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Editor's Note



The JCSH, succeeding The Rangsit Journal of Social Science and Humanity (RJSH), continues to focus on publishing research works of various contemporary issues in social sciences and humanities. In this issue, we are very pleased to present eight (8) research articles from various academic disciplines.

In the first article, Patteera Pantaratorn, Jittasak Putjorn and Wongladda Weerapaiboon studied the barriers to low carbon tourism development in Thailand, focusing on the supply side. By using both qualitative and quantitative research methods, the authors concluded that the barriers to low carbon tourism development are structure constraints (such as inadequate budgets and inadequate tourism facilities), intrapersonal constraints (such as deficiency in knowledge and inadequate awareness), and interpersonal constraints (such as inadequate coordination and cooperation).

Next, Thanaphon Boonyaratanakornkit and Nutthathirataa Withitwinyuchon evaluated qualitatively the effectiveness and efficiency of the Let's Go Halves Program, an economic stimulus measure of the Thai government. The authors found that this program was effective and efficient in stimulating the economy and assisting those affected by the COVID-19 outbreak in 2020-2021, despite challenges with program accessibility, technical compatibility, inequity in program participation, and program transparency.

In the third article, Wenwen Sun and Zheyun Zheng analyzed quantitatively emotional regulation, empathy and moral disengagement of juvenile delinquents in Hebei, China. The authors found that the levels of their emotional regulation and empathy were at the lower middle level, and moral disengagement were at the upper middle level. Their emotional regulation had a significant negative relationship with their moral disengagement.

In the fourth article, Min Layi Chan and Sasiphattra Siriawato examined qualitatively the advantages and disadvantages of Myanmar's monolingual education policy, specifically with banning the teaching in ethnic languages. The authors concluded that this policy could not be an effective language education policy for Myanmar, and recommended Mother Tongue-Based Multilingual Education (MTB-MLE) system as an alternative.

In the fifth article, Mongkolchai Tiansoodeenon, Benjawan Rungruangsuparat, and Sarochrus Tarapond used mixed-method research to study the needs and problems with regard to English communicative competencies in the Thai hospitality industry (i.e., hotel, tourism, and aviation). The authors found that interactional competency was the most significant communicative competency in these three industries. In addition, strategic competency was essential for the hotel and aviation industries.

In the sixth article, Supiya Punyathong and Prapatpong Upala studied the key variables and physical relationships that cause fire risk areas surrounding the market in Chiang Mai, and analyzed risk prioritization in the areas and the classes of risk for the fire risk management. The research findings were presented for risk management planning in the next phase.

In the seventh article, Sandy Rismantojo, Veerawat Sirivesmas, and Eakachat Joneurairatana examined qualitatively the factors behind the popularity of Batik 3 Negeri by the Tjoa family. The authors concluded that the Batik 3 Negeri by the Tjoa family became well-known by the Sundanese in Priangan, West Java, because of the motif's beauty, complexity, high production quality, and representing a high social class's taste and lifestyle for the Sundanese.

Last but not least, Yan Xu, Watanapun Krutasaen, and Gomesh Karnchanapayap studied qualitatively the clothing culture in Wumesiben Mama, a Manchu epic book. The authors pointed out that the clothing of the ancient Donghai Nuzhen people (in Northeast China) displayed their lifestyle, living standards, ideology, and aesthetic notions.

We always welcome your manuscripts and appreciate your comments. Links to our manuscript submission site can be found at JCSH Online Submission and Review System: www.rsu.ac.th/rjsh. We look forward to hearing from you and would like to express our thankfulness in advance.

A handwritten signature in blue ink, reading "Thamavit Teichadonham". The signature is written in a cursive style with a horizontal line underneath.

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Exploring Barriers to Low Carbon Tourism Development in Thailand: A Supply-Side Perspective

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Abstract

The research aims to achieve the following objectives: (1) To explore the barriers hindering the development of low carbon tourism in Thailand and (2) To conduct Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) on the identified barriers of low carbon tourism development in Thailand. The study adopts a mixed methods approach, combining qualitative and quantitative techniques. Data collection involved conducting in-depth interviews with 17 key informants involved in the supply-side of tourism. The data was analyzed using Nvivo 20 software, and the findings were utilized to develop a questionnaire. The questionnaire was then administered to 224 individuals engaged in the supply-side of tourism to assess their opinions. The collected data underwent EFA and CFA for further analysis. The research findings revealed three dimensions of barriers to low carbon tourism development in Thailand: Structure Constraints, Intrapersonal Constraints, and Interpersonal Constraints. These results provide insights into the specific barriers inhibiting the development of low carbon tourism in Thailand and can guide policymakers, industry stakeholders, and researchers in formulating strategies to overcome these obstacles.

