer global trade order benefiting developing nations while selectively complying with rulings to protect its interests. The Regional Comprehensive Economic Partnership (RCEP) and other trade agreements reflect China's efforts to reshape trade governance in the Asia-Pacific. However, tensions with the US and EU persist, particularly regarding technology trade restrictions and intellectual property disputes.

In summary, China's rise as a Global South leader is bolstered by a strategic blend of economic diplomacy, political centralisation, sustainability efforts, and legal strategies. By actively shaping global governance and positioning itself as a development partner, China aims to challenge Western dominance while securing its own economic and political future. However, balancing leadership ambitions with regional sensitivities and criticisms of economic hegemony remains an ongoing challenge.

3.1.3. Soft power strategies

China employs soft power as a critical tool to expand its influence and strengthen its international standing, particularly in Global South nations. Through a range of cultural initiatives, Beijing aims to build a "harmonious world", promoting a peaceful environment to support both economic and political development. Additionally, China seeks to enhance its national image, assert its cultural identity, and alleviate concerns from neighbouring countries about its rise. Most importantly, China promotes the "Chinese Solution" - a development model independent of Western values, emphasising diversity, mutual respect, and the non-imposition of ideology on other nations [32].

To achieve these objectives, China has launched several cultural initiatives to expand its influence and build trust in developing nations. A key component of this strategy is public diplomacy, encompassing cultural exchanges, education, and media outreach. China has signed numerous bilateral cultural agreements and provided thousands of scholarships to students from Global South nations, particularly in Africa. Additionally, the network of Confucius Institutes has expanded to promote Chinese language and culture, fostering closer ties between Chinese citizens and local communities.

China has also invested heavily in media cooperation, with China Radio International broadcasting in multiple languages across Africa to shape public opinion in Beijing's favour. By emphasising principles of non-interference, mutual benefit, and respect for sovereignty, Beijing seeks to build robust relationships with developing nations. Moreover, China employs "smile diplomacy" to assuage regional concerns about its growing influence and has launched public relations campaigns to tell the "China story" and shape global discourse in its favour [33].

These efforts have significantly expanded China's influence, particularly in Southeast Asia and Africa, where many nations view China's rise more positively than the West. Through infrastructure investments, China has also established itself as a leading trade partner in regions such as ASEAN and South Korea. Furthermore, China's soft power has fostered scepticism about the universality of Western values, particularly regarding democracy and human rights. Beijing has successfully secured diplomatic alignment with many nations, maintaining neutrality in global conflicts, such as the Russia-Ukraine war.

China's soft power strategy has achieved considerable success, particularly in building economic and infrastructure relationships without imposing political conditions. Its focus on development cooperation has facilitated access and built trust with developing nations. Moreover, China's emphasis on Asian values, such as cooperation and sovereignty, has helped it garner support from nations with similar development perspectives.

However, China's soft power also faces significant challenges. A notable limitation is the difficulty in engaging with Western nations, where Beijing's state-led economic model and human rights record do not garner widespread appeal. Additionally, China's domestic nationalism sometimes undermines efforts to build trust with neighbouring countries. Furthermore, Beijing's partnerships with authoritarian regimes have raised concerns about China's global image, leading to accusations of "neo-colonialism" through its economic activities, particularly in Africa.

A critical critique of China's soft power strategy is the accusation of "debt-trap diplomacy". Critics argue that China's loans to developing nations, particularly those involved in the BRI, are strategically designed to create financial dependence. This dependence can be leveraged by China to gain political influence. Many nations in Africa and South Asia, for instance, have struggled to repay these loans, raising concerns about long-term economic and political consequences [27].

China's significant economic capacity, however, provides a clear advantage over nations such as India in its soft power strategy. With vast financial resources, China can fund large-scale infrastructure projects, making it a dominant force in global investment. In contrast, India's smaller economic scale limits its ability to provide comparable financial support. While India offers rich cultural programmes and sustainable development initiatives, it lacks the economic leverage to match China's ambitious global investments. Nevertheless, India's soft power, rooted in cultural diplomacy and non-imposition, holds potential in regions where nations prioritise cooperation and shared development goals over purely financial terms.

3.2. India's actions

3.2.1. Economic and investment strategies

With robust economic growth, India has emerged as a key strategic partner for Global South nations, particularly in economic cooperation and development assistance. As the world's fifth-largest economy, India prioritises domestic development while expanding its influence through trade agreements, financial cooperation, and development aid programmes [34]. These actions align with India's broader geopolitical objectives, enabling it to enhance economic connectivity, strengthen regional partnerships, and maintain strategic balance in global power dynamics.

Within the framework of South-South cooperation, India has actively provided Official Development Assistance (ODA) to countries such as Sri Lanka, Bangladesh, and several African nations [35]. These projects primarily focus on infrastructure development, education, healthcare, and agriculture. By investing in roads, energy networks, and transportation systems, India promotes economic growth in partner countries while strengthening trade routes. Educational programmes, including scholarships and institutional partnerships, further enhance human capital development. In healthcare, India supports vaccination programmes and hospital infrastructure, contributing to improved public health. Additionally, agricultural initiatives provide technology transfers and capacity-building programmes to ensure food security and sustainable farming practices. India's ODA initiatives serve a dual purpose: They contribute to the sustainable development of recipient nations while enhancing India's trade relations and geopolitical presence in these regions. By integrating aid with trade partnerships, India strengthens its economic footprint and fosters long-term diplomatic alliances.

A cornerstone of India's economic strategy is the expansion of Free Trade Agreements (FTAs) with Global South nations. For instance, the FTA with Sri Lanka has significantly facilitated India's exports, improving market penetration and bilateral trade (International Trade Administration, 2024) [36]. D. Chakraborty, et al. (2022) [37] emphasises that FTAs play a pivotal role in fostering competition and driving innovation in India. Increased market access compels Indian industries to enhance production efficiency, invest in technological advancements, and compete globally. In this context, India's FTAs not only boost economic growth but also strengthen regional integration, encouraging cross-border investments and supply chain linkages. Moreover, India-China trade competition drives innovation through strategic market access, as analysed by D. Chakraborty, et al. (2022) [37] and J. Chaisse, et al. (2021) [38] using a game-theoretic approach, while India's evolving FTA policies have bolstered domestic industries.

Beyond trade agreements, India has focused on financial cooperation mechanisms to strengthen economic partnerships in the Global South. The India-Brazil-South Africa (IBSA) Dialogue Forum promotes trilateral cooperation in areas such as poverty reduction and infrastructure development, while the IBSA Fund provides financial support for development projects, enhancing regional connectivity and economic resilience. Additionally, I. Chakrabarty (2023) [28] explores how global financial regulations, particularly the FATF, influence India's economic environment. As India navigates these international legal frameworks, it strategically aligns its policies to balance regulatory compliance with investment promotion, ensuring continued economic expansion .

India's development cooperation model further solidifies its economic influence by offering concessional loans and technical assistance through programmes such as the Indian Technical and Economic Cooperation (ITEC) and the Indian Development and Economic Assistance Scheme (IDEAS). Through ITEC, India provides capacity-building programmes and financial support to developing nations, helping them strengthen their institutional and economic capacities. Meanwhile, IDEAS facilitates concessional financing for infrastructure and industrial projects, ensuring recipient nations can access financial support under favourable terms [39]. These initiatives go beyond mere financial aid; they position India as a key economic partner and development leader in the Global South. By integrating economic diplomacy with strategic investments, India effectively builds lasting economic relationships while reinforcing its role as a major player in regional development.

India's economic strategies, centred on trade agreements, financial cooperation, and development assistance, align with its broader geopolitical ambitions. Through theoretical lenses such as balance of power and competition-driven innovation, India's approach can be seen as a deliberate effort to expand its leadership role while maintaining regional stability and fostering economic growth. By leveraging FTAs, ODA, and financial cooperation mechanisms, India continues to strengthen its position as a rising power, promoting greater economic integration and shared prosperity across the Global South.

3.2.2. Political and diplomatic strategies

India has built its leadership role in the Global South through its anti-colonial legacy and the Non-Aligned Movement (NAM). Under Jawaharlal Nehru's leadership, India championed sovereignty, non-interference, and international equality. The 1955 Bandung Conference and subsequent NAM summits shaped India's stance on global issues. In the 21st century, India has reinforced its leadership through initiatives such as the Voice of the Global South Summit launched in 2023. This forum enables developing nations to discuss food security, energy, climate change, and sustainable development. This policy aims to strengthen India's role in representing Global South nations while reflecting its diplomatic strategy of enhancing regional cooperation and promoting the collective interests of developing countries.

India's G20 presidency in 2023 marked a significant milestone. India actively advocated for the African Union's inclusion in the G20 [40], amplifying the voice of developing nations. The *Vasudhaiva Kutumbakam* ("the world is one family") concept, emphasised in the New Delhi Declaration, further amplified the Global South's voice [41]. This reflects India's commitment to global cooperation, sustainable growth, and climate justice. Additionally, India has supported reforms in multilateral development banks, aiding developing nations in balancing economic growth with environmental protection.

In addition to its multilateral engagements, India has expanded its regional influence through its Act East Policy (AEP). An upgrade of the Look East Policy in 2014, the AEP deepens India's strategic, economic, and cultural ties with Southeast Asia and the broader Indo-Pacific region. By enhancing cooperation in maritime security, digital connectivity, supply chain resilience, and development assistance, India positions itself as a trusted partner to ASEAN countries, many of which are anchored in the Global South [42]. This policy helps India balance China's regional presence while also strengthening its image as a promoter of inclusive growth and South-South cooperation.

In technology, India has deployed the Digital Public Infrastructure (DPI) initiative, including innovations such as the Aadhaar biometric identification system and the Unified Payments Interface (UPI). These technologies not only enhance domestic public service efficiency but have also been shared with over 50 countries, particularly in the Global South. The G20 recognised DPI as a potential tool to bridge the global digital divide, solidifying India's leadership in technological innovation. Furthermore, India has demonstrated a strong commitment to renewable energy through the International Solar Alliance and the National Green Hydrogen Mission. As the world's fourth-largest renewable energy producer, India leads global efforts to reduce carbon emissions and shape a green economy [43].

India's democratic governance has enabled political reforms that drive economic outcomes, particularly through initiatives such as DPI and the International Solar Alliance (ISA). These reforms, grounded in sustainability science, position India as a leader in green innovation, fostering economic ties with the Global South. However, India's navigation of international legal disputes, such as those involving Investor-State Dispute Settlement (ISDS) and public health measures during COVID-19, has shaped its innovation environment by influencing investor confidence and policy reforms [44]. These dynamics underscore India's strategic balancing of domestic priorities and global commitments.

India's multifaceted diplomatic strategy allows it to maintain a balance between major powers. Its role in BRICS promotes South-South cooperation, while participation in the Quad strengthens ties with developed nations. This approach not only expands India's influence but also fosters dialogue and cooperation between the Global North and South. However, this strategy is not without challenges. India faces intense competition from China, a nation with significant financial, technological, and the Global political influence in the region. Additionally, strained relations with some neighbouring countries and differing interests among Global South nations pose challenges in assessing the effectiveness of India's policies.

3.2.3. Soft power strategies

India has leveraged soft power to enhance relations and promote cooperation with Global South nations, particularly through cultural and sustainable development initiatives. A key strategy is promoting India's cultural heritage, blending tradition with modernity. India has not only invited initiatives such as the ISA and the Coalition for Disaster Resilient Infrastructure (CDRI) to engage with the G20 [45], but has also promoted philosophies of living in harmony with nature, as seen in Hinduism and Buddhism, establishing itself as a responsible steward of environmental management. This has helped India not only build an image as a nation with a sustainable development philosophy but also assert its leadership in global environmental discussions.

India's approach to cultural diplomacy and soft power resonates more effectively than China's in some respects, particularly due to its focus on shared values such as sustainability, spirituality, and environmental responsibility. While both nations use cultural narratives to expand influence, India's strategy stands out for emphasising collaboration with Global South nations on issues critical to them such as climate change, sustainable development, and humanitarian assistance. This creates greater resonance because it aligns with the increasing global emphasis on environmental sustainability and social responsibility. India's soft power is perceived as more altruistic and focused on the welfare of partner nations, rather than solely driven by economic or geopolitical interests, which are often associated with China's Belt and Road Initiative (BRI).

For instance, initiatives such as the ISA and the Lifestyle for Environment (LiFE) campaign are seen as collective global efforts, inviting nations to join India in addressing environmental challenges. This collaborative, rather than impositional, model makes India's soft power strategy more appealing, particularly to nations wary of China's growing economic and political influence, which is often perceived as self-serving and domineering.

Moreover, India's promotion of cultural diplomacy through mediums such as Ayurveda, Yoga, and educational exchange programmes appeals to many nations, offering practical benefits that align with the cultural and spiritual values of numerous Global South countries. In contrast, China's cultural outreach tends to emphasise its own history and heritage, which, while powerful, does not always resonate deeply with the values of other nations, particularly when accompanied by a robust economic and political agenda.

India's soft power is rooted in partnerships and mutual interests, making it well positioned to foster long-term relationships. In contrast, while China's economic initiatives often deliver infrastructure and development, they can also lead to debt dependency and perceptions of neo-colonialism, which may make its approach less appealing to some Global South nations.

In sustainable development, India has focused on promoting renewable energy through initiatives such as solar energy projects, demonstrating a genuine commitment to green growth and sustainability. These initiatives resonate with developing nations prioritising environmental protection but lacking the resources to implement large-scale solutions independently. India's focus on climate change and clean energy innovation is seen as a positive force, in contrast to China's emphasis on infrastructure development, which, while impactful, often comes with greater economic and geopolitical consequences that may raise concerns about dependency.

India has also launched financial and digital initiatives, particularly through the promotion of the Unified Payments Interface (UPI) and Digital Public Infrastructure (DPI) [46]. These initiatives not only provide financial opportunities for Global South nations but also strengthen digital connectivity and build sustainable financial systems, making India's soft power more attractive to nations seeking modernisation without falling into debt traps.

Through financial assistance programmes and multilateral cooperation initiatives such as the India-Middle East-Europe Economic Corridor (IMEC) and the Social Impact Fund, India has created broad cooperative opportunities, helping Global South nations enhance development and cultural exchange [47]. As a result, India has not only cemented its position in the region but has also become a global cultural hub, with significant influence in clean energy innovation, higher education, healthcare technology, and digital services.

3.3. Comparative analysis of soft power strategies

China and India employ distinct soft power strategies to influence the Global South, with varying degrees of resonance. China leverages its network of Confucius Institutes and media campaigns, such as China Radio International's broadcasts in Africa, to promote "Chinese-style modernisation" as a development model (Section 3.1). These efforts have strengthened economic and infrastructure ties, particularly in regions such as ASEAN and Africa, where China is a leading trade partner. However, China's soft power faces criticisms of "debt-trap diplomacy", with BRI loans creating financial dependence and perceptions of neo-colonialism, especially in Africa and South Asia [27]. Additionally, China's partnerships with authoritarian regimes and domestic nationalism undermine trust in some regions.

In contrast, India's soft power, rooted in cultural diplomacy through Yoga, Ayurveda, and sustainable initiatives such as the International Solar Alliance (ISA), resonates by emphasising shared values and altruistic approaches (Section 3.2). For example, India's educational exchange programmes in Southeast Asia foster deep cultural ties, while China's media campaigns dominate African airwaves but lack similar cultural resonance. India's collaborative approach, such as inviting nations to join the ISA, appeals to countries wary of China's economic influence. However, India's smaller economic capacity limits its ability to fund large-scale projects compared to China's BRI investments [48].