Keywords: *low carbon tourism; barriers of low carbon tourism; low carbon tourism development; barrier of low carbon tourism development; low carbon tourism in Thailand; supply-side of low carbon tourism*

1. Introduction

Based on research conducted by scientists worldwide, it has been established that the future climate is expected to undergo distinct changes compared to the past and present climate. Consequently, we will inevitably confront the repercussions of climate change. It is widely acknowledged that resolving the issue of climate change in the near future (within the next 30-50 years) is unlikely. The United Nations Intergovernmental Panel on Climate Change emphasizes that the primary cause of global warming is the release of carbon dioxide (CO₂), with human activities accounting for over 90% of these emissions. Thailand, in particular, is exposed to climate change risks that could have diverse impacts on both the nation's tourism industry and its overall well-being. Given this context, it is imperative to earnestly evaluate the situation and devise strategies to mitigate these impacts. As stated by Cabrini Luigi, Murray Simpson, and Daniel Scott (2009), approximately 5% of carbon dioxide emissions stem from the tourism industry, with transportation alone contributing to roughly 75% of these emissions. Moreover, the extensive energy consumption in the accommodation sector has also played a significant role in exacerbating climate change (United Nations, 2017).

According to the extensive literature review, it becomes evident that climate change has emerged as a pressing concern globally. Moreover, the tourism sector, being an energy-intensive industry with significant carbon emissions, is deeply entangled with environmental challenges. Notably, the behavioral patterns of tourists have witnessed a noticeable shift since 2021, following the outbreak of the COVID-19 virus. Tourists have increasingly demonstrated a heightened awareness and conscientiousness towards environmental matters. Hence, the imperative arises for tourism to embrace an ethos of environmental sustainability while also ensuring social and economic viability. Consequently, nations across the globe must seek pathways to

foster sustainable tourism practices that align with these principles. One proposed approach to curbing carbon dioxide emissions within the tourism domain is the concept of "Low-carbon tourism". Low-carbon tourism, also known as low-carbon travel or green tourism, is a sustainable form of tourism that aims to minimize carbon dioxide (CO₂) emissions and overall environmental impact throughout the entire tourism lifecycle (UNWTO, 2018). This alternative form of tourism has garnered substantial interest from numerous countries, including Thailand. Nevertheless, a significant number of destinations remain oblivious to the importance of cultivating low-carbon tourism. Furthermore, in many developing nations, the concept of low-carbon tourism has not been adequately translated, impeding its widespread implementation, and introducing potential obstacles. Notably, economic, social, and physical barriers pose substantial challenges to the realization of low-carbon tourism. Hence, a comprehensive examination of these barriers is crucial in formulating strategies to mitigate or eliminate them, thereby facilitating the transition of the tourism industry towards low-carbon practices. Previous research studies have focused on the various obstacles and challenges related to low-carbon initiatives in different contexts. For instance, Liu (2014) explored the barriers to the adoption of low carbon production: A multiple-case study of Chinese industrial firms. Changbo and Jingjing (2011) examined construction of low-carbon tourist attractions based on low-carbon economy. Luo, Lam, and Ye (2019) identified barriers for the sustainable development of entertainment tourism in Macau. Additionally, several research studies have focused on low-carbon tourism management approaches. For example, Hsiao, Sung, Tsai, Wang, and Rong-Da Liang (2021) developed Establishing a model of low-carbon tour promotion for use by travel agencies from the perspective of shared value theory. Nicomsom, and Thirasak (2017) conducted a case study on low-carbon tourism management in Koh Mak, Trat Province. Songkran (2015) examined environmentally friendly and low-carbon tourism management in Thailand. Pimlapas (2017) studied carbon footprints from consumption in the tourism industry in Koh Samui, Surat Thani Province. However, despite these research efforts, successful implementation of low-carbon tourism practices in Thailand has not been achieved. There is hardly any research on the barriers to developing low-carbon tourism in Thailand. While Thailand has policies promoting low-carbon tourism, there are other factors that hinder the successful implementation of low-carbon tourism management.

Drawing from the preceding discourse, the researcher endeavors to investigate the subject matter entitled "Exploring Barriers to Low-Carbon Tourism Development in Thailand: A Supply-Side Perspective." The aim is to explore, analyze, and evaluate the impediments encountered in the advancement of low-carbon tourism within the Thai context, specifically from the standpoint of the supply side. The comprehensive comprehension of the factors impeding or restricting the progress of low-carbon tourism development in Thailand on the supply side holds the potential to facilitate the successful cultivation of low-carbon tourism within the country's tourism industry. This, in turn, will contribute to the establishment of sustainable tourism practices, thereby yielding multifaceted benefits encompassing economic, social, and environmental aspects for Thailand in the future.

2. Objectives

- (1) To explore barriers hindering the development of low carbon tourism in Thailand
- (2) To conduct exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) on the identified barriers.

3. Materials and Methods

This study adopts a mixed-methods approach, encompassing both qualitative and quantitative research methodologies. Its primary objective is to explore barriers to the development of low-carbon tourism in Thailand from the perspective of the tourism supply side. This includes stakeholders from the government and private sectors associated with tourism, tourism-related service businesses, as well as experts in tourism and environmental studies. By identifying and comprehending the obstacles hindering the progress of low-carbon tourism in Thailand, this research aims to enhance awareness and understanding of the challenges in this domain. The study employs a comprehensive literature review to gain insights into the barriers and limitations associated with low-carbon tourism. In-depth interviews and questionnaires are utilized as data collection tools, enabling the acquisition of more comprehensive and practicable data. The research process followed in this study is depicted in Figure 1, illustrating the sequential steps undertaken throughout the research endeavor.

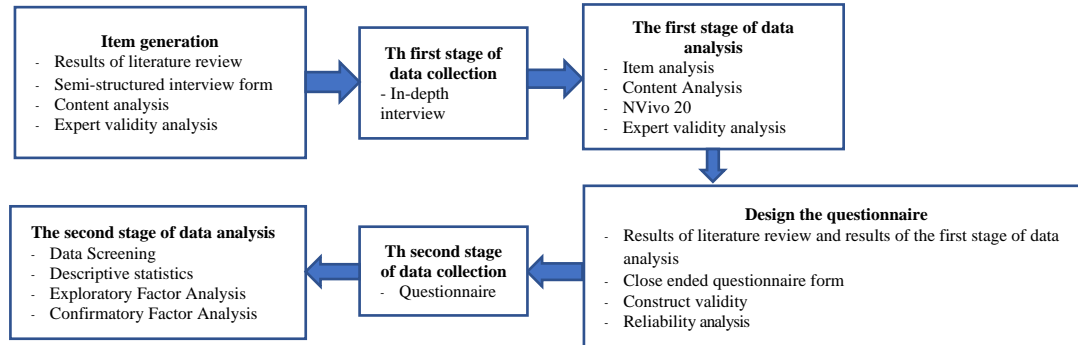


Figure 1 the sequential steps of research

3.1 The first phase of the study (qualitative research method)

3.1.1 Participants

The initial phase of this study employed a qualitative research methodology, focusing on key informants involved in tourism policy planning and management, tourism and environmental academics, and tourism business operators in Thailand. The selection of participants was based on their expertise and involvement in the field of tourism. Following Boddy (2016) recommendation, the sample size for in-depth interviews was determined to be 12 or more key informants, or until data saturation was achieved. In this study, a total of 17 key informants were included, providing valuable insights and perspectives. Further details regarding the participants can be found in Table 1, which is presented below.

Table 1 Information of key informants

No.	Organization name	Type of organization	Position
1	Tourism Authority of Thailand	Government sector	Governor
2	Ministry of Tourism and Sports	Government sector	Director of Tourism Development Division
3	Designated Areas for Sustainable Tourism Administration (Public Organization)	Government sector	Head of Knowledge Management Office of Sustainable Tourism
4	Thai Responsible Tourism Association	Private sector	Vice President
5	Thai Ecotourism And Adventure Travel Association	Private sector	Vice President
6	Lampang Rajabhat University	Academia sector	Lecturer in Tourism Program (Ph.D.) Academic Representative of northern region
7	Rangsit University	Academia sector	Lecturer in Tourism and Hospitality Management (Ph.D., Assistant Professor) Academic Representative of central region
8	Kasetsart University Chalermphrakiat Sakon Nakhon Province Campus	Academia sector	Deputy Dean for Student Affairs Development and Special Affairs and a lecturer at the Department of Service Industry (Ph.D.) Academic Representative of northeastern region
9	Prince of Songkla University	Academia sector	Director of Ecotourism Innovation Management Center (Ph.D.) Academic Representative of southern region
10	Centara Hotel and Resort (5 Green Hotel Award: Central World, Had Yai, Samui, Krabi, and Pattaya)	Service Business: 5 stars hotel	Senior Director of Affairs and Legal Relations

No.	Organization name	Type of organization	Position
11	Baan Taley Dao Resort (certified International Standards in terms of sustainable tourism management services from Travel life and certification measures for environmentally friendly domestic services from Green Hotel, Greenleaf, and Hotel Standards.)	Service Business: 3 stars hotel	Managing Director and Business Owner
12	Baan Nam Kieng Din Restaurant Green restaurant -Gold level 2021-2024)	Service Business: Restaurant	Managing Director and Business Owner
13	Kao Mai Pla Man Restaurant (Green restaurant-Silver level 2021-2024)	Service Business: Restaurant	Managing Director and Business Owner
14	Trekking Thai Co., Ltd.	Service Business: Travel	Managing Director
15	Malai Siam Co., Ltd.	Service Business: Travel	Managing Director
16	Rafts tour Phraek Nam Daeng Community Canal (Low Carbon Tourism, Samut Songkhram Province)	Service Business: Travel	Business Owner
17	Suksamran Electric Boat Transport	Service Business: Transportation	Business Owner

3.1.2 Data collection

The study was conducted in three distinct phases, as follows:

Phase 1: Preparation of Semi-Structured Interview Form. In this phase, a semi-structured interview form was developed based on the research conceptual framework. The interview questions were carefully crafted to address each specific aspect of the framework. Additionally, interview guidelines were designed to ensure consistency and facilitate the data collection process.