These differences highlight trade-offs between economic leverage and cultural resonance. India's soft power excels in regions prioritising collaboration and sustainability, such as Southeast Asia and Africa, where initiatives like the ISA align with local priorities. Conversely, China's infrastructure investments deliver immediate economic benefits but often raise sovereignty concerns. Both nations face challenges in balancing leadership ambitions with regional sensitivities, but India's partnership-focused approach offers greater potential for long-term relationships in the Global South.

4. Impacts on international relations

4.1. Impacts on the structure of the Global South region

In the context of the competition for regional leadership in the Global South between China and India, alongside the opportunities for cooperation, there are also negative impacts that could potentially change the structure and development trajectory of the region. First, one prominent issue is the risk of the "debt trap" and economic dependency. Global South countries, when participating in large-scale infrastructure projects promoted by China through the Belt and Road Initiative (BRI), may face rising public debt burdens. This can lead to economic imbalances and vulnerability to political exploitation, as foreign partners may impose policies that serve their own interests.

Second, China uses massive investments as a hard power tool, aiming to exert direct influence on developing countries. However, this model often comes with economic and political constraints, leaving Global South countries susceptible to manipulation and at risk of losing autonomy in decision-making. This competition can create a “divided” environment, where countries are forced to choose between large-scale investment models and the cultural and educational cooperation offered by India. Such forced choices not only reduce the ability to diversify international relations but also create internal tensions and polarisation in the foreign policies of partner countries.

Third, competition for influence also brings negative social and cultural effects. When Global South countries are coerced into the power struggle between the two giants, cultural exchanges may be dominated by economic interests, leading to the erosion of traditional cultural values. The spread of “soft power” cultural values and products from China and India may not always align with the local context, causing social side effects such as cultural imbalance, value conflicts, and even the loss of cultural independence in the development of countries in the Global South.

Fourth, this fierce competition also poses risks to the environment and security. Large-scale infrastructure investment projects, while bringing rapid economic development, can cause severe environmental consequences if not properly managed, ranging from over-exploitation of resources to pollution and environmental degradation. Meanwhile, the focus on power competition between the two great powers can escalate geopolitical tensions, turning Global South countries into battlegrounds for conflicts, thus negatively affecting regional stability.

Finally, the policies and initiatives of China and India, despite their goals to increase influence, could create a “common vulnerability” for the region. When Global South countries are caught between difficult choices, they may lose the opportunity to build independent, flexible, and multilateral relationships. These negative impacts extend beyond economics or politics, influencing social, environmental, and cultural aspects, which in turn affects the sustainable development process of the entire region.

4.2. Impacts on the global order

The intensifying competition between India and China not only creates a geopolitical contest but also has profound implications for the global order, particularly in the post-Cold War multilateral context. The polarisation within international forums and the strategic choices of these powers are reshaping the global order towards a multipolar system, with clearer divisions among alliance blocs.

First, the India-China competition turns multilateral forums into arenas for power struggles rather than platforms for building a common front on global issues. Nations no longer have the opportunity to collectively focus on establishing shared rules but are instead compelled to choose between aligning with alliances led by one of the two powers. This leads to a dispersion of voices and influence, with forums such as the G20 increasingly dominated by bilateral relations rather than genuine multilateral cooperation. This shift threatens to undermine the effectiveness of the rules-based global system established post-Cold War.

In the World Trade Organisation (WTO), China’s advocacy for a fairer trade order benefiting developing nations clashes with India’s selective compliance with rulings, weakening global trade governance (Section 3.2). Similarly, India’s withdrawal from Regional Comprehensive Economic Partnership (RCEP) negotiations, driven by concerns over domestic industries, reflects a prioritisation of national interests over regional integration, shaping Asia-Pacific investment regionalism [49, 50]. RCEP’s investment provisions, as analysed by J. Chaisse, et al. (2022) [51], have influenced regional economic law, impacting the Global South’s integration into global markets. Meanwhile, India’s advocacy for the African Union’s G20 membership [52] and China’s mediation between Iran and Saudi Arabia (Section 3.2) illustrate competing influences on African governance, highlighting the Global South’s pivotal role in reshaping global forums.

Second, the intense competition between India and China may accelerate the decline of multilateralism as we know it. Post-COVID-19 and amid global economic downturns, China has increasingly disengaged from key international forums such as the G20, while India faces pressure from alliances such as the Quad - comprising the United States, Japan, India, and

Australia - to bolster its position. China's absence from these forums not only reduces the representativeness of global discussions but also paves the way for new regional alliances, further fragmenting the multilateral system into distinct opposing blocs. Western powers, particularly the United States, are attempting to restructure their alliances to include the voices of emerging nations, but this polarisation only heightens the complexity of global governance.

Third, the India-China rivalry poses a significant question about the strategic choices of nations in the international arena. Should nations safeguard their interests by adhering to existing multilateral rules, or shift towards alternative systems led by authoritarian powers? As India navigates between participating in alliances such as the Quad - thereby enhancing its ability to leverage both hard and soft power - and maintaining its traditional policy of neutrality, other nations worldwide will also need to consider whether to embrace a new world order where the values and priorities of the Global South are fully reflected. This choice will directly impact international cooperation and affect security, economic development, and the stability of the global order.

Finally, this competition raises concerns about the diminishing role of international institutions, as global alliances and forums become fragmented along distinct factions. Western powers, facing the rise of "China-led" forums or new alliances initiated by India, will need to adjust their diplomatic strategies to maintain influence. This fragmentation may result in smaller and medium-sized nations losing their voice and influence in a global system once expected to be equitable and transparent.

5. Conclusions and recommendations

This research has analysed the competition between China and India in increasing their influence in the Global South. The research highlights the economic, political, diplomatic, and soft power strategies both countries use to expand their influence, with differing approaches. While China primarily focuses on infrastructure investments through the BRI, India emphasises soft power strategies, cultural diplomacy, and the promotion of democratic values. Both countries seek to assert leadership in the Global South, and this competition is shaping the regional international relations landscape.

In the future, the competition between China and India will continue to influence the political and economic trends of the Global South. As both countries attempt to expand their influence with key regional partners, countries in the region will need to reassess their national interests in this new context. The power struggle between China and India may present opportunities for countries in the Global South to assert their interests more strongly, but it could also deepen divisions and create new challenges for regional cooperation.

Future research should focus on the specific impacts of this competition on countries in the Global South, particularly regions such as Africa and Southeast Asia, to analyse how local governments balance their relationships with both China and India. Furthermore, studying the role of multilateral organisations such as BRICS and the Shanghai Cooperation Organisation (SCO) in either moderating or exacerbating tensions between the two countries will provide valuable insights into changes in the global order.

In conclusion, although the competition between China and India in the Global South offers opportunities for development and expanding influence, it also presents challenges that need to be addressed strategically. The dynamics in this competition will continue to have a significant impact on international relations and remain an important area for further study.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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Myanmar's responses to major power strategies in the Indo-Pacific in the early 21st century

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Abstract:

Since 1948, Myanmar has advocated implementing a non-aligned foreign policy to maintain its autonomy in international relations. Throughout the country's history, Myanmar's foreign policy towards major powers has resembled a pendulum swinging back and forth between "positive non-alignment" and "negative neutrality". In the early 21st century, with the foreign policy adjustments of major countries in the Indo-Pacific region (specifically the US, China, India, and Japan), Myanmar has also had to respond with policy adjustments to ensure its own development. In recent years, as they have faced significant international and regional changes, major powers have adjusted their foreign strategies, including those related to the Indo-Pacific region. By employing a combination of historical and international relations research methods, this article aims to analyse the transition from Myanmar's "positive non-alignment" policy to its "negative neutrality" policy in response to changes in the country's international, regional, and internal situations. Myanmar's policies in recent decades may offer references for consideration in Vietnam's foreign policy formulation.

Keywords: **foreign policies, Indo-Pacific, major powers, Myanmar, Vietnam.**

Classification numbers: **5.1, 5.2, 8.1**

1. Introduction

In recent years, as they have faced significant international and regional changes, major powers have adjusted their foreign strategies, including those related to the Indo-Pacific region. Linking the Indian Ocean to the Western Pacific, this region is at the heart of global political and economic strategic interests. Currently, the Indo-Pacific region, with its vast array of resources and numerous "choke point"[1] sea routes, is increasingly of geostrategic importance in the early decades of the 21st century. Consequently, some of the region's great powers have adjusted their foreign strategies to expand their sphere of influence and safeguard their interests, including the US, China, India, and Japan. In this context, as a country within the Indo-Pacific region, Myanmar has adjusted its foreign policy from the beginning of the 21st century to the present.

This article employs a combination of historical and international relations research methods to analyse Myanmar's policy responses amid the strategic adjustments of major powers in the Indo-Pacific region. In addition to reviewing the studies and evaluations of previous scholars, the author utilises a comparative approach to assess the practical interaction between theory and data, as well as the levels of analysis and policy analysis methods employed in the article. This article comprises three main sections: (i) The strategic

[1]The Suez Canal, Bab-el-Mandeb, the Strait of Hormuz, the Mozambique Channel, the Strait of Malacca, the Sunda Strait, and the Isthmus Lombok Sea.

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adjustments of several major countries in the Indo-Pacific region; (ii) Myanmar's responses to these strategic adjustments; (iii) Some lessons learned for Vietnam in the current context.

2. An overview of the strategic adjustments of some major countries towards the Indo-Pacific region in recent years

For the US, despite not being the first country to introduce the Indo-Pacific concept, it is a pioneer in implementing and executing the "Free and open Indo-Pacific" (FOIP) strategy to re-establish its balance in Asia, counterbalancing China's rise, and developing alliances and partnerships to strengthen the interests of the Washington government. The US FOIP strategy is built on three pillars: security, economy, and governance. The goals of this US strategy are: Firstly, to maintain long-term US leadership in the region and globally, in the context of China (and Russia) being publicly identified by the US as competitors in America's leading strategy in the 2017 National Security Strategy and the 2018 National Defense Strategy; secondly, to promote free, fair, and reciprocal trade. The US does not tolerate trade deficits and trade abuses by other countries. Instead, The US requires its trading partner countries to behave equitably and responsibly towards it; thirdly, to maintain open sea and airspace in the region; fourthly, to effectively confront traditional and non-traditional security challenges, including North Korea's nuclear programme; lastly, to ensure respect for laws and individual rights [1]. The US FOIP strategy focuses on ensuring the country's interests, emphasising the "4P" formula in a clear order of priority: Prosperity, Peace, Power through the deployment of US strength, and finally, influence through US values and Principles [2].

The core goal of the US Indo-Pacific strategy is to build a "Quadrilateral security dialogue" alliance (abbreviated as QUAD, including the US, Japan, Australia, and India) to balance China's growing influence in the region, thereby maintaining the US's economic interests, political power, military, and diplomatic strength [3]. It can be said that the US's steps in promoting strategic cooperation, strengthening engagement on all economic, political, and security fronts, and building partnerships and alliances with countries in the region demonstrate the US's long-term determination: The US is and will be an Indo-Pacific nation.

For China, as a great power both in Asia and globally, it cannot ignore strategically important regions such as the Indo-Pacific. Since the end of the Cold War, particularly in the first two decades of the 21st century, China's rise has significantly influenced global development, altering the global distribution of power. According to R.D. Kaplan (2012) [4], a professor at the US Naval Academy, "China is currently changing the balance of power in the Eastern Hemisphere. On land and sea, the country's influence extends from Central Asia to the Russian Far East and from the East Sea to the Indian Ocean". It is evident that through the implementation of the "String of pearls" strategy and the "Belt and Road" initiative (BRI), China has concretised its "big power" ambitions in the Indo-Pacific region.

The "String of pearls" is the term used to describe China's maritime route from the south of the country through the Red Sea, the Gulf of Aden, the Gulf of Oman, and the Lombok Strait to the Indian Ocean. Accordingly, military bases on Hainan Island, container shipping facilities in Chittagong (Bangladesh), deep-water ports in Sittwe, Kyaukpyu, and Yangon (Myanmar), and a naval base in Gwadar (Pakistan), as well as Sri Lanka's Hambantota port, are considered "pearls". These "pearls" extend from the shores of mainland China through the East Sea, the Strait of Malacca, across the Indian Ocean, and to the reefs of the Arabian Sea and the Persian Gulf [5]. Each "pearl" in the "String of pearls" represents China's geopolitical influence or military presence in the Indo-Pacific, the East Sea, and other strategic waters. With this strategy, China aims to expand its influence from Hainan in the East Sea through the world's busiest sea routes towards the Persian Gulf, with the primary goals of containing India, ensuring energy security, and gaining control of important maritime routes [6].

In 2014, China launched the Silk Road Economic Belt Initiative (a land corridor from China through Central Asia and Russia to Europe) and the 21st Century Maritime Silk Road, which runs from the Strait of Malacca to India, the Middle East, and East Africa (referred to as the BRI). China's BRI places the highest priority on the maritime sector when proposing the 21st Century Maritime Silk Road, which aims to connect seaports, one of the two main connections between China and Europe [7]. In addition, China is implementing the "two-ocean" strategy to expand its naval forces into the Indian Ocean [8]. This initiative aims to achieve strategic goals in politics, security, economics, and territorial sovereignty, as well as to establish a new framework of rules in the region and the world, in which China plays a leading role [9].

As a continental power and occupying a strategic position in the heart of the Indian Ocean, India is a prominent actor in the Indo-Pacific region and one of the most important supporters of the Indo-Pacific strategy. Implemented since 1992, India's "Look East" policy connected this South Asian country with Southeast Asian and East Asian countries. In 2014, after becoming Prime Minister of India, Mr. Narendra Modi revised the "Look East" policy to the "Act East" policy. This is a significant step in India's foreign policy, elevating the country's international engagement. Prime Minister Narendra Modi's "Act East" policy has strengthened India's approach in the Indo-Pacific region, increasing its engagement through a strategic partnership system. In addition, India also offers a vision for the Indo-Pacific region, aiming to promote peace and stability through a fair approach at sea and in the air, freedom of navigation, and maritime crime prevention, while protecting the marine environment and developing a blue economy [10]. In 2015, in the report "Ensuring maritime security: India's maritime security strategy", India clearly stated that the country's strategic vision had shifted from the Euro-Atlantic to the Indo-Pacific, in association with the "Act East" policy. At the Shangri-La Dialogue (June 2016), Prime Minister Narendra Modi outlined India's vision for the Indo-Pacific region, emphasising India's participation in regional, ASEAN-centred organisations, such as the East Asia Summit (EAS) and the ASEAN Defence Ministers' Meeting Plus (ADMM+). For India, strengthening security cooperation with the US, promoting a special strategic partnership with Japan, and maintaining relations with Australia are key strategic focuses in shaping the region's economic and security structures, based on the QUAD alliance.