Phase 2: Familiarization with "Low Carbon Tourism". Before each interview session, the concept of "Low Carbon Tourism" was explained and clarified to the key informants. This step aimed to ensure that the participants were well-informed and adequately prepared to address the interview topics, thereby maximizing the study's outcomes and alignment with the research objectives.

Phase 3: Data Collection through In-Depth Interviews. Data collection involved conducting in-depth interviews with 17 key informants who possessed expertise and experience in the tourism industry. Each interview session lasted approximately 60-90 minutes and was audio-recorded with the consent of the participants. These interviews served as a valuable source of primary data, allowing for comprehensive exploration and analysis of the research topic.

By following these three sequential phases, the study successfully gathered rich and detailed insights from the key informants, contributing to a thorough understanding of the subject matter.

3.1.3 Data analysis

The data analysis process undertaken by the researcher is outlined as follows:

Step 1: Transcription and Data Organization. The audio files obtained from the in-depth interviews with key informants were transcribed into written format, specifically Word files. The subsequent step involved organizing and structuring the data. In line with qualitative data analysis principles (Miles, & Huberman, 1994), member review and expert review were employed to enhance the reliability and credibility of the qualitative analysis process (Mhyre, 2010).

Step 2: Content Analysis. Content analysis was employed as the research method to interpret the textual information gathered from the interviews. This method involved a systematic classification process, whereby issues and patterns were encoded and identified within the data (Hsieh, & Shannon, 2005).

Step 3: Utilization of NVivo 20. To facilitate the management and analysis of the qualitative data, the researcher utilized the computer software NVivo 20. This software aided in organizing, examining relationships within the data, encoding, classifying, and interpreting the data, providing valuable support for the qualitative data analysis process.

By following these steps, the researcher effectively analyzed the collected data, ensuring a rigorous and systematic approach to derive meaningful insights and conclusions from the research.

3.1.4 Expert Validation

The researcher followed a rigorous validation process for the written transcribed interviews to ensure accuracy and reliability:

1. **Key Information Confirmation:** The written transcriptions were returned to the key informants for assessment and confirmation. This step aimed to verify that the interpretations accurately reflected the intended meaning conveyed by the key informants during the interviews.

2. **Expert Reviews:** To enhance the analytical rigor, two travel experts were invited to review the entire data set. Their role was to identify any overlooked analytical units and provide their expert opinions on the data analysis process, thereby contributing to greater accuracy and robustness. This step aligns with the recommendation by Chang, Shen, and Li. (2019) to address any inconsistencies or potential discrepancies within the data.

3. **Validation by Low-Carbon Tourism Experts:** After categorizing the data using the NVivo 20 software, three experts with expertise in low-carbon tourism were engaged to validate the classification results. Their valuable insights and knowledge helped to ensure the accuracy and reliability of the data analysis process, reinforcing the credibility of the study.

By incorporating these validation measures, the researcher demonstrated a commitment to rigor and quality in the analysis of the data, contributing to the overall validity and trustworthiness of the research findings.

3.2 The second phase of the study (quantitative research method)

3.2.1 Participants

The second phase of this study utilized quantitative research methodology. The participants in this phase were selected from a diverse range of stakeholders in the tourism industry, including public and private tourism-related agencies, tourism service operators, and scholars specializing in tourism and environmental studies. The determination of the sample size for the closed-ended questionnaires followed the guideline proposed by Kline (2010). According to this guideline, the sample size should be 10 times the number of indicators or observed variables. As the qualitative study identified 20 indicators, the optimal sample size for this phase of the study was calculated to be 200 (20x10) participants. In total, 224 online questionnaires were collected to gather the necessary data for analysis. This sample size exceeded the calculated optimal size, providing a robust dataset for the quantitative analysis.

3.2.2 Data collection

This study was conducted in three distinct phases, as outlined below:

Phase 1: Data Analysis and Questionnaire Preparation. In this initial step, the researcher utilized the data analysis results obtained from the in-depth interviews, which were categorized using the NVivo 20 software. Based on these findings, a closed-ended questionnaire was prepared, consisting of two parts.

Part 1 of the questionnaire focused on gathering general information from the respondents. It included four items: the type of agency or organization they represent, gender, age, and level of education. These items aimed to establish a demographic profile of the participants.

Part 2 of the questionnaire comprised a 20-item opinion section, specifically designed to assess the perceived obstacles to the development of low-carbon tourism in Thailand. Respondents were asked to rate their opinions using a 5-level Likert scale, as recommended by Mirahmadizadeh, Delam, Seif, and Bahrami (2018).

Phase 2: Data Collection. In this step, data collection was carried out through an online platform. A total of 224 individuals participated by accessing the questionnaire via a provided link or by scanning a QR code. This online data collection method ensured convenience and accessibility for the respondents.

By following these sequential phases, the study effectively combined qualitative and quantitative approaches to gain comprehensive insights into the barriers of low-carbon tourism development in Thailand.

3.2.3 Data analysis

The data analysis process for this study is outlined as follows:

Step 1: Data Screening and Review. Before proceeding with the analysis, the researcher carefully reviewed and screened the data. Several criteria were considered, including the skewness, kurtosis, Variance Inflation Factor (VIF), and Tolerance of all observed variables. Skewness and kurtosis were examined to ensure the normal distribution of the data, with values within ± 1.96 indicating normality. The VIF and Tolerance values were assessed to check for multicollinearity issues. The researcher followed established guidelines, considering a VIF value below 10 and a Tolerance value not less than 0.10 for further analysis. (Hair, Anderson, Tatham, & Black, 1995; Kennedy, 1992; Neter et al., 1989; Tabachnick, Fidell, & Osterlind, 2001; Rose, 2015; Kanlaya, 2018)

Step 2: Statistical Analysis. The research data was analyzed using appropriate statistical methods with the aid of a computer program. The following statistical techniques were employed:

1. Descriptive Statistics: Mean scores (\bar{X}) and percentages were used to analyze the baseline data of the study sample.

2. Exploratory Factor Analysis (EFA) was conducted to identify common factors that could explain the relationships between observed variables. The Kaiser-Meyer-Olkin (KMO) statistic was used to assess the suitability of the analysis, with a KMO value close to 1 indicating appropriateness. Bartlett's test of sphericity was used to test the hypothesis of whether the correlation matrix was an identity matrix or not. Principal Component Analysis (PCA) was employed, considering factor loading variables with weights greater than 0.5 and at least three observed variables per factor. The Eigenvalue greater than 1 criterion was used, and the Varimax Rotation method was applied for orthogonal rotation to determine the observed variables that loaded on each component (Jöreskog, & Sörbom, 1996).

3. Confirmatory Factor Analysis (CFA) was performed to confirm the structure of the components obtained from the EFA. Criteria for evaluating the model's goodness of fit included the Chi-Square Statistics (χ^2/df), with χ^2/df values less than or equal to 3.00 considered acceptable. For complex models, χ^2/df values should not exceed 5.00. The Root Mean Square Error of Approximation (RMSEA) should be less than 0.08 to indicate model consistency. Other indices, such as Adjusted Goodness-of-Fit Index (AGFI), Comparative Fit Index (CFI), and Standardized Root Mean Squared Residual (SRMR), were also considered. Threshold values for these indices were determined based on established guidelines (Kline, 1998; Schumacker, & Lomax, 2010; Steiger, 1990; Byrne, 2013; Hu, & Bentler, 1999; Byrne, 1998; Diamantopoulos, Siguaw, & Cadogan, 2000).

By following this systematic data analysis process, the researcher ensured the accuracy and reliability of the findings, enabling a robust evaluation of the research objectives.

3.2.4 Expert Validation

To ensure the validity and reliability of the data, the researcher employed expert validation techniques as follows:

1. Verification of Data Validity: To assess the validity of the data, the researcher utilized the Index of Item Objective Congruence (IOC), a measure of congruence between the questionnaire items and the research objectives. The questionnaires and research objectives were presented to three experts in the field, who evaluated the alignment between the questionnaire items and the main content. The criteria for question selection involved an IOC consistency index of ≥ 0.5 , indicating acceptable congruence. The analysis revealed that the consistency index of the questions ranged from 0.67 to 1.00. The experts' suggestions were then incorporated to enhance the completeness of the questionnaire.

2. Verification of Reliability: To assess the reliability of the questionnaire, the researcher made improvements based on the experts' suggestions and conducted a pilot test with a sample of 30 individuals.

The data obtained from the pilot test were analyzed using Cronbach's alpha coefficient (α) (Cronbach, 1990). A minimum reliability value of 0.70 was considered acceptable (Hair, Anderson, & Tatham, 1987; Hair, Black, Babin, & Anderson, 2013). The calculated Cronbach's alpha coefficient was 0.931, which surpassed the specified criteria.

By employing these expert validation techniques, the researcher ensured the validity and reliability of the data collection instrument, thereby enhancing the credibility of the research findings.

4. Results

4.1 In-depth interview results

The in-depth interviews conducted in this study involved a total of 17 key informants from the tourism supply sector. The key informants were selected based on their expertise and involvement in tourism-related activities in Thailand. The composition of the key informants was as follows: 5 executives from public and private agencies involved in tourism (29.41%), 4 academicians specializing in tourism and environment (23.53%), and 8 service business operators associated with the tourism industry (47.06%). Detailed information regarding the distribution of key informants is presented in Table 2.

Table 2 Number and percentage of key informants classified by type of organization

Type of organization	Number (people)	Number (%)
Government and private sectors involved in tourism in Thailand	5	29.41
Academic Sector: Higher Education Institutions in Tourism and Environment	4	23.53
Service business related to the tourism industry	8	47.06
Total	17	100

The data analysis conducted using the NVivo 20 program resulted in a total of 175 data units. These units were further classified into 4 main categories and 15 subcategories, which are closely related to the barriers encountered in the development of low-carbon tourism in Thailand. To ensure the credibility of the analysis, the data units were reviewed by experts. The first expert achieved a credibility score of 0.91 (160/175), the second expert obtained a score of 0.94 (165/175), and the third expert achieved a score of 0.96 (168/175). The resulting coding hierarchy, developed based on the data analysis approach, is presented in the form of a coding hierarchy chart, as depicted in Figure 2. This chart provides a visual representation of the hierarchical structure of the coding system used to organize and analyze the data.