For Japan, this country plays a crucial role in shaping and promoting the Indo-Pacific strategy. In April 2017, the Government of former Prime Minister Shinzo Abe launched the Free and Open Inde-Pacific (FOIP) initiative to emphasise the importance of linking the Indian Ocean with the Pacific Ocean, confirming that Tokyo will expand its strategic role and vision, "actively contributing to peace" in this vast region. This initiative has three pillars: (1) Promoting and establishing an order based on the principles of international law, freedom of navigation, and freedom of trade; (2) Pursuing economic prosperity (improving connectivity and strengthening economic partnerships, including EPA/FTA and investment treaties); (3) Committing to peace and stability [11]. The main goals of Japan's FOIP initiative are: Firstly, to promote connectivity between Asia, the Middle East, and Africa, in which the Indian Ocean is of geopolitical and strategic importance to Japan's security; secondly, to strengthen Japan's image and global position as a major country; thirdly, to cement the alliance with the US; fourthly, to balance influence with China [11].

Unlike the US, Japan views military security cooperation as core and prioritises freedom of navigation, respect, and compliance with the law. To implement its FOIP strategy, Japan has deployed a series of measures such as increasing participation in multilateral military cooperation with Southeast Asian countries, participating in joint exercises with India and Australia, establishing a military base in Djibouti to support peacekeeping operations in South Sudan, and participating in a training programme for forces in Djibouti. An effective method that plays a crucial role as a source of "soft power" to enhance diplomatic influence and serve Japan's direct interests in the Indo-Pacific region is financial support for numerous countries in South Asia, Southeast Asia, and Africa. These moves and policies demonstrate Japan's active efforts to participate in this important strategic area.

It is evident that the strategic, economic, and commercial importance of the Indo-Pacific region has made it the world's focus of competition and confrontation, altering the nature of international politics. This region has become the "pivot" of international conflicts and power dynamics, creating a significant new geopolitical landscape in the 21st century. With its location at the heart of the Indo-Pacific region, Myanmar is situated at the crossroads of Northeast Asia, Southeast Asia, and South Asia, gradually becoming a destination for many world powers. Myanmar is not only a "sliding board" for India to enter the Southeast Asian market but also a key factor in the BRI and China's "String of pearls" strategy, serving as an important link in the US's strategic "pivot" to the Asia-Pacific region, "controlling" the rise of China and India, maintaining the US's strategic balance in Asia, and preserving its dominant position in the existing world geopolitical chessboard. Myanmar holds an important strategic position in Asia; no other Asian country possesses sufficient geographical advantages to connect China and India, making it a focal point for major countries (the US, China, India, and Japan) that seek a significant presence in what is considered the "crossroads of Asia". In this context, Myanmar needs to adopt appropriate foreign policies considering the complex Indo-Pacific geopolitics.

3. Myanmar's policies in response to strategic adjustments by major countries

Since independence, Myanmar's foreign policies have been defined by one overarching goal: protecting the country's autonomy, independence, and ability to manoeuvre among major powers [12]. However, this ambitious aim has been pursued in different and sometimes contradictory ways. From a historical perspective, the development and trajectory of Myanmar's foreign policy resemble a pendulum, moving between two types of policies, namely "active non-alignment" and "negative neutrality". The policy of "active non-alignment" seeks to assert autonomy and independence in international relations through the diversification of foreign policy, while the policy of "negative neutrality" involves minimising the country's relationships with other nations (except China).

From the end of the Cold War until before 2011, Myanmar's foreign policy towards major powers such as the US, China, and India was generally oriented towards the military government's priority goals of protecting the country's independence, peace and stability, and minimising external interference in domestic affairs. In the minds of the generals, the country, the government, and the Tatmadaw are a unified bloc. Therefore, a threat to one of these three is considered a threat to all. This explains why the efforts of the US, China, India, and others to urge the generals to conduct national reconciliation and political reform have had almost no results. In response to the strategic adjustments of major powers and the country's geostrategic importance in the Indo-Pacific, Myanmar has also adjusted its foreign policy since the beginning of the 21st century.

3.1. From 2011 to 2016: Implementing the "active non-alignment" policy

After coming to power in March 2011 under the leadership of General Thein Sein, the Union Solidarity and Development Party (USDP) implemented domestic political reforms aimed at gradually reducing the country's dependence on China, particularly in the fields of economics and diplomacy. In addition to actively participating in multilateral institutions, the Myanmar government gradually eased restrictions on political participation, media, and the economy. Notably, on 3 November, 2012, the country announced the Foreign Investment Law, which comprises 238 chapters that clearly regulate land use, tax exemption standards, dispute resolution, and financial transactions [13]. The diversification of foreign policy, along with progress in political reform, has helped Myanmar proactively and actively implement its non-alignment policy.

Thein Sein government's moves attracted international support from the US and Western countries that had previously shunned the military government. After commitments to ease economic sanctions, the Obama administration was willing to welcome Thein Sein's government back into the international community. The US vowed to support the real democratic process and free and fair elections in Myanmar. An important event for the process of improving US-Myanmar relations and US policy towards this country was the official visit to Myanmar by US Secretary of State Hillary Clinton in early December 2011. Hillary Clinton's visit was the first by a US cabinet official in more than 50 years [14]. This historic visit marked a transition from suspicion and confrontation to dialogue, improvement, and normalisation, following more than half a century of cold relations between these two countries. This visit opened a series of visits by foreign ministers of Western countries such as Britain, France, Germany, Norway, Australia, and New Zealand to Myanmar, which financially supported this country and simultaneously promoted the process of quickly lifting a series of sanctions imposed by the US and the West on Myanmar [15].

Thein Sein's strong reorientation of Myanmar's foreign policy is a selective learning of some components of U Nu's active non-aligned stance from 1948 to 1962. The key aspects include enhancing economic diversification to reduce over-reliance on China, implementing a flexible "non-alignment" policy, having clear views and attitudes towards ASEAN and multilateralism, and emphasising the policy of "goodwill diplomacy". As a result of domestic reforms, the Thein Sein government gradually lifted international sanctions and simultaneously increased bilateral aid, loans, and foreign direct investment (FDI). For example, the US began to ease sanctions and initially invest in Myanmar. The Trade and Investment Framework Agreement (TIFA) was signed by the two countries in 2013. Meanwhile, the EU also lifted economic sanctions against Myanmar in early 2012 and restored the Generalised System of Preferences (GSP) as well as import tax exemptions for goods from this Southeast Asian country. In 2012 alone, Myanmar's textile industry experienced an 18% increase in global exports [16]. As for Japan, the country announced debt forgiveness of 2.72 billion USD in 2013 and committed to invest 96 million USD to develop infrastructure in Myanmar (in 2014) [17]. The Thilawa Special Economic Zone (SEZ) was established with a primary focus on investment capital, mainly from Japan, to compete with the Kyaukphyu SEZ, which is backed by China. Japan became Myanmar's fourth-largest trading partner and most important exporter in the automotive sector by 2016. At the same time, two-way trade between Myanmar and the US increased from $9.7 million (in 2010) to $577.2 million (in 2017) [18]. The role of economic diversification in Myanmar is very important, serving as "a hedge" to counter Myanmar's excessive dependence on China.

On the other hand, Myanmar's growing activism in the years 2011-2016 represents a major departure from the diplomatic approach of the 1988-2011 period, when Myanmar was increasingly seen as an "abandoned, reactionary, and isolated state". During those years, Myanmar's negative neutralism was dominated by internal and external factors, stemming from Western criticism following the brutal repression of pro-democracy movements in 1988[2] and the xenophobic ideology of the ruling military government [19]. With the primary influence of nationalism, Myanmar's leadership has not tolerated any form of Western influence in key areas, ranging from politics and economics to culture and society. Meanwhile, China has asserted itself as the main "diplomatic protector" and the largest supplier of military equipment and weapons to the Myanmar military government, typically with Beijing's veto in place at the United Nations (UN) in 2007 and 2009 to block Western-sponsored resolutions against the military regime [20]. As a result, after taking office in 2011, General Thein Sein enlisted international support to adopt a China "hedging" strategy, reducing Myanmar's excessive dependence on China and relaunching a more diverse foreign policy.

3.2. From 2016 to early 2021: Shifting from positive non-alignment to negative neutralism

In the 2015 election, Aung San Suu Kyi's National League for Democracy (NLD) won overwhelmingly and gained the trust of the masses. She also retained strong international support as a longtime democracy icon and Nobel Peace Prize winner. A strong level of political legitimacy and appeal correlates with notable diplomatic proactivity and continuity with the Myanmar government's active non-alignment strategy. In its 2015 foreign policy statement, the NLD pledged to pursue "an active and independent foreign policy" consistent with the country's "independent policy of non-alignment" and neutralism dating from the Cold War era [21]. The document also emphasises democratic values and commits to "working together for the benefit of the region on issues related to regional organisations and programmes, and close relations with the UN, the World Bank, and the International Monetary Fund, and other organisations" [21].

At the same time, Aung San Suu Kyi also signalled a desire to seek practical cooperation with China to promote the country's economic and strategic interests. In contrast to Thein Sein, she adopted a relatively "softer" stance towards Beijing and actively supported infrastructure investment in China's BRI in Myanmar through the China-Myanmar Economic Corridor (CMEC). This economic corridor connects Yunnan (China) with Mandalay city in Central Myanmar, then expands in two directions, to Yangon city and Kyaukpyu SEZ, forming the three-pillar cooperation platform of CMEC [22]. In an interview with Chinese media, Ms. Aung San Suu Kyi stated that "Myanmar has no enemies, but relations with neighbouring countries are more sensitive than others and need to be paid careful attention" [23]. If Thein Sein's years in power marked a turning point in the relationship between Myanmar and China, her trip sought to mend relations with Naypyidaw's powerful neighbour.

With efforts to capitalise on Chinese investment, Aung San Suu Kyi returned to Beijing in 2017 to attend the inaugural "Belt and Road" forum. While rapprochement with Beijing was buoyant, relations with the West cooled over Myanmar's Rakhine State crisis and violence against the Rohingya Muslim minority. Facing growing criticism from Western media and politicians, Suu Kyi's government expounded on the importance of self-reliance and rejected allegations of military atrocities by the Myanmar Army (the Tatmadaw), claiming that outsiders do not understand the complexity of Myanmar's internal problems. These dramatic developments complicated the normalisation process with the US and Western countries under Aung San Suu Kyi's government.

After the Rohingya Muslim crisis, the NLD party became increasingly reactive to international criticism, investor caution, and estrangement from Western

[2]On 8 August, 1988, thousands of students and people in the capital Rangoon and other major cities took to the streets to protest against government corruption, stifling democracy, and incompetence in economic management and development of the country (Burmese history calls it the "8888" event). However, the protest was brutally suppressed by the military government. This caused thousands of students and innocent Myanmar people to die. This event was strongly condemned by the UN, the US, Western countries... and India. This is also the main reason why the US and Western countries implement a policy of embargo and economic sanctions against Myanmar. In that context, China not only did not object but also supported and sponsored the Myanmar military government.

partners. As a result, the NLD and Aung San Suu Kyi adopted a pro-military stance to bolster domestic political legitimacy, retreating from active participation in multilateral diplomacy and adopting a "go alone" approach, while increasingly relying on Beijing's economic and diplomatic patronage. This approach reflects a shift away from the positive non-alignment position pursued by Thein Sein towards a more neutral stance. Growing criticism from the US and European countries over the Aung San Suu Kyi government's failure to address Tatmadaw atrocities in Rakhine State prompted isolation and condemnation from the international community and ignited Myanmar's nationalism. The NLD faced pressure from Washington to fulfil its promise to repatriate Rohingya refugees, and in 2018, the Trump administration sanctioned four military commanders linked to the previous year's violence in Rakhine State [24], as well as Commander-in-Chief Min Aung Hlaing in December 2019 [25].

In an election speech in September 2020, Aung San Suu Kyi emphasised that "criticism and pressure from outside are not understanding, sympathy, and help" [26]. This is the clearest manifestation of the Myanmar government's increasingly isolationist worldview and adoption of negative neutralism. Naypyidaw repeatedly bypassed multilateral institutions, avoiding the UN General Assembly in 2017, 2018, and 2019. Although Aung San Suu Kyi attended most ASEAN summits as a Foreign Minister, she skipped the 32nd ASEAN Summit in Singapore in April 2018 [27]. Facing condemnation from the US and the West, Naypyidaw strengthened relations with Beijing. In the absence of Western investment, Chinese FDI in Myanmar returned to its previous high, accounting for nearly 40% of total FDI coming from China (including Hong Kong) between 2019 and 2020 [28]. The strengthening of Myanmar - China relations under the NLD reflects the fact that Myanmar is increasingly distanced from the West and multilateral institutions such as ASEAN due to the Rohingya crisis and Aung San Suu Kyi's defense of the military at The Hague in 2019. Myanmar's foreign policy from 2017 to 2021 demonstrated a shift towards self-reliance and a growing distrust of outsiders, while economic growth and peace negotiations stalled. The NLD has failed to tackle economic inequality, instead supporting state-led development projects while promoting individual self-reliance as the path to a more solidary country - all characteristics associated with the country's negative neutralism [29].

3.3. Since the coup (early February 2021) until now: Deepening negative neutralism

The developments surrounding the coup event in early 2021 in Myanmar have had a significant impact on the country's policy and the development of diplomatic relations. On the morning of 1 February 2021, the Myanmar army took control of the Yangon City Hall, declared a state of emergency, and arrested State Counsellor Aung San Suu Kyi along with a series of powerful civilian leaders. Power was assigned to the army commander-in-chief, Mr. Min Aung Hlaing. The Myanmar military claimed that these actions were necessary to protect the "stability" of the country and accused the National Election Commission of failing to address "major irregularities" in the November 2020 general election. Specifically, the Myanmar Federal Election Commission did not investigate and report on election irregularities that the military and some opposition political parties had requested [30]. The coup was opposed by domestic voters and the international community due to its lack of political legitimacy. The US, UK, UN, and European Union (EU) condemned the coup, calling on the Myanmar military to return power to the civilian government promptly. New Zealand was the first foreign government to take specific action to protest Myanmar's coup, announcing the end of high-level military and political contact with Myanmar. As a result, Naypyidaw deepened its negative neutralism by turning inward and separating from the world.

The Myanmar military's violence against civilians has returned the country to a state of international isolation not seen since 2011. The military junta's internal and external sources of political legitimacy have gradually declined, apart from limited support from Beijing. China appeared more cautious, emphasising the importance of stability and calling on the international community not to "exacerbate tensions and complicate the situation in Myanmar". China's Xinhua News Agency referred to the events of 1st February as "a cabinet reshuffle" rather than a "coup", as characterised by Western media [31]. Both factions in the political upheaval in Myanmar maintain friendly relations with Beijing, leaving China with little option but to "keep quiet".

The crisis in Myanmar has persisted for three years since the military coup took power in the country. During this time, Myanmar has been deeply embroiled in bloody civil wars between rebel forces and the military government, further exacerbating the country's economic, political, and social crises. The tense relationship between the civilian and military governments has been a longstanding issue throughout many stages of Myanmar's politics. On 16 April 2021, the National Unity Government (NUG) was established, bringing together members of the National League for Democracy (NLD), representatives of various ethnic groups, and others abroad to oppose the military government. The NUG's formation is driven by the aspiration to defy the military regime and restore democratic rule, upholding the results of the 2020 general election [32]. So far, the NUG has primarily highlighted its intention to implement independent foreign policies and cooperate with those who support democratic rule in Myanmar [33]. The main goals of the NUG's foreign policy include: a) Gaining international recognition as the legitimate representative of the people of Myanmar; b) Garnering widespread support for its struggle against military dictatorship; and c) Increasing international pressure against the military government, thereby denying the military's legitimacy as a representative of Myanmar on international and regional stages [34]. Under the mediation of China, a ceasefire agreement has been implemented among the three factions and the military. Myanmar is expected to hold civilian elections in 2025, but it is difficult to predict whether this will lead to a mutually beneficial outcome in the conflict.