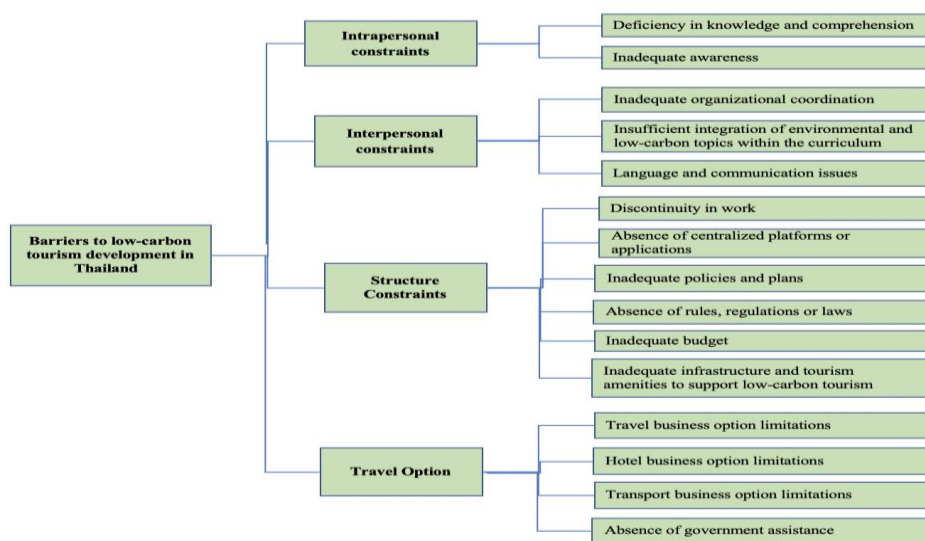


Figure 2 Coding hierarchy chart

The researcher provides a comprehensive overview of the results obtained from the analysis of barriers to developing low-carbon tourism in Thailand. These results are categorized into 4 main categories and further divided into 15 subcategories. The frequencies of each category and subcategory are presented in Table 3.

Table 3 Categories, subcategories, and frequency of barriers of low-carbon tourism development in Thailand

Categories and subcategories	frequency
1. Barriers of low-carbon tourism development in Thailand related to intrapersonal constraints	57
1.1 Lack of knowledge and understanding	44
1.2 Lack of awareness	13
2. Barriers of low-carbon tourism development in Thailand related to Interpersonal Constraints	20
2.1 Lack of coordination between organizations	11
2.2 Lack of teaching about the environment and low carbon in the curriculum.	5
2.3 Using language to communicate about environmental and low-carbon issues to those involved in tourism	4
3. Barriers of low-carbon tourism development in Thailand related to Structure Constraints	57
3.1 The work of the government sector lacks continuity.	3
3.2 Lack of centralized platforms or applications for low-carbon tourism	10
3.3 Government agencies do not have clear policies and plans for environmental protection and low-carbon tourism.	13
3.4 Lack of regulations or legislation related to carbon emission reduction and low carbon tourism.	12
3.5 Lack of government budgets for promoting low-carbon tourism	3
3.6 Tourism infrastructure and facilities are not conducive to low-carbon tourism.	16
4. Barriers of low-carbon tourism development in Thailand related to the limitations of Travel Option	23
4.1 There are few options for low-carbon tourism in tourism businesses.	2
4.2 There are few options for low-carbon tourism accommodation businesses.	1
4.3 There are few alternatives for low-carbon tourism transportation business.	7
4.4 Tourism-related enterprises lack government support in transitioning to low carbon	13

4.2 Results from data collection from questionnaires

4.2.1. Data verification before analysis

Prior to analysis, the collected data from the questionnaires underwent a verification process. The researcher examined and filtered the data by assessing the skewness and kurtosis of all observed variables, as well as the Variance Inflation Factor (VIF) and Tolerance. It was found that all observed variables met the specified criterion. Additionally, the VIF values of all variables were not greater than 10, and the Tolerance values were not less than 0.10, which align with the predetermined consideration criteria for data analysis.

4.2.2 Descriptive statistics analysis results

The results of the analysis pertaining to the respondents' personal data revealed that a majority of the participants were government personnel actively engaged in the field of tourism, accounting for 191 individuals (85.3%). Among the respondents, the majority were male, comprising 139 individuals (62.1%). Furthermore, a significant portion of the participants fell within the age range of 45-54 years, with 81 individuals (36.2%) falling into this category. Regarding educational qualifications, the sample group predominantly held a bachelor's degree, with 118 individuals (52.7%) attaining this level of education. More detailed information can be found in Table 4

Table 4 Results of general data analysis of respondents (n = 224)

Variable	Items	Number (%)
Operational unit	Personnel of government agencies involved in tourism	191 (85.3%)
	Academician in Tourism and Environment of the Academy	12 (5.4%)
	Personnel/operators of tourism-related service businesses	21 (9.3%)
Gender	Male	139 (62.1%)
	Female	82 (36.6%)

Variable	Items	Number (%)
Age	Not specified	3 (1.3%)
	20 – 24 years old	1 (0.4%)
	25 - 34 years old	45 (20.1%)
	35 - 44 years old	55 (24.6%)
	45 - 54 years old	81 (36.2%)
	55 years or older	42 (18.8%)
Education level	Undergraduate	1 (0.4%)
	Bachelor's degree	118 (52.7%)
	Master's degree	96 (42.9%)
	Ph.D	9 (4%)

4.2.3 Exploratory Factor Analysis (EFA) results

The researcher selected the 20 items that met the criteria for quality analysis and proceeded to conduct an Exploratory Factor Analysis (EFA) using the Principal Component Analysis (PCA) method in the SPSS program. The axes were then rotated using the Orthogonal Rotation method. In this stage, utilizing data collected from a sample of 224 participants, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test indicated a value of 0.931, surpassing the threshold of 0.5 and approaching 1 (Kerlinger, 1986).

Based on these findings, it can be concluded that this dataset is suitable for applying factor or component analysis techniques. In this study, a total of 20 factors were identified using the Varimax rotation method. It was observed that the factor loadings differed from those obtained without rotation. The data analysis revealed the presence of three factors derived from the EFA results concerning the barriers to developing low-carbon tourism in Thailand, as presented in Table 5.

Table 5 EFA analysis of the barriers of low carbon tourism development in Thailand (n = 224)

Factors/Items	Factor Loading	Eigenvalue	Cumulative Variation	Cronbach's α
Factor 1: Barriers related to structural constraints		10.65	53.26%	0.913
17. Do you think that low-carbon tourism transport services businesses have few options for serving low-carbon tourists.	0.81			
18. Do you think that there are few low-carbon tourism accommodation businesses for tourists to choose.	0.792			
19. Do you think that the low-carbon tourism business is still small compared to the demand for low-carbon tourists.	0.774			
15. Do you think that government agencies at the provincial and local levels do not have enough budgets to directly implement low-carbon tourism?	0.764			
16. Do you think that the tourism infrastructure and facilities are not favorable and inadequate for low-carbon tourism.	0.717			
20. You think that tourism and service businesses still lack government support in implementing the transition to low-carbon tourism.	0.679			
12. Do you think that Thailand currently does not have a centralized platform or application for tourism-related enterprises to take advantage of their service business activities to help reduce carbon emissions such as Calculate carbon footprint, database on carbon emissions of each type of activity, etc.	0.608			
Factor 2: Barriers related to intrapersonal constraints		1.75	62.00%	0.915
3. You think that government personnel still lack knowledge and understanding in applying technology to develop low-carbon tourism.	0.785			
1. You think that government personnel at different levels related to tourism still lack knowledge and accurate understanding of low-carbon tourism.	0.776			

Factors/Items	Factor Loading	Eigenvalue	Cumulative Variation	Cronbach's α
4. You think that at present, government agencies still lack the use of technology to create knowledge and understanding of low-carbon tourism.	0.765			
2. You think that hospitality and tourism personnel still lack accurate knowledge and understanding about low-carbon tourism.	0.709			
5. You think that local government officials lack awareness of the importance of low-carbon tourism.	0.673			
11. Do you think that the implementation of government agencies in relation to the development of low-carbon tourism is lacking continuity.	0.574			
14. Do you think that the government has no regulations or laws on carbon emission reduction and low carbon tourism applicable to tourism-related service businesses.	0.565			
13. Do you think that government agencies do not yet have clear policies and plans for environmental protection and low-carbon tourism.	0.531			
6. Do you think that establishments that are tourism service businesses still lack awareness and do not see the importance of low-carbon tourism.	0.745			
Factor 3: Barriers related to interpersonal constraints		1.02	67.08%	0.881
8. You think that government agencies still lack coordination and cooperation in the development of low-carbon tourism between government agencies and private sectors.	0.707			
9. Do you think that the education curriculum of educational institutions does not include tourism and environment/low-carbon education in the curriculum.	0.675			
10. Do you think that using language and communicating about the environment and low carbon to personnel in the workplace creates a problem with accurate and consistent awareness of the environment and low carbon.	0.659			
7. You think that government agencies still lack coordination and cooperation in the development of low-carbon tourism between government agencies and the government itself.	0.657			

Reliability and Validity Analysis

Reliability and validity analysis were conducted to assess the quality of the measurement instruments used in this study. Reliability refers to the consistency and stability of the measurements. Table 4 presents the Cronbach's α values for all factors related to barriers in the development of low-carbon tourism in Thailand. The obtained values exceed the recommended threshold of 0.70 (Hair et al., 1987; Hair et al., 2013). The overall reliability coefficient for the barriers of low-carbon tourism development in Thailand is 0.93, indicating a statistically high level of internal consistency. These results suggest that the measurement instruments used in this study are reliable for assessing the barriers to low-carbon tourism development in Thailand.