Although it is too early to make an accurate assessment of the military government's neutral foreign policy strategy, some observations can be made at this time. Firstly, the poor economic policies of the State Administrative Council (SAC) and weak efforts to control the COVID-19 outbreak have resulted in a currency crisis, a flight of investors, and the near-total collapse of the financial sector. Secondly, like the rule of Myanmar's military government from 1988 to 2011, General Min Aung Hlaing's regime has adopted a distinctive stance on international affairs, espousing xenophobic ideologies while transitioning from a free market economy to self-reliance. Consequently, Myanmar has become increasingly dependent on Beijing for economic and diplomatic support. Furthermore, the Min Aung Hlaing government has actively taken advantage of China's patronage by announcing the restoration of the country's infrastructure projects, particularly hydroelectric dams that were stalled under the previous government. Arguably, with Myanmar's deepening isolation under military rule, the SAC has demonstrated a firm commitment to a brand of negative neutralism and an inward-looking reaction.

4. Conclusions

With its significant geopolitical position, the Indo-Pacific region holds strategic importance for the development of international trade, playing a crucial role in the transportation of oil, gas, and goods worldwide, from the Middle East to Australia and East Asia. The strategic significance of this region has profoundly influenced the current foreign policy adjustments of several countries within it, including the US, China, Japan, and India. Given its central location in the Indo-Pacific region, Myanmar is increasingly becoming the "focus" of the foreign policies of many major powers. In this geopolitical context, Myanmar has adopted appropriate policy responses.

Throughout history, neutrality has been regarded as a key factor in Myanmar's foreign policy, manifesting differently in accordance with each historical period of the country. Despite certain changes in relations with the US, China, and India, the Myanmar government has consistently adhered to its neutral, non-aligned policy, endeavouring to balance the interests of major powers in its foreign policy. In other words, neutrality and the balance of power will remain fundamental principles in Myanmar's foreign policy and diplomatic activities.

In the context of the new world order being shaped and the rapidly changing regional situation, particularly concerning maritime security in the Indo-Pacific, Vietnam may consider developing appropriate foreign policy planning, contributing to the establishment of common rules of the game in accordance with international law and national interests.

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Exploring Joseon history through the royal lives and political roles of Joseon queens: The case of the Yeoheung Min clan

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Abstract:

Confucianism not only played a dominant role throughout the 500-year history of the Joseon dynasty but also became deeply embedded in various cultural, political, and social aspects of the kingdom since its establishment. Compared to the preceding Goryeo dynasty, Confucianism gained dominance during the gradual decline of Buddhism due to the "Respect Confucianism, Suppress Buddhism" policy executed by the Joseon ruling classes. However, over its long history, Joseon Confucianism itself underwent significant changes, which were reflected chronologically through the political and social transformations of the period. In this article, the author seeks to explore the royal life and political roles of Joseon queens from the Yeoheung Min clan (present-day Yeoju city, Gyeonggi-do) to shed light on the development and enforcement of Confucianism. Furthermore, this study proposes an approach to understanding Joseon history through the analysis of several influential individuals, consequently contributing to an empirical method of teaching and researching Korean political history.

Keywords: **Joseon queens, political history of Joseon, Yeoheung Min clan.**

Classification numbers: **5.1, 8.1, 9.3**

1. Theoretical framework of the research

1.1. Remapping of the historical periods of the Joseon dynasty

In terms of ideology, Confucianism dominated the 500 years of Joseon history (1392-1897) and chronologically became the cultural, political, and social driving force in numerous aspects of the dynasty since its founding. Compared to the previous Goryeo (918-1392) dynasty, Confucianism became hegemonic alongside the gradual decline of Buddhism due to the policy known as "Respect Confucianism, Suppress Buddhism", implemented by the *Sadaebu* (the nobility). However, throughout its long history, Joseon Confucianism itself also experienced various changes, which were chronologically reflected in the political and social transformations of the dynasty. This poses a significant challenge for researchers of Joseon history - especially for foreign scholars whose approach requires more than just an understanding of the Korean language. It can be argued that a comprehensive grasp of Confucianism as the orthodox ideology of the dynasty is equally essential. Therefore, developing a concise and coherent approach is crucial for teaching, studying, and researching Joseon history abroad. One possible approach to studying Joseon political history is to examine specific periods in conjunction with the dominant ideologies of those times, as well as to analyse historical figures who represent the contemporary political trends or ideologies.

In the article "The roles of *Cheonghak* upon the relations between the Joseon dynasty and the Qing Empire via the analysis of *Joseon Wangjo Sillok*",

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the authors proposed an approach to political and diplomatic transformation in Korea within the context of defined regional political milestones. This approach aligns Korean history with the Chinese political landscape, particularly during the transition of power between the Ming and Qing dynasties (known as *myeongcheong gyoje* in Korean historical texts), from the late 16th century to the mid-17th century. Based on this view, Joseon history is divided into three phases: Early, Middle, and Late Periods [1]. In other words, this interpretation identifies China as the central regional powerhouse around which Korean political history must be structured. Although this argument is not entirely incorrect, it limits the interpretation of Joseon history to a one-sided perspective, thereby overlooking the uniqueness of Joseon's socio-political characteristics throughout its five centuries of existence. In this light, Joseon is often placed as a planetary entity orbiting around the Chinese empires.

This study explores the political situation of Joseon based on a conventional historical division that is familiar to Korean historians, which divides the 500 years of Joseon history into smaller periods determined by internal political factors driven by the central ruling factions [2]. As such, the political history of Joseon can be examined through major periods such as: Early Joseon, Joseon of the *Sahwa* (literary purge) period, the *Dangjaeng* (factionalism) period, Joseon of the *Sedo Jeongchi* (Sedo factionalism) period, Joseon in its closing stage under the reign of Grand Prince Heungseondaewongun and Joseon during the period of *Kaehwa* (enlightenment) period. This division reflects the political trends of Confucian scholars and the central nobility throughout the Joseon period and helps clarify the role of influential individuals in the course of Joseon's during Joseon political transformations.

1.2. Research methodology

To ensure the completion of a study with such a broad scope as the Joseon dynasty of Korea, the author employs the method of analysing and synthesising previously published in-depth research which also includes related studies conducted by the author. During the process of synthesising materials, the author selectively identifies case samples that are considered representative figures, highlighting the political and social characteristics of each examined period. Through this approach, the study aims to fulfil its objective of outlining the transformations of Confucian ideology within the political system of Joseon.

In addition to the method of analysing and synthesising, commonly used in historical research, this study adopts a microhistorical approach focusing on individuals. Microhistory, as a methodological framework - developed by pioneering Italian researchers such as Carlo Ginzburg, Giovanni Levi, etc., - seeks to illuminate macro-level historical structures by analysing the experiences, decisions, and agency of individuals whose lives intersected with significant political or ideological shifts. Within this framework, this research is designed to focus on the lives of specific individuals - namely, the three queens of the Yeoheung Min clan - as a lens through which broader socio-political transformations of the Joseon dynasty can be discussed.

2. The position of the Min clan in the Yeoheung region of Joseon

This research focuses on analysing the lives of the Joseon queens from the Min clan of the Yeoheung region (Yeoju city, Gyeonggi province) to illustrate the political and historical processes of the Joseon dynasty. According to historical data collected by descendants of the Min clan who remain in Korea, the Min clan of the Yeoheung region produced many influential ministers and high-ranking officials in the central government of the Goryeo dynasty, beginning with the reign of King Gongmin (the 31st king of Goryeo) [3]. Many related records affirm the social status of the Min clan within Goryeo's political framework - particularly during the late Goryeo period, when up to 80% of court officials were said to have originated from the Min clan of Yeoheung [4].

The Min clan has also been regarded by some scholars as having originated from Chinese ancestors who migrated to the Korean Peninsula during the Goryeo period [5]. Despite this theory, the genealogy website of present-day Min clan descendants asserts that their forebears were indigenous, with roots deeply established in the Yeoheung region since ancient times. However, several historical facts indicate that it was not until the reign of the 31st Goryeo king that the Min clan's political status became prominent within the kingdom - an interesting development in itself. King Gongmin's reign marked the final phase of the Goryeo dynasty, according to the Database of the National Institute of Korean History. He was particularly noted for his reform efforts of executing reform policies to minimise the influence of China's Yuan dynasty. One of those efforts was to weaken the influence of pro-Yuan political factions within the Goryeo court, aiming to restore the legitimate kingship of Goryeo royalties. King Gongmin's sudden death while pursuing that policy was believed to be related to those whose long-term interests and benefits were tied to the Yuan dynasty (China) [6].

The Yeoheung Min clan was recognised as one of the three most prestigious families throughout the Goryeo period. However, when Joseon was founded by Lee Seonggye and his supporters - *Sadaebu* (renovative noble class), the clan began to align itself with the newly established ruling power. As one of the three major clans during the Goryeo period, it has been shown that the Yeoheung Min clan maintained a strong presence as a "powerful clan" within the central government, and its political prestige was presumably tied to the influence of the Yuan dynasty on the Korean Peninsula. Furthermore, during the century - long period of Yuan "intervention", the *Gwonmunsejok* (powerful noble clans) at the central governmental level of the dynasty were often linked by blood to the Yuan ruling nobility. Therefore, it is not historically unreasonable to speculate that the Min clan may have had ancestral origins in China.

Throughout its five-hundred-year history, Joseon witnessed the enthronement of a total of twenty-six kings [7], with the number of legitimate queens who held authority over the royal harem exceeding that of the kings themselves. Among the many prestigious families that produced queens, the Kim clan was the most prominent; however, the Min clan also distinguished itself, with three women of their own who were endowed with the highest status in the kingdom: Queen Wongyeong of King Taejong (the first legitimate wife of the third king of Joseon); queen Inhyeon of king Sukjong (the second legitimate wife of the nineteenth king of Joseon); and queen Myeongseong of King Gojong (the legitimate wife of the twenty-sixth king of Joseon).

These three queens appeared on the political stage of Joseon during critical periods of the Joseon Dynasty's history. Queen Wongyeong was adept at managing internal court affairs and the royal harem. She was also well known for assisting her husband in consolidating power, planning to help her husband win the throne over rival princes [2]. Queen Inhyeon became King Sukjong's second legitimate wife amid the whirlwind of fierce struggle for power of the two dominant political factions - the Westerners and the Southerners [2]. Unlike her predecessors from the Min clan, Queen Myeongseong entered the palace at a time when her family's influence was already in decline. Possessing intelligence and a strategic mind befitting a young lady from a prestigious family, Queen Myeongseong ultimately captivated her husband's heart, becoming a powerful politician that assisted the king to regain his rule [2].

3. Lives of the three queens of the Yeoheung Min clan and their influences on Joseon's political situations

3.1. Queen Wongyeong - the legitimate wife of King Taejong

In the early stage of the Joseon dynasty, owing to the lingering influence of Goryeo customs, the Confucian concept of womanhood was not yet fully implemented. Presumably, this was because many of the kingdom's founding contributors - those who were born and died alongside Lee Seonggye - had mothers who were believed to have remarried more than once. Therefore, even though the *sadaebu* (the highest nobility of the central government) announced regulations restricting women's remarriage, many still divorced and remarried multiple times. In addition, due to the prevailing cultural and social practices inherited from the previous dynasty, men and women in early Joseon society still retained equal rights in matters of property inheritance. With little differentiation between the genders, women of early Joseon were also permitted to perform as ceremonial masters during ancestral rituals [2].

Queen Wongyeong, consort of King Taejong, made significant contributions in supporting her husband, known as Prince Lee Bangseok prior to his enthronement, in his quest for the throne. Lee Bangseok is the son of Lady Han, who was married to Lee Seonggye as his first legitimate wife before he became the king of Joseon. When Joseon was founded, Lee Bangseok had already been an adult. He accompanied his father regardless of life and death, and he gained numerous achievements in the battle with Lee Seonggye - his father. In addition, compared to other princes, he was also keen on studying and better at letters [8]. Meanwhile, as a noble lady born into one of the most prestigious clans since the Goryeo period, Queen Wongyeong possessed exceptional skill in managing internal affairs and offering strategic counsel. After her husband successfully seized supreme power, she aspired to share that authority with him as a means of strengthening the political standing of the Yeoheung Min clan. However, King Taejong, whose iron rule overcame repeated political challenges - including the oppression of his stepmother, Queen Kang (the legitimate wife of Lee Seonggye), and the elimination of rival princes through two princely rebellions in 1398 and 1400 Lee Bangseok - ultimately refused to share his authority with his wife's family. Toward the end of her life, Queen Wongyeong witnessed her family being persecuted by King Taejong, with many of her relatives exiled to their homeland. To prevent power abuse by his wife's family, King Taejong did not hesitate to get married to many other concubines, many of whom were daughters of high-ranking mandarins in the court, estranging his legitimate wife [9]. Furthermore, the Joseon policy of "Respect Confucianism, Suppress Buddhism" was also actively promoted during King Taejong's reign, as he recognised that the political interference of Buddhism had persisted since the previous dynasty [9].

Queen Wongyeong, the first queen of the Min clan, though born in the noble class of the kingdom, soon became entrapped within the newly established Confucian ideological system, in which women's rights were severely limited and dependent on their husbands' families. She can be regarded as a historical "victim" who had to be sacrificed for the solid establishment of the dynasty's political foundation. Despite all the bitterness she endured, her greatest consolation after death was perhaps the honour that her son was selected to be the fourth King of the dynasty: Sejong!

3.2. Queen Inhyeon - the second legitimate wife of King Sukjong

Sukjong, the nineteenth king of the Joseon dynasty, reigned from 1674 to 1720. Joseon under Sukjong' reign experienced fierce conflicts between political factions within the central government. Sukjong's reign fell within the period of *Tangjaeng* (party struggle) in Korean history [10]. Amongst dominant factions, the Southerners and the Westerners were known to be two of the most influential forces capable of challenging even the King's authority. Sukjong's first legitimate wife was Queen Ingyeong of the Kim clan, whose family stood with the Western faction. After Queen Ingyeong's death from illness in her twenties, the Westerners immediately arranged for Queen Inhyeon of the Yeoheung Min clan to enter the palace, in order to consolidate their faction's political standing [2].

According to the *Veritable Records of The Joseon Dynasty*, Queen Inhyeon was widely adored by both courtiers and the public for her virtue and dignity. However, when she entered the palace, King Sukjong's affection was directed toward a woman of lower birth - Royal Noble Consort Huibin of the Jang clan. Nominated by the Westerners, Queen Inhyeon was not favoured by Sukjong and could not bear him any children. When Huibin of the Jang clan gave birth to Prince Yoon, King Sukjong's affection for her grew stronger. Huibin's mother was even invited to the palace in a jade palanquin - an honour traditionally reserved for the mothers of Queens from noble families. The fact that Huibin's mother, once a servant to the previous King's Queen, was treated with such honour agitated severe opposition from the Westerners [2].

Under the pretext that the Westerners were disrespectful toward the "mother-in-law" he favoured, King Sukjong expressed his distrust of the Western faction and began appointing key positions to members of the Southerners. With the decline of the Western faction, Queen Inhyeon was left without political support. As a result, King Sukjong, together with officials of the Southern faction, managed to depose the Queen and exile her to a remote palace, where she lived the life of a commoner. Within the royal court, royal noble consort Huibin was elevated to the position of Queen, and her son was declared crown prince. However, over time, due to her commoner background and misconduct, royal noble consort Huibin gradually fell out of the King's favour. Moreover, many senior officials of the Southern faction - her key political supporters - were found guilty of corruption and abuse of power. Disillusioned and nostalgic for his lawful wife of the Min clan, King Sukjong eventually reinstated Queen Inhyeon after five to six years of living in poverty outside the royal palace. At the same time, Royal Noble Consort Huibin was downgraded her previous status in the harem in parallel with the fact that the Southern faction was no longer trusted by the King as before [2]. Although restored to her position as the head of the royal King's harem, Queen Inhyeon never fully recovered from the suffering and illness endured during her years of exile. She passed away at the age of thirty-five [9].

Queen Inhyeon's life is a tragic depiction of a noble woman in the mid-period of the Joseon dynasty. She was honoured with the highest position in the kingdom, later deposed and forced to live in poverty outside the palace, and eventually restored to her status. Despite being loved by both the people and the courtiers for her noble virtues, she remained powerless to determine her own fate, becoming a mere "pawn" in the political struggles of others. Compared to Queen Wongyeong of King Taejong, Queen Inhyeon was completely constrained within the Confucian framework of womanhood, and her life rose and fell in accordance with the political tides of the kingdom.

3.3. Queen Myeongseong - the legitimate wife of King Gojong

Myeongseong, consort of King Gojong, can be regarded as the last queen of the Joseon dynasty. In Korean history, the reigns of three Kings - Sunjo, Hyeonjong, and Cheoljong - during the nineteenth century are commonly referred to as the period of *sedo jeongchi* "worldly politics". Lasting for roughly sixty years, this era was marked by intense competition for power between the King's maternal families, particularly between the Jo clan of the Pungyang region and the Kim clan of the Andong region. This situation was exacerbated by the fact that all three Kings were enthroned at a very young age [11].

When Cheoljong, the twenty-fifth king of Joseon, died without an heir, the Queen Dowager of the Pungyang Jo clan immediately nominated a successor from one of the royal members. To prevent the power expansion of the An Dong Kim clan, the Queen Dowager decided to choose a distant prince to adopt as her son, thereby proclaiming him the new successor [12].

Similar to the previous three kings, Gojong was enthroned at a very young age. Initially, the Queen Dowager of the Pungyang Jo clan served as regent. However, after some time, she entrusted the regency to Gojong's biological father, Grand Prince Heungson Daewongun [12]. Holding authority as the King's father, Grand Prince Heungseon Daewongun ruled the kingdom over his son for approximately ten years, during which he succeeded in restoring royal power to the Lee monarchy. In order to prolong his control and prevent the re-emergence of *sedo jeongchi* - the political interference of the King's in-laws - Grand Prince Heungseon Daewongun harboured hidden motives when selecting a legitimate wife for King Gojong. His own wife belonged to the Min clan, and through her arrangement, a young lady from the same clan was chosen as Gojong's Queen. Although Queen Myeongseong hailed from a distinguished lineage, her family had long since declined in influence, as there were no high-ranking officials from her clan holding significant power in the central government who could threaten the Daewongun's authority [12].

As Queen Myeongseong entered the palace to assume the highest position in the kingdom, King Gojong at that time was deeply fond of Lady Lee. Although she was not initially loved by the King, Queen Myeongseong remained dedicated to fulfilling her duties as the head of the royal harem. Through her diligence and noble character, she gradually won King Gojong's affection. With the political support of the Min clan, she achieved her greatest accomplishment - overthrowing the regency of her father-in-law, Grand Prince Heungseon Daewongun - thereby restoring King Gojong's authority over the throne. Together, she and her husband then paved the way to actively implement reforms which tried to terminate Heungson Daewongun's isolationist policy [12].

Compared to the above two aforementioned Queens, Myeongseong appeared to be the only noblewoman who could exercise agency over both her marital life and her political destiny. Furthermore, she became a symbol of anti-Japanese resistance for the Korean people in the late nineteenth century - a stance that ultimately led to her tragic death at the hands of Japanese assassins during the *Eulmi Sageon* (Assassination of Empress Myeongseong) at Gyeongbok Palace on 8 October 1895 [13].

With hidden deliberately selected a daughter-in-law from a prestigious but deteriorating clan, Grand Prince Heungseon Daewongun was not able to speculate that a humble and fragile young lady who was living with her mother in Yeoheung would grow into a formidable political opponent. Above all, Heungson Daewongun did not expect her level of intelligence raised in a prestigious family, Queen Myeongseong could demonstrate her talent for internal and external governance in the context of foreign affairs during a period of growing foreign intervention in late nineteenth-century Korea.

4. Conclusions

The Queens of the Min clan from the Yeoheung region were born into one of the most prestigious clans throughout the Goryeo period. The Min clan occupied a wide range of land with prime terrain, which had historically been seen as an exchange "hub" between the three kingdoms since the era of the Three Kingdoms. Blessed with fertile soil, the land under the Min clan's governance was also recorded as one of the major rice-producing areas throughout the Goryeo to Joseon periods. With such economic and political advantages from their homeland, the position of being a Queen was rightfully suitable for those who came from this clan. However, such family background or economic status of the clan was not the only factor that ensured the "charm" of the Queens of the Min clan within the flow of Joseon or Korean history. The attraction of the three Queens of the Yeoheung Min clan lies in the historical significance of the times in which they lived.

Queen Wongyeong of Joseon Taejong became the first "victim" of the dynasty's political ideology transition despite her struggles with such changes. On the other hand, Queen Inhyeon of Joseon Sukjong was the epitome of the opposite of a Joseon noblewoman's life. Although coming from a prominent family, in the context where women had long been closely limited by the Confucian concepts of women, Queen Inhyeon had to accept that her fate could be decided by political factions in the mid-Joseon period. Queen Myeongseong of Gojong was born in the late period of Joseon when foreign influences and reformist ideas were being widely introduced into her kingdom along with the gradual weakening of Confucian ideas related to women's roles. She did not surrender to the ideological framework imposed on noble women, yet put her tireless efforts into assisting her husband, by which she became a powerful politician against the Japanese aggression.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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Emperor Minh Mang's policy towards Buddhism (1820-1840)

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Abstract:

Emperor Minh Mang was a ruler who left a significant mark on Vietnam's monarchy with many outstanding achievements in administrative reform, educational and cultural development, territorial unity, and the protection of national sovereignty. While considering Confucianism as the orthodox ideology to assert its unique position, the emperor remained friendly and open to Buddhism. During Emperor Minh Mang's reign, Buddhism experienced significant development, not only in appearance and scale but also in asserting its role in contemporary political, cultural, and social life. The article aims, through reliable sources, to more clearly reflect the state of Vietnamese Buddhism under Emperor Minh Mang's reign, contributing to a new understanding of the development of Vietnamese Buddhism during this period, and then to reassess the emperor's policy toward Buddhism. At the same time, the article will identify the unique characteristics that confirm the positive aspects of Buddhism during this period and clarify the critical role of Buddhism, not only in the past but also in the ongoing process of building and defending Vietnam today.

Keywords: **Buddhism, Minh Mang, monks, pagodas, religious policy.**

Classification numbers: **5.1, 8.1, 11**

1. Introduction

Buddhism spread to Vietnam about two thousand years ago. Despite many ups and downs in its history, Buddhism has always accompanied the nation throughout the journey of building and defending the country, becoming a peaceful foundation in the spiritual life of the Vietnamese people. The sociable, compassionate, and intellectual spirit of this religion was soon embraced by the monarchy in its efforts to govern the country. Emperor Minh Mang, a powerful ruler who left a lasting mark in the nation's history with many outstanding achievements, particularly in administrative reform, educational and cultural development, territorial unity, and sovereignty, was a key figure in this. During his reign, Buddhism not only developed in appearance and scale but also asserted its role in contemporary political, cultural, and social life. Therefore, this period is essential when researching the history of Vietnamese Buddhism.

Research on Vietnamese Buddhism during the Nguyen dynasty in general, and during the reign of Emperor Minh Mang in particular, has been a focus for both domestic and international scholars from quite early on, achieving many significant milestones to date. Prior to 1975, notable contributions came from French authors, including works by L. Cadière, "Chua Quoc An: Ngai khai son, cac vi tru tri" (Quoc An Pagoda: founder and abbots); A. Bonhome, "Chua Thien Mu" (Thien Mu Pagoda); A. Sallet, "Nui da hoa cuong (Ngu Hanh son)" (Marble mountains (Ngu Hanh son)); J.A. Laborde, Chua Bao Quoc (Bao Quoc Pagoda); and A. Sallet and Nguyen Dinh Hoe, "Liet ke den mieu va cac noi tho tu o Hue" (List of temples and religious sites in Hue). Alongside these French scholars, Vietnamese Buddhist monks also contributed substantial works, such as "Vietnam Phat giao su luoc" (A brief history of Vietnamese Buddhism) by Thich Mat The and "Vai net ve Phat giao thoi Nguyen" (Some features of

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Buddhism in the Nguyen Dynasty) by Tran Hong Lien. Additionally, other vital publications have emerged, such as "Chinh sach ton giao cua nha Nguyen dau the ky XIX" (Religious policy of the Nguyen dynasty in the early 19th Century) by Nguyen Van Kiem, "Vai net ve tin nguong, ton giao Viet Nam the ky XIX" (Some features of Vietnamese beliefs and religions in the 19th Century) by Phan Dai Doan, "Chinh sach cua trieu Nguyen doi voi Phat giao va su mau thuan cua no doi voi hien thuc" (The Nguyen dynasty's policy towards Buddhism and its contradictions with reality) by Le Cung, "Ve chinh sach ton giao cua trieu Nguyen, nhung kinh nghiem lich su" (Regarding the Nguyen dynasty's religious policy: Historical lessons) by Do Bang, "Ban gioi diep thien su Dao Lich chua Hoe Nhai" (The ordination certificate of Zen Master Dao Lich from Hoe Nhai Pagoda), "Mot vai net ve hanh trang va tac pham cua Hoa thuong Phuc Dien" (1784-1862) (Some features of the life and works of Venerable Phuc Dien (1784-1862)), and "Su lieu ve Thien su Thanh Thong - Giac Ngo" (Historical records of Zen Master Thanh Thong - Giac Ngo) by Thich Dong Duong. "Bo chinh su lieu ve thien su Minh Hai Phap Bao" (Notable updates to historical records of Zen Master Minh Hai Phap Bao), "Su lieu moi ve phap su Toan Nham Quan Thong" (New historical records of Dharma Master Toan Nham Quan Thong), and "Su lieu moi ve phap su Toan Nhat Quang Dai" (New historical records of Dharma Master Toan Nhat Quang Dai) have been contributed by Thich Nhu Tinh. Research into Emperor Minh Mang's policies toward Buddhism has been an ongoing and dynamic area of study. Scholars have conducted research at various levels and achieved remarkable results. However, there is still a divergence of opinions among researchers, and no comprehensive study has yet focused exclusively on this issue as its main subject.

In carrying out this study, the author updated the most recent research findings and incorporated newly available sources, particularly the Chau ban trieu Nguyen (Imperial records of the Nguyen dynasty). At the same time, the study employed two principal methods of historical science - the historical method and the logical method combined with other supporting approaches such as systemic analysis, summarisation, and comparison. The historical method was applied to reconstruct the historical context and to analyse the events, policies, and practices related to Buddhism in accordance with their emergence and development during Emperor Minh Mang's reign. Consultation of primary sources, including the Chau ban trieu Nguyen, the Dai Nam thuc luc, administrative regulations, royal decrees, and court records, enabled an accurate reflection of the state of Buddhism as well as the emperor's decisions in each period. On that basis, the logical method was used to systematise the collected data, examine the relationships between Minh Mang's policies and the evolution of Buddhism, and thereby clarifying the nature, objectives, and outcomes of these policies. The combination of these two methods not only ensured the reliability of the sources but also contributed to drawing general conclusions, further illuminating the argument on the renaissance of Buddhism under Emperor Minh Mang's reign and its role in the political and cultural life of the period. It is a new contribution because the majority of researchers in the history of Vietnamese Buddhism have supposed that, from the 19th century to the beginning of the reconstruction movement of Buddhism in the early 20th century, Vietnamese Buddhism declined and fell into crisis; then it has contributed to reassess the policies of the Nguyen dynasty in general and of the Emperor Minh Mang in particular towards Buddhism. At the same time, the article also points out particular characteristics confirming the positive aspects of Buddhism in the reign of Emperor Minh Mang; contributing to clarify the important role of Buddhism not only in the past but also in the cause of building and defending the country today.

2. Pagoda construction and renovation

Emperor Minh Mang was the second emperor of the Nguyen dynasty and the fourth son of Emperor Gia Long, the founder of the Nguyen dynasty in the early 19th century (1802). Assessing Emperor Minh Mang, author Nguyen Minh Tuong stated, "Minh Mang was very aware of his national responsibility. The highlight of Minh Mang's personality is his intelligence, deep understanding of politics, and assertiveness. Nineteenth-century historians considered him as "King Le Thanh Tong" of the Nguyen dynasty" [1]. Y.X. Dong (2008) [2] also remarked, "Minh Mang was an elegant, profound, and talented emperor". These remarks are entirely valid, as Vietnam was one of the most powerful countries in Southeast Asia under his reign.

As for Buddhism, Emperor Minh Mang once made his perspective clear: "The Buddha uses God to teach life, while Confucius teaches morality as a daily necessity; both of them teach people to do good deeds. People born in heaven and earth should do good and avoid evil. As for Buddhism, it teaches people through the doctrine of karma, and that people should not be superstitious. The Buddha advises us to do good, because even if a saint is reborn, it cannot be changed" [3]. With this positive view, Minh Mang paid much attention to Buddhism during his reign. While Emperor Gia Long restricted and controlled the construction and renovation of Buddhist pagodas with strict regulations, such as: "All temples, pagodas, and institutes, except those already built, are not allowed to be renovated or rebuilt. Anyone who goes against this law shall be punished with 100 sticks…" [4], his successor, Emperor Minh Mang, was very proactive in developing Buddhist facilities. During his more than 20 years of reign, Emperor Minh Mang built and repaired dozens of ancient pagodas and provided financial support to localities to repair pagodas throughout the country. For the ancient pagodas with imprints from previous emperors or those built by the royal Nguyen dynasty, Minh Mang himself restored and embellished them, because, as he stated: "As for famous landscapes, we are not allowed to let them ruin but must preserve all traces for future generations. Most of the landscapes here were created by our ancestors for the Royal court and for the people. The creation is aimed at encouraging people to cultivate the mind of goodness and to create merit" [5]. With this in mind, he restored Thien Ton Pagoda (Quang Tri), Ngu Hanh Son Mountains (Da Nang), built Long Phuoc Pagoda (Quang Tri), Thanh Duyen Pagoda (Hue), Giac Hoang Pagoda (Hue), Vinh An Pagoda (Quang Nam), and Khai Tuong Pagoda (Gia Dinh).

Some of the pagodas in the villages under the patronage of the Royal family fell into disrepair. The Royal court allowed local people to undertake repairs themselves, with contributions from Buddhists and other supporters in the village. The emperor also provided some financial support. For example, when renovating Kinh Thien Pagoda in Quang Binh, which was originally built by Emperor Gia Long[1], "people asked the soldiers in the village to join forces to repair, the emperor approved and gave 100 ounces of silver" [3]; or Phuc Hai Pagoda in Hai Chau commune, Hoa Vang district (now in Da Nang city), last year it was restored, in 1825 the emperor offered 100 money to repair it and gave it a Royal marking "Phuc Hai Pagoda awarded by Monarch's Decree" [6]. The restoration and construction of ancient pagodas were directly overseen by agencies of the Royal court, primarily the Ministry of Rites and the Ministry of Public Works. Records of the restoration efforts at the ancient pagodas on Ngu Hanh Son (Marble Mountains), Long Phuoc Pagoda (Quang Tri), and Thien Mu Pagoda show that the ministries had to submit detailed plans - including the workforce, materials, construction costs, and ceremonial arrangements - to the emperor for review and approval. This process is clearly documented in original records related to the restoration at Ngu Hanh Son Mountains (Quang Nam), including the pagodas of Tam Thai, Ung Chan, and Tu Lam. "Tam Thai Mountain in Quang Nam has many famous landscapes, after the war, the mountain has been greatly damaged, it is necessary to renovate its pagodas in order to spread the good work. Now, assign the Senior Assistant of Ministry of Public Works Nguyen Cong Lieu and Bureau Director of Imperial Work Manufacturing Department Vuong Hung Van to take care of the renovation and donate three thousand quan from Quang Nam Treasury along with the amount of three hundred taels of silver granted by the Queen for the restoration" [7].

[1]That is Lord Nguyen Hoang.

By personally sponsoring the monastic restoration activities, he paved the way for the Royal family, mandarins, and the public to participate in these restoration efforts. As a result, during the reign of Minh Mang, pagodas grew rapidly, with many ancient pagodas of cultural and historical value being restored and preserved, thus avoiding the risk of disappearance due to the adverse effects of time, climate, and human activity. Many pagodas, built by the Royal court on a grand and spacious scale, have become beautiful landmarks that enhance the scenic beauty of Vietnam's rivers.

By Emperor Minh Mang's reign, the southward expansion had largely been completed, yet risks of regional and ethnic divisions remained. The regions had been unified territorially but not yet culturally, especially in newly annexed areas such as the South Central and Southern regions of Vietnam. To strengthen central authority in distant areas like the Southern Central region and to assimilate ethnic minorities such as the Cham and Khmer, Emperor Minh Mang rigorously pursued assimilation policies through various measures. Building on the Nguyen Lords' policy of "living by Confucianism while admiring Buddhism", Emperor Minh Mang continued to use Mahayana Buddhism as a means to harmonise the indigenous religions and beliefs of the Cham and Khmer people. As noted by scholar Li Tana, "Mahayana Buddhism provided a solution that met the needs of the Nguyen. On the one hand, it bolstered Vietnamese national identity; on the other hand, it eased the anxieties of settlers without challenging the legitimacy of the rulers. Mahayana Buddhism, with its numerous deities, was thus not unfamiliar to the Cham people" [8]. During his reign, Emperor Minh Mang ordered the construction and renovation of numerous pagodas in the Southern region. Notably, in 1836, he instructed officials in Gia Dinh province to rebuild the Khai Tuong Pagoda [3], and by 1839, a large-scale Buddhist ceremony was held there. During this period, the Cham and Khmer were the predominant ethnic groups in the Southern region, both deeply devoted to Buddhism. However, unlike the Vietnamese, they followed Theravada Buddhism, which Indian Buddhism directly influenced.

To further integrate the spiritual life of the Southern ethnic communities into Vietnamese culture, Emperor Minh Mang facilitated the spread of Mahayana Buddhism and Vietnamese-style pagodas into the region. This approach often involved building Vietnamese pagodas on the former grounds of Cham or Khmer temples. Such practices were common during the Nguyen Lords' era: "In establishing pagodas, the Vietnamese selected sites they deemed suitable, often incorporating geomancy and feng shui principles. And, in that choice, the Vietnamese adopted many places that were originally Cham worship places to build pagodas" [9]. Historian Le Ba Vuong also stated: "None of the Nguyen Lords forced indigenous people to convert. Dozens of Cham and Khmer towers and temples remained as revered worship sites. In some places, new Vietnamese pagodas were erected on the foundations of native towers" [10]. Although we have not found many cases from Minh Mang's time that follow this pattern, Choi Byung Wood's account of the disappearance of a Khmer village and its Ba Ket Pagoda, replaced by a Vietnamese pagoda at the same site, indicates that this practice of constructing Vietnamese pagodas on Khmer temple grounds persisted. Vietnamese monks also gradually replaced Khmer monks in these areas [11].

3. Organising Buddhism rituals

Organising Buddhist rituals was a regular practice in monasteries. For village pagodas, Buddhist ceremonies were organised by monks and monasteries in their own ways. However, for national pagoda, the Royal court provided adequate funding, ceremonial items, and necessities for organising rituals. The Nguyen dynasty kept very detailed records of the amounts, weights, and types of gifts and necessities provided to the pagodas. For some national pagodas located far from the capital, the Royal court allocated part of the village's public land for pagoda worship, exempted it from taxes, and granted it to the pagoda or local villagers for management. In the fifth year of Minh Mang's reign (1824), Phuc Long Pagoda in Quang Tri province - an important pagoda dedicated to Emperor Gia Long - was supported by the three wards of An Dinh, An Huong and Phuong Xuan.

At the local level, the pagoda was renovated, and 67 hectares of public land from these three wards were allocated, exempted from taxes, and designated for the cost of incense. This land was handed over to these three wards for the perpetual service of worship. "In the 18th year, the emperor approved the proposal: 20 mẫu (unit of measurement) of public land at Khai Tuong Pagoda is exempt from the tax and granted the abbot of that pagoda as Nguyen Chinh Truc to plow, collect the yields and expenses of the rituals" [4].

The national pagoda served as a national centre for the spread of Buddhism. Therefore, under Emperor Minh Mang's reign, support for these pagodas reflected both the recognition of and commitment to Buddhism's role in the religious life of the nation. Moreover, most national pagodas were located in the imperial capital of Hue, where a large number of people were devoted to Buddhism. Supporting the national pagoda was thus also a way to care for the spiritual well-being of the people. This allowed the Royal court to win the people's hearts, build their trust and support, and contribute to the country's stability.

In addition to providing attentive support for daily rituals at public pagodas, the Royal court directly organised several major Buddhist ceremonies, including large-scale gatherings and sacrificial ceremonies[2]. During his reign, Emperor Minh Mang organised sacrifice ceremonies at the pagodas more than ten times. With this ritual, Emperor Minh Mang desired to "pray for the souls of the officials and soldiers who died for the country" [3]; "pray for the souls of the deceased near and far bodies"; "pray for healthy people, prosperous things, peaceful river waves and good rice to satisfy my wish for the blessing of the people" [3], or just to show mercy to the emperor's officials, "set a vegetarian worship for the souls of the underworld, it's just to show that the emperor respect his officials" [3].

Although it was a Buddhist ritual, the Trai Dan was organised by the Royal court, so during this ceremony, most of the Royal family, mandarins, and the emperor attended and performed the ceremony. On the occasion of the 16th lunar year celebration of Emperor Minh Mang (1835), the emperor directly participated in the ceremony: "When it was the time to set up the vegetarian altar, (Emperor Minh Mang) ordered the Ministry of Administration and Ministry of Military Affairs to assign the mission. Civil mandarins included Overseer and Official Clerk, while military mandarins included Lieutenant. A total of several dozen people took turns to the vegetarian altar and perform the ceremony. The emperor came to Thien Mu Pagoda to worship the generals, he poured wine himself and granted to the guards to perform the ceremony ..." [3].

Although it was still conducted in the pagoda in accordance with Buddhist rituals, all the preparation, arrangement, and organisation of these rituals were directly performed by the imperial agencies. The original documents of "Chau ban Trieu Nguyen" recorded the Trai Dan ceremony, clearly indicating the roles and tasks of each agency in organising this ceremony. In the 16th year of Minh Mang's reign (1835), to organise the Trai Dan ceremony at Thien Mu Pagoda on the Mid-Autumn Festival day, Emperor Minh Mang ordered the tasks of each ministry to be assigned very closely. The history recorded that "on the Mid-Autumn Festival, a vegetarian altar was placed at Thien Mu Pagoda ... Field Marshal Bui Cong Huyen and Judge of Ministry of Public Works Nguyen Duc Trinh were dispatched to take charge of such mission. Also, a round-collar imperial guard and a steward of imperial guardsmen were dispatched to military group, while bureau directors and deputy bureau directors of all 6 ministries were dispatched to civil group, with one official for each ministry, taking turns to work together" [4].

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[2]Trai Dan chan te is a practical offering ceremony for the dead without anyone worshiping and praying for those who died unjustly (such as deaths from wars, accidents, natural disasters ...) to be freed. The workshop is practiced on the basis of a work called "Thi Chu Nga Quy Am Thuc Cap Thuy Phap" (Giving Food and Water to Hungry Ghosts), which is translated in the 8th Century. Dai Viet su ky toan thu (Complete Annals of Dai Viet) states that Trai Dan chan te began to be prevalent in Dai Viet in 1302 by a Northern Taoist named Xu Zong Dao. From here on, almost every dynasty has organised Trai Dan chan te.

Although the Trai Dan ceremonies organised by Emperor Minh Mang were intended to pray for all sentient beings and for the souls of the unclaimed and unremembered, the primary focus was on the emperor's own audience. For Emperor Minh Mang, this ritual was dedicated to the generals and soldiers of the imperial army who had died fighting for the country and for the inheritance of the Nguyen family. It was Minh Mang himself who, for many years, organised the Trai Dan ceremony to express his gratitude to these individuals. For example, during the Trai Dan in 1830, the emperor made it clear that the purpose was to worship "the dead soldiers and all the unknown ghosts" [3]; the Trai Dan ceremony in 1835 was prayed for "our army who died because of the country" [3]. The Trai Dan ceremony was a way of showing mercy and expressing gratitude for the sacrifices of military officials and soldiers, while also helping to alleviate the pain and suffering of the living. Thereby, the ceremony partly demonstrated the heart for the people and the country of Emperor Minh Mang, as well as the humanity in his way of ruling the country.

4. Management of monks

Monks played a vital role in the spread and development of Buddhism. Therefore, in addition to offering hospitality, Emperor Minh Mang paid close attention to managing the monastic community by providing guidance and conducting examinations for monks and nuns at pagodas, as well as by promoting ethical standards and a disciplined lifestyle.

As in previous periods, during Emperor Minh Mang's reign, licensing remained the primary tool used by the state to manage the monastic community. "Hoang Viet luat le" (Hoang Viet Law) stipulated that "If a monk is not granted the imperial ordination certificate but shaves his hair by himself, he shall be punished with 100 sticks. If he commits such act due to a patriarch, the patriarch must be punished. If he is instructed to commit such act by an abbot of pagoda or his private teacher, they will be punished with the same crime, forced to return to secular life, and recorded in the book of current offenders" [12]. However, during this time, the Royal court did not organise official tests for monks. Under Emperor Minh Mang's reign, the previous laws continued to be enforced. Monks and nuns who wanted to receive a license had to travel to the capital, where they were tested and recognised by the Ministry of Rites as true monks, upholding the precepts and knowledge of Buddhism. They were also exempt from taxes and labour. However, if a monk failed to maintain his precepts, the government would confiscate his license and force him to return to secular life. The license issued by the Ministry of Rites to Toan Duc - Hoang Tong (1779-1843) clearly stated: "Considering Quang Nam province, Dien Ban prefecture, Dien Phuoc district, Thanh Ha commune, Van Duc Pagoda, the monk Doan Van Thu write Buddha theories very well, the precepts are carefully and considerately preserved, all things are complete. The license was given. In accordance with the old order, he will go back to the abbot of the pagoda ... and exempted from all tax and army duty. If the recipient who received the license did not escape from the secular life, or he did evils and went against morality, or he was unruly with the local law, he would be punished and return back to the secular life, and the license would be delivered to be destroyed" [13].

During his 20-year reign, Emperor Minh Mang held only three monks' examinations, in 1830, 1835, and 1840. As a result, the number of monks who received official recognition was relatively modest compared to the actual number of monks. This indicated that the rules of renunciation and the licensing system under the Hoang Viet luat le (Hoang Viet Law) were not fully implemented. The Ministry of Rites conducted the monks' examinations in a Confucian literary style, meaning only those who could express themselves in a scholarly manner were recognised as true spiritual practitioners. Others, no matter how devout, would not be acknowledged if they could not express themselves in this manner. Religious beliefs and knowledge of Buddhism in literary and formal language were also not recognised. Nonetheless, this system demonstrated Minh Mang's efforts to manage the monastic community. The examination of knowledge allowed for the identification of talented monks who could effectively practice their religion, while simultaneously eliminating uneducated or ill-prepared practitioners from the pagodas. This was a necessary measure that brought many positive effects to Buddhist activities during that time.

According to Vietnamese Buddhist tradition, decisions regarding monks at pagodas were mostly made by the monks themselves or the abbot. However, under the reign of Emperor Minh Mang, the Royal court directly carried out the rotation and appointment of monks at several large pagodas. Many monks from pagodas in the South were invited by the Royal court to become monks or abbots of the ancient pagodas in Hue[3]. Usually, the head of the pagoda is the abbot, but since the time of Emperor Minh Mang, in some cases, the new Superintendent Monk became the highest dignitary[4]. The Superintendent Monk was essentially a form of Royal court recognition to honour a number of reputable and virtuous monks, thereby setting good examples and encouraging other monks to motivate the process of their practice. The following example only partly reflects this: "Again there a directive: the abbot of Long Quang Pagoda is Nguyen Van Thuong, ordained from a young age whose precepts were kept well, are prepared for the granting of a religious certificate" [14]. The Superintendent Monk was responsible for managing the monks, organising Buddhist activities, performing ceremonies, and preaching to the emperor and the royal family. In all national pagodas, decisions were made by the government. However, the Superintendent Monk as well as other monks, no matter how talented they were, were not indispensable in the Royal court. Their talent was limited to the pagoda, with the main task being to take care of spiritual life for believers. For a monarchy, a centralised bureaucratic state based on Confucian ideology like the Minh Mang dynasty, the withdrawal of monks from politics was understandable.

Not only concerned about the personnel issues of the monasteries, Emperor Minh Mang also paid great attention to the ethics and lifestyle of Buddhist monks. The Nguyen dynasty's laws stipulated that "only use rough silk and cloth, silk was used as smooth, beautiful, embroidered flowers. Whoever violated the order would be fine of 50 lashes, forced to remove the Buddhism and return to the secular life. Buddhist cassock - the religious costume was not in this law" [12]; "The monk who got married would be punished of 80 lashes and returned to the secular life ..." [12]; "Whoever monk who violated the law of prostitution, would be punished hundred cadets and returned to the secular life ..." [12]. These regulations clearly showed the requirements of the Nguyen dynasty in general and Emperor Minh Mang's dynasty in particular for monks. Not only must they understand Buddhism, but they must also be virtuous people, leading a pure lifestyle in a simple way and willing to give up worldly desires to set an example for people, thereby inspiring them to embrace religion and spiritual life.

From the above works, it is clear that Emperor Minh Mang's desire was to control Buddhism through the management of the monks. This was not only implemented during Minh Mang's reign, but almost all ruling classes wanted to control religion, especially Buddhism. The difference was that Minh Mang's method was more flexible and effective. There was no strict ban, but by mastering the monks - the soul of Buddhism - he fully managed and governed the religion in a way that benefited the rule of the country without encountering opposition or protest. The monks and nuns who received the royal mandate, enjoyed the royal court's graces and ordination certificates, certainly not only served the dharma but also became government officials, serving effectively for the benefit of the royalty. Many people thought that the strict management of monks and the control of Buddhism was a measure to limit the development of this religion. But in our opinion, this practice did not restrain Buddhism; on the contrary, it strengthened it. It was the administration of the royal court that helped restore an organised team of monks, raise the level of

[3]Master Monk Te Chanh - Bon Giac, the abbot of Tu An Pagoda (Ho Chi Minh city), was summoned by Emperor Minh Mang to the Imperial Capital (Hue) to become Superintendent Monk of Thien Mu Pagoda; Tien Giac - Hai Tinh - a monk from Tu An Pagoda (Ho Chi Minh city) was appointed to be the abbot of Thien Mu Pagoda in place of Mr. Mat Hoang.

[4]Monk Tien Giac - Hai Tinh (Thien Mu Pagoda, Hue), Te Chanh - Bon Giac (Thien Mu Pagoda, Hue), Tanh Thien - Nhat Dinh (Linh Huu Quan, Giac Hoang Pagoda, Hue), and Giac Ngo - Tanh Thong (Bat Nha Pagoda, Phu Yen) ... was appointed by Emperor Minh Mang as the Superintendent Monk of the national pagoda.

Buddhism and virtue, and restrict those who escaped from the hard labour and took advantage of the meditation door as a place to oppose the Royal court, contributing to bringing Buddhist activities into order. It was a useful practice for Buddhism that helped the religion grow stronger.

5. Conclusions

For Vietnam, Buddhism is not only a religion but also an important element of traditional Vietnamese culture. Along with the history of the nation, this religion has also greatly contributed to the cause of national defence and construction. Therefore, for Minh Mang, Buddhist development was a good measure for building and consolidating the emperorship, a form of winning people's hearts. It not only contributed to satisfying the religious beliefs of the masses in a way that benefited the monarchical government, but before the introduction and expansion of Western culture and religion, it was also a way to arm the people with "spiritual weapons" to protect against the risk of external cultural invasion.

In consolidating sovereignty and unifying newly annexed southern territories, Buddhists supported the Vietnamese court's efforts to assimilate the spiritual life of the Cham and Khmer communities in the southern region. Through these efforts, the central government strengthened its oversight of local religious practices, promoting social stability. Furthermore, Buddhism facilitated cultural cohesion and harmony among Vietnamese, Cham, and Khmer people. Through these efforts, the aim was to achieve cultural unity in line with the broader national unification of the time. Despite providing many favourable conditions for development, Emperor Minh Mang did not allow Buddhism to fully operate or develop spontaneously. Instead, he always tried to manage, regulate, and sometimes strongly intervene with tough measures. Although Emperor Minh Mang showed sympathy toward Buddhism, he was still a sincere Confucian scholar, whose mission was to protect the unique position of Confucianism. He could not allow Buddhism to develop freely, as excessive development threatened the status of Confucianism. Moreover, in the context of the country, having recently emerged from war, Buddhism itself had been weakened and degraded by years of turmoil and division. Therefore, the government had to strengthen its management to stabilise social order and help Buddhist activities become more orderly, thereby contributing to the creation of a healthy religious environment.

Although he advocated the exclusiveness of Confucianism, Emperor Minh Mang did not strictly prohibit Buddhism and even facilitated its development. This showed that the emperor did not wish to maintain the same three religions as the Ly - Tran dynasties in Vietnam, nor did he want to restrict Buddhism like the Le dynasty. Instead, he chose to follow the direction of the Nguyen Lords, which combined the ideas of Confucianism and Buddhism in governing the country, in the manner of "living by Confucianism while admiring Buddhism". He skilfully attracted Buddhism to Confucianism, viewing it as a complementary thought to Confucianism and for "royalising". In the process of expanding, unifying, and consolidating sovereignty over the southern territories, Buddhism primarily served as a catalyst - a tool to initially stabilise society, unify public sentiment, and harmonise the cultures of different ethnic communities. However, it was not regarded as a fundamental ideological tool like Confucianism, which the Nguyen dynasty had established as the official ideology of the nation. This demonstrated the inheritance and creativity in Minh Mang's approach to Buddhism. Despite the differences, Buddhism during Minh Mang's reign continued to inherit and demonstrate its role in the political and cultural life of the 19th century. It became an important factor in helping the Royal court win the people's hearts, harmonise social conflicts, consolidate the monarchy, stabilise the country, and foster good qualities. It also satisfied the spiritual beliefs of the people, created special cultural values, and contributed to the development of contemporary culture and art.

Studying Emperor Minh Mang's policies towards Buddhism provides valuable lessons that can be applied to contemporary religious life and management. These include: 1) strengthening state oversight in the activities and organisation of this religion, 2) focusing on the development of Buddhist teachings and enhancing Buddhist studies for monks and followers, and 3) preserving and restoring Buddhist cultural heritage.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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Colonial rhetorics of modernity in Vietnam: "The New" (Cái mới) in Vietnamese literature during the colonial period

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Abstract:

Much of colonial discourse relied polemically on the rhetoric of colonial modernity; meanwhile, behind the discursive and practical power of modernity is colonial exploitation. It asks how notions of the new novel, the new woman, and foreigners reflected and influenced Vietnamese intellectuals' imagination about the Vietnamese nation and Vietnamese literature. In other words, the concepts of new women, new literature, or foreigners, based on the historicist view of humans and literature, helped to mask colonialism in the discourse of modernity, making it appear desirable and reasonable. This article argues that the participation of theorists, writers, critics, and journalists in metropolitan countries and colonies in articulating modernity went beyond its attached colonialist purpose to think and act for the "real" development of Vietnam intellectually, economically, and politically. This was meant to construct a national culture. As such, this article engages with a deconstructing approach, emphasising the historically specific context of colonial dependence in colonial Vietnam.

Keywords: **"Cái mới", colonial modernity, new novel, new women, rhetorics of modernity.**

Classification numbers: **9.2, 10**

1. Introduction

Behind the discursive and practical power of modernity is colonial exploitation. The other was transformed economically and culturally to serve industrial capitalism [1-3]. Colonies became centres of production for metropolitans and consumers of metropolitan goods [4, 5]. Colonialism, in the guise of the discursive essentiality of modernity, became the object of the colonised's desire: "They *desire* to follow us" (emphasis added). Becoming modern/new - taking Western economies, cultures, technologies, and politics as idealised developments - became the internal motivation of native actions, which helped to sustain colonialism, even until the postcolonial era. In the context of colonial Vietnam, some scholars addressed the similar tendency as "colonial modernity which is in contrast with "real" modernity for native wealth". Colonial modernity, sometimes also referred to "bourgeois trappings and "surface" modernity", refers to the phenomenon of growing fetishisation of material wealth and individualism in new middle-class urban people that masked the exploiting nature of colonialism [6, 7].

As one can see, this article takes the perspective of the unity or the singularity of the influence of French colonialism on modernisation in the fields of production, science, and technology, and on the emergence of modernity in the culture of colonial Vietnam. Nevertheless, this article engages with a deconstructing approach, emphasising the historically specific context of colonial dependence in colonial Vietnam. It acknowledges the complexity and contradictions in the reception of Western modernism and modernity in colonial Vietnam that other scholars

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about colonial Vietnam have pointed out. They have narrated the story of the colonial encounter in Vietnam in a subtle way so that it looks neither nationalist nor colonialist. *Indochina: An Ambiguous Colonisation* (1858-1954) by P. Brocheux, et al. (2009) [8] is one example. This research emphasises the "ambiguity" of the colonial experience, the complexity of the colonial encounter, and the diversity of the interactions between colonised and colonisers. C.E. Goscha (2004) [9] also aimed to understand the complex colonial modernity in Vietnam by studying the life and work of Nguyen Van Vinh (1882-1936), an influential Vietnamese intellectual. In this research, the Vietnamese intellectual is described as the one who strategically adopted French cultural and civilising achievements for his project to modernise Vietnam as much as the rest of the modern world. J.R. Merchant (2014) [10] argues that the complexity of power relations in colonial Vietnam arose particularly in the late period. During that time, both the French and the Vietnamese attempted to further their imperatives in cooperation and competition with each other. Merchant emphasised the agency of the Vietnamese in their way of using and shaping the colonial systems in manners that were not totally sanctioned by the French to transform their society.

My research shares such complex views of colonial history in Vietnam by way of delving into Vietnamese intellectuals' visions of an idealised nation through their perceptions of "then-new" literature and "new" people. It is undeniable that the colonial program to modernise Indochina was not less than to transform Indochina into the centre of production and consumption of metropolitan goods, constructing France as "the premier people" [5]. In other words, the desire of Vietnamese intellectuals in their imagination of the modern Vietnamese nation was formed according to the colonial idea of modernity. Specifically, Vietnamese intellectuals' vision of modernised Vietnam was shaped by the colonial program of civilising Indochina. Nevertheless, this article aims to assert that the Vietnamese intellectuals appreciated the cultural and material products that the French colonisation brought with it as possibilities for making Vietnam as modern as the West. As such, this article goes along with Benedict Anderson's statement about "the colonial experience that profoundly shaped nationalism" [11]. This article does not ignore anti-colonial sentiments in images of new literature and new people that are inspired by colonial literary and material models.

2. Methodology

This article applies a historically grounded, deconstructive textual analysis approach that examines how the rhetoric of colonial modernity operated across literary, journalistic, and ideological discourses in early twentieth-century Vietnam. The study analyses a wide corpus of materials, including Vietnamese periodicals (*Nam Phong*, *Phu Nu Tan Van*, *Phong Hoa*, *Ngay Nay*), literary and critical writings by Phan Boi Chau, Phan Khoi, Pham Quynh, Bui Quang Chieu, Nguyen Phan Long, Hoai Thanh - Hoai Chan. It also engages French discourses on the *mission civilisatrice* and *mise en valeur*. Through comparative reading across these materials, the article identifies the ambivalent, hybrid nature of "the new" (cái mới) in Vietnamese intellectual and cultural life under colonial rule.

3. Contents

3.1. New women

"Mise en Valeur", a term that connoted economic developments pursued by capitalist imperial nations as well as the moral and cultural improvement to be shaped in colonies, arose from the French belief in the universal value of its civilisation [12]. The manifestation of the discourse of modernity in colonial Vietnam that helped to justify colonial modernity is not only the economic liberalism but also the cultural liberalism embodied in colonial constructions of the figure of new subjects such as new women, new novels, and foreigners in colonies in the early twentieth century. The participation of this figuration in colonialism is evident in its historicist base: The imaginary about native subjects follows Western measures of individualism, rationality, and social equality - terms used by colonisers to articulate their colonial exploitation. Noticeably, the elite Vietnamese helped to realise and maintain modernist concepts by discursively making the image of new women, new novels, and new foreigners desirable.

The notion of new women referring to female subjects who follow rationality and individualism [4, 13] joined the discriminatory discourse of Western cultural, economic, and political superiority and Eastern inferiority and backwardness. Progressive women are ones, as articulated, who embraced Western lifestyles, ideologies, and materials. In colonial Vietnam, the fabrication of the new women image by colonial scholars and elite natives was based on criticisms of existing habits, lifestyles, and ideas about Vietnamese women typified by backwardness and subordination by men. Bui Quang Chieu and Nguyen Phan Long, while imagining the national female, refer to the superiority of Western women in contrast to the supposedly low-educated Vietnamese women. Q.C. Bui (1929) points out how American and English women are more knowledgeable and have more self-esteem compared to Vietnamese women [14]. The image of an ideal woman, according to Bui Quang Chieu's point of view, is to learn Western values of freedom and equality while still maintaining traditional moral values. The imagination of national identity for women by Bui Quang Chieu seems to challenge the idealised image of traditional Vietnamese women that Pham Quynh was attempting to construct. Pham Quynh appreciated *The Tale of Kieu*, with the female character Thuy Kieu, who is obedient, quiet, miserable, and whose life is filled with melancholy. Supporting this trend, Pham Quynh, reinterprets traditional functions and Confucian morals, which foster the notion of obedience, passiveness to authorities, and fate as characteristics of Vietnamese [15]; and their intellectual and scientific inferiority. This identity is the "metaphysical dimension" created by the colonial French policy of the system of Francophone schools and presses to put down the desire for revolution and the discursive encouragements of individual freedoms in all life aspects [7, 16].

In such a context, Vietnamese intellectuals encouraged a new image of women who are modernised. They asserted that Vietnamese women must be completely emancipated from the feudal traditions of families and societies. Phan Boi Chau defined "feminism" as women's equal participation in social activities [17]. In Phan Boi Chau's conception of women expressed in many works written in the early 20th century, the requirement that women can do anything is to emphasise women's ability to participate in social issues, specifically national revolution [17, 18]. Such anti-colonial, modern views of women challenged the oppressive doctrines of Confucianism concerning the family in which women were expected to obey fathers, husbands, and sons [19]. The prominent associations of French-educated nationalist intellectuals, including *Self-Reliant Literary Group (Tu Luc Van Doan)*, the periodicals *Cultural Renovation (Phong Hoa), Today (Ngay Nay), and New Letter Female* (*Phu Nu Tan Van)* in Saigon evoked the concept of new Vietnamese women. Led by the French-educated intellectual Phan Khoi (1887-1959) in 1924, *Phu Nu Tan Van* called for women's freedom in dressing, make-up, and social activities. There is a series of diaries called "Going to the West" (Sang Tay) published volumetrically in this journal in 1929. There were articles promoting the Western woman models in political sciences: The front page of each volume in 1929 had a long article named "We (Women) are discussing the politics" (Chung toi ban ve thoi su).

These authors joined the colonial discourse of modernity in the sense that it used the traditional/modernity framework - the Western linear point of view of societies - to discursively transform Vietnamese women's practices as the lower level on the ladder of female liberation. Western standards and goals - equal rights in all life aspects - are thereby used to evaluate the cultures and histories of non-Western females. Imagining Vietnamese women as victims of patriarchal society, the coloniser was motivated to set up colonial schools to teach women about their rights. This implied that native women could not develop without the support of colonial education. The French liberal feminist Clotilde Chivas-Baron, in the novel *Madame Hoa's Husbands*, nears its conclusion, let the protagonist declares her intent to use the Frenchman's financial resources to free her Vietnamese sisters from their bondage by establishing an education system [20]. Here, French women are portrayed as the saviours and liberators of Annamese women. The passage echoes the colonial acceptance and silence towards the educational role of Western women. This also reflects the colonial administration's acceptance of the feminist movements pursued by international women [13].

Nevertheless, it was the Vietnamese intellectuals who realised the destructive aspect of modernity that the colonial system brought to its colony. Nguyen Phan Long, deputy leader of the Parti Constitutionnaliste Indochinois, denotes the social and moral danger of Vietnamese women, who are Westernised and leave their domestic position [13]. Nguyen Phan Long's criticism focuses on the way of becoming "new" through imitation without understanding and criticism. Such a way of depending on colonial modernity in articulating the concept of new women is more obvious in depictions of women who are not only those who had a Western education and embraced individualism, demanding all equal rights with men, but also ones whose "sexuality [is] expressed in individualistic ideas, behaviour, and modern forms of consumption" [4].

The other sign of the idealised new women is the new knowledge of hygiene and beauty. Such articulation made Vietnamese women slaves of Western products and technologies. Looking at advertisements in many volumes in 1929 of the *New Letter Female (Phu Nu Tan Van)*, there was the dominance of appealing news about French cosmetics and luxuries. The multi-function of the Paris beauty salon named *Keva* prevailed in each volume. It announced new branches of cleaning milk, lotions, spot-entry medicines, powders, and perfumes. Particularly, the female figure attached to the advertisement looked European: round and big eyes, immaculate white skin, transparent eyes, and fleshy lips and cheeks. This perfect figure was apparently for commercial purposes. Not only French cosmetics but also French wines were published in this journal. The common pattern of the advertisements of products is the emphasis on European origin and European style as the most guarantee of their saleability. For example, look at the post about raincoats of the shop Tang Khanh Long in *Phu Nu Tan Van* (May 24, 1929): "New Arrival - Used in the Rain Season! Ladies and gentlemen, if you do not want a raincoat to keep your shirt clean and look beautiful in the rainy season, please come to my shop, Tang Khanh Long, to choose one: European style" (July 11, 1929). "European style" is the keyword supposed to attract buyers. However, as Henchy in her article "Vietnamese new women and the fashioning of modernity", women's concern for health and beauty are coopted with modernity's commodification and mystification: It is enslaved by the scientific modernity (pharmaceutical potions, medical theories, and technologies) accused of traditional belief and little scientific understanding [13, 22].

Furthermore, modern women/new women ultimately were consumers of Western products, which helped transform Vietnam into a centre of production and consumption as outlined by Albert Sarraut, the Radical deputy and a successful Governor-General of Indochina, the leader of the association theory . In the early 1900s, in France, when colonialist theorists rejected three existing colonialist theories, including domination, autonomy, and assimilation, the theory of association, which aimed at the progression of both the native and the French, took its turn in outlining French policies about Indochina. The use of the term *Mise en valeur*, which connotes the economic, cultural, and moral development of both the French and the natives, became popular in the defence of French colonialism [12]. However, in reality, as S.H. Robert (1963) [23] pointed out, "the standards of assimilation had lost their validity. Assimilation had denied the necessity of colonial individuality, and could not conceive of any justification for development away from a norm - the norm of Paris". "The image of colonial reality", said Sarraut, by 1920, "comes to adapt itself as a necessary complement to that of metropolitan existence" [23]. Colonies were made to become reservoirs of raw materials, emporia for home manufacturers, and the consummation centre of Western goods. The notion of new women that sequenced the growing consumption of European materials and ideologies articulated by elite natives matched the colonial policy of association.

3.2. New literature

In the nineteenth century, “language and national feeling became important factors in European nationalism”. Literature has its “own mission of advertising national commitment” [24]. In such a context, Vietnamese intellectuals must have searched for and fought for a so-called Vietnamese national literature representing Vietnamese identities. The concept of new literature in Vietnam must have carried the intellectuals’ vision of the national literature. The concept of new literature took French literature as the most progressive literature, denying discursively constructed constraints in contents and forms of native literatures. T. Hoai, et al. (2022) [25], explicitly appreciated Europeans, who brought the new poetry/literature to Vietnam, as the mother of once-motherless Vietnamese poets/writers: “Vietnamese youth presently is lonely and desperately looking for his poems like sons are looking for their mother” [25]. Hoai Thanh’s gratitude for the new poetry/literature, which was supposed to allow Vietnamese poets/writers to present their emotions freely, implies that it is the French who allowed and appreciated Vietnamese desires and dreams and that it was the French who made Vietnamese to be themselves” [25].

The articulation of the new prose by Hoai Thanh applies not only to Vietnamese poets but also to all literary writers. In the memory *Doi Cua Toi Ve Van Nghe* [*My Literary Life*] (1957), Ho Bieu Chanh proudly listed twelve novels that he wrote inspired by French novels. In the *Vietnam Literature Review*, volume 10, D. Hoang (2000) [26] appraises Nguyen Trong Quan and Ho Bieu Chanh - the two prominent novelists of Southern Vietnam as the first modern novelists who wrote first modern Vietnamese novels. This author argues that these novels present characteristics of modern novels in French. Similar to Hoang Dung, other scholars argue for Western influences on Ho Bieu Chanh’s novel in different aspects. T.M.L. Nguyen (2024) [27] recently published a thorough comparative study of Ho Bieu Chanh’s Vietnamese works with their French originals.

Prominent genres of postcolonial Vietnamese literature such as novels, short stories, and “new poetry” (non-“six-eight verse” and non-Chinese thematic poetry) - signs of modern literature - did not appear in Vietnam until the French colonial period [28]. French culture and literature that came to Vietnam along with the arrival of French colonialism transferred Vietnamese literature from the epic period to the novel period (Bakhtin) or from the period of “we” to the period of “I” [29, 30]. The latter became the target of Vietnamese literature, particularly since the time of Doi Moi [Renovation]. Or in the words of D.H. Tran (1996) [31], the revolution in New Poetry is associated with the process of liberating the individual ego from the constraints of human status, “functional human in a moral society”. The individual appearing in New Poetry is the person who exists as an ego carrying individual emotions, not as a duty or a social role as seen in medieval Vietnamese literature.

French education and newspapers in the early 20th century brought into view of Vietnamese intellectuals modern literary genres. In Tonkin, *Nam Phong Newspaper* - the most wide-read newspaper - paid much attention to classical French writings that were being taught in French schools in Annam such as Corneille, La Fontaine, Moliere, Voltaire, Auguste, Paul Bourget, Baudelaire, Lamartine, Musset, Hugo, Balzac and Vigny [15, 32, 33]. In Cochinchina, *La Cloche Fêlée*, as far back as 1923, paid considerable attention to contemporary French intellectuals such as Jean Jaurès, Roman Rolland, and André Gide* [32]. The introductions of these authors, who were representatives of the modern movement in European literature (romanticism and realism), brought Vietnamese writers to a new perspective of national literature, which departed from the classic literatures of the feudal time.

T. Son (1933) [34] talked about the development of realistic novels in Vietnam. He acknowledged the

*André Gide was mentioned in 1923 by Nguyen An Ninh. However, only in 1943 was the first Vietnamese translation of Gide’s *La Porte Étroite* issued. The first communication between the translator Pierre Do Dinh (Do Dinh Thach) and Pierre was in 1928.

influences of French literature in the emergence of this novel genre: "[Our novels] have been influenced by French literature, and perhaps it is thanks to that influence that they have evolved further". He particularly called for the author's brevity in writing about contemporary social problems to be different from classical medieval writers, who wrote about universal phenomena harmonising with their mental worlds. "Realist authors do not leave anything unmentioned. They are supposed to describe the "mental world and the material world". They can write about what writers traditionally consider as "trivial and vulgar, not deserving to be mentioned in literature". They are supposed to see the diverse world as materials for literature.

In the domain of poetry, the priority in composing poetry is the freedom to express the subjectivity of the authors, ignoring rules of poetic forms (that ngon bat cu, that ngon tu tuyet) that were once the regulation of feudal examinations of literature [35]. This poetic norm changed in the early 20th century with the introduction of representatives of European romanticism, including Baudelaire, Lamartine, and Roman Rolland, in schools and newspapers in Vietnam [5]. On March 2, 1932, Phan Khoi, the chief editor of *Phu Nu Tan Van* [*New Letter Female*], officially accused the requirement of poetic forms of the feudal regime as the killer of poets' poetic aspirations. Phan Khoi, at the same time, announced the birth of New Poetry, which allowed poets to demonstrate their emotions and thoughts freely without being constrained to any poetic forms [36].

The benefit that the discourse of new literature made for colonial modernism is the fact that new/modern authors are the strongest consumers of Western products. This is evident in Hoai Thanh, Hoai Chan's description of the lifestyles of new/Western-educated intellectuals: "We are staying in Western houses; we are wearing Western hats, Western shoes, and Western shirts. We are using electric things, watches, cars, trains, bicycles, etc., and much more! How can we count sufficiently the material changes that Westerns brought to us?" [25]. The long list of Western items consumed by new intellectuals and the exclamation sentence on the unaccountability of positive changes in material lives in Vietnam allegorises the victory of French colonial modernity in Vietnam.

As such, Vietnamese writers, while learning from Western literature, desire to compete with the dominance of foreign literature in Vietnam and to think about a literature that reflects the Vietnamese (Annam) identity.

3.3. Foreigners

The victory of colonial modernity is more obvious in the colonial notion of foreigners who are largely presented in the image of generous, smart, and reasonable whites/Europeans - desirable images for the future/modernity of Vietnam. This imaginary is concurrent with the discourse of white superiority - the common discourse that was used to justify the Western expansion over the remaining. C.E. Goscha (2004) [9] in the chapter "Mise en valeur: Building Indochina" of her book *France in Indochina: Colonial Encounters* (Oxford: Berg Publisher), reads the idealist image of railway engineers in the novel *La Kilometre 83* as the discourse supporting the colonial policy of building modern Indochina for the benefit of France. In addition to such a conception of foreigners as engineers of modern societies is the imagination of foreigners as masters of cultural and social aspects. The colonial novels such as *Kim* by Kipling and *A Passage to India* by Forster constructed images of whites as good friends and helpers of natives. In the latter, Fielding, a British officer, mobilised other British men and Indians to protest against the judge that is wrongly trying to imprison Aziz, the native Muslim. While Aziz's attitude to Fielding is up and down, Fielding's friendship with Aziz is quiet but durable. The love and hatred of Aziz is always extreme; Fielding is reasonable. The feeling of being sorry for Fielding for his failure to stay friends with Aziz when the novel closes shows Forster's success in demonstrating the lovable image of white men in the colonies: They could function as keepers of social equality and justices for the colonies.

The use of foreign names for two progressive characters in two novels about Indochina in the early

20th century, Chivas-Baron's Ginette in *Madame Hoa's Husbands* and Harry Hervey's *Congai* (1927), demonstrates the power of foreign personality in the discourse of progress and modernity. *Congai* has two native female characters: One is named Thi Linh, and the other is named Nanette. Two mixed-race female characters in the novel *Madame Hoa's Husbands* are named Hoa and Ginette. While two females with Vietnamese names accepted the stigma discourse about congaies and Eurasians, the two others with French names were depicted as hardened, realistic, outspoken people who voiced critique about liberation and independence. Both of them become so-called rebels, refusing to be submissive and declaring their self-interest. Allegorically, the two novels show that only foreigners/French/Europeans are pioneers in revolutionary ideas and activities; without their guidance, the natives cannot progress, even if they cannot realise anti-colonial activities.

In the field of literary criticism, native critics appreciated their colonial scholars/teachers as guides in their thoughts and careers. Nguyen Van Hai, on the first page of his book about R. Tagore *Thi Hao Tagore - Nha Dai Bieu Van Hoa Phuong Dong*, stated that this book is in honour of "Prof. Nguyen Luong Khiet", who lent him many rare documents brought back from France. In the introduction, he expressed his gratitude to foreign teachers for motivating the love for Tagore among "us":

"We are mostly rationalists, so it is very difficult for us to master Tagore's ideologies. The reason why we could love Tagore - it is not a guarantee that we could comprehend him - is due to teachings by foreign teachers. Most of them are English and French. I am especially grateful for the Indian scholar Sushil Chandra Mitter, a professor of Ripon College in Calcutta, who explained [Tagore] to us. Now I want to bring what I learned [from these teachers] to my dear readers... Because Tagore has a lot of writings in Bengali... this book mostly uses translations by Prof. Mitter. The book editing Tagore's works, *La Pensée de Rabindranath Tagore* (Préface de Sylvain Lévi; Paris: Adrien-Maisonneuve, 1930), is the best resource for us as a base for writing this book" [28].

The passage so enthusiastically affirms the role of Western scholars as those who reformed the way of appreciating poetry in particularly and way of thinking in general of Vietnamese authors. Accordingly, to understand Tagore's poetry, the reader needs to use intuition and feeling rather than the knowledge of literary analysis or logical argument. Nguyen Van Hai quoted the French book as the origin of his newly published book as though it does not develop any new point. The Vietnamese scholar appears very proud to be just a follower of the scholar of French knowledge. The foreign names that fill the passage aim to impress and convince the reader of the French knowledge foreground of the book's contents. It is explicit that Vietnamese intellectuals like Nguyen Van Hai and Ho Bieu Chanh acknowledged the role of colonial scholars/intellectuals in helping them make sense of their world. Such acknowledgment must have been conformed to the contemporary rise of consumption of Western knowledge and material products for social mobility. The consumption of "all things Western" was seen as the marker of a civility or modernity level while also helping the Vietnamese intellectuals self-promote and aggrandise against their French peers in the colonial system [5, 11].

From the postcolonial critic's view, apparently vindicated the superiority of white knowledge and intelligence - the common discourse to justify European colonialism. However, from the postcolonial view proposed by E. Boehmer (2006) [37], we can see some anti-colonial mentality, either subtle or explicit, in the Vietnamese intellectuals' acknowledgment of the Western masters and models. Postcolonial criticism is an approach to literature, history, politics, and culture that focuses on the confrontation between the West and the non-West that is implicit in the discourses of these fields. Postcolonial criticism focuses on responses to colonial oppression. These responses can be explicit in the denial of and resistance to colonial power, or they can be subtle, secretive, devious, and hidden in their resistance [4]. In a way of excitingly learning Western models in lifestyle, and way of thinking or in general, intellectuality, Vietnamese writers must have thought of a modern Vietnamese nation. That idealised Vietnamese nation is potentially comparable to the supposedly superior Western world, so colonial Vietnam was no longer the subject of the so-called civilising mission.

4. Conclusions

In general, the concepts of new women, new literature, or foreigners, based on the historicist view of humans and literature, helped to mask colonialism in the discourse of modernity, thus making it desirable and reasonable [37]. Nevertheless, as presented, the Vietnamese theorists, writers, critics, and journalists in Vietnam did not pursue the colonial modernity as the passive consumer but evoke "a world of transgression and transition, becoming an icon of modernism's complexities" [13]. Specifically, Vietnamese intellectuals went beyond its attached colonialist purposes to think and act for the "real" development of Vietnam intellectually, economically, and politically, which meant to construct a national culture. As such, this article engages with a deconstructing approach, emphasising the historically specific context of colonial dependence in colonial Vietnam.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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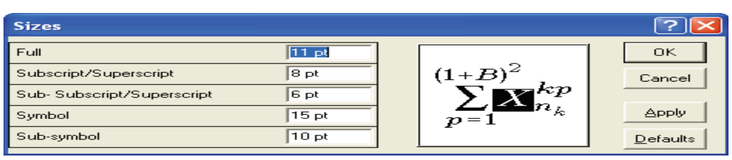

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