4.4.4 Confirmatory Factor Analysis (CFA)

To validate the measurement components against the proposed model or theory (Byrne, 2016), the researcher conducted Confirmatory Factor Analysis (CFA) using a statistical package. The indicators derived from the results of the confirmatory factor analysis demonstrated the alignment between the study's measures and the intended theoretical constructs. This CFA aimed to verify the model assessing the barriers to the development of supply-side low carbon tourism in Thailand, which was derived from the previous exploratory factor analysis (EFA). The CFA consisted of 3 latent variables and 20 observed variables, as outlined below:

1. The results of the Confirmatory Factor Analysis (CFA) for the supply-side barriers of low-carbon tourism development in Thailand related to structural constraints (STT), are presented in Table 5. This analysis involved the examination of 7 observed variables and their respective Pearson correlation coefficients, as well as an assessment of the model's concordance.

Table 6 Pearson correlation coefficients between observed variables of the barriers related to structure constraints (STT)

	STT1	STT2	STT3	STT4	STT5	STT6	STT7
STT1	1						
STT2	0.742	1					
STT3	0.713	0.774	1				
STT4	0.650	0.577	0.574	1			
STT5	0.644	0.666	0.602	0.638	1		
STT6	0.634	0.620	0.640	0.607	0.484	1	
STT7	0.520	0.596	0.586	0.452	0.551	0.506	1

The analysis of Table 6 revealed significant and positive Pearson correlation coefficients among the observed variables pertaining to the barriers of low-carbon tourism related to structure constraints (STT). The correlation coefficients ranged from 0.484 to 0.774, and all values achieved statistical significance at the 0.01 level, indicating a strong and consistent relationship between these variables.

Table 7 Consistency index of the confirmatory components of the barriers related to structural constraints variables (STT)

Statistics used in the audit	Criteria for consideration	Calculated value	Consideration results
χ^2/df	$\chi^2/df < 3$	0.43	qualify
GFI	> 0.90	1.00	qualify
AGFI	> 0.90	1.00	qualify
CFI	≥ 0.95	1.00	qualify
RMSEA	< 0.05	0.00	qualify
SRMR	< 0.05	0.00	qualify

Based on the findings presented in Table 7, the confirmatory component consistency index of the variables related to structure constraints in the barriers of low-carbon tourism demonstrated favorable statistical values for evaluation. The chi-square value was non-significant (p -value = 0.92), indicating a good fit between the model and the observed data. Furthermore, the values of $\chi^2/df = 0.43$, Comparative Fit Index (CFI) = 1.00, Goodness-of-Fit Index (GFI) = 1.00, Adjusted Goodness-of-Fit Index (AGFI) = 1.00, Root Mean Square Error of Approximation (RMSEA) = 0.00, and Standardized Root Mean Squared Residual (SRMR) = 0.00 all met the established criteria. These results indicate that the proposed model is consistent with the empirical data.

Table 8 Factor loading and the confidence value of measurement of barriers related to structural constraints (STT)

Factor	Item	Factor Loading	AVE	CR
STT	STT1	1.27	0.87	0.74
	STT2	0.95		
	STT3	0.89		
	STT4	1.03		
	STT5	1.00		
	STT6	1.13		
	STT7	0.98		

Based on the results presented in Table 8, the confirmatory components associated with structure constraints (STT) were examined. This component is comprised of 7 observed variables with factor loading values ranging from 0.89 to 1.27. It is worth noting that factor loading values greater than 0.40 were considered appropriate criteria (Hair, Black, Babin, Anderson, & Tatham, 2006). Furthermore, the Average Variance Extracted (AVE) value was calculated to be 0.87, which meets the recommended criterion of $AVE \geq 0.50$ (Fornell, & Larcker, 1981; Hair et al., 2006). These statistical values provided insights into the barrier variables related to structure constraints (STT). Moreover, the reliability of the component measurement was evaluated using the Composite Reliability (CR), which yielded a value of 0.74. This value surpasses the recommended threshold of $CR \geq 0.70$ (Bagozzi, & Yi, 1988; Hair Jr, Howard, & Nitzl., 2020), indicating satisfactory reliability of the measurement for the identified barriers.

2. The results of the Confirmatory Factor Analysis (CFA) for the supply-side barriers of low-carbon tourism development in Thailand related to Intrapersonal Constraints (IAP), are presented in Table 9. This analysis involved the examination of 9 observed variables and their respective Pearson correlation coefficients, as well as an assessment of the model's concordance.

Table 9 Pearson correlation coefficients between observed variables of the barriers related to Intrapersonal Constraints (IAP)

	IAP1	IAP2	IAP3	IAP4	IAP5	IAP6	IAP7	IAP8	IAP9
IAP1	1								
IAP2	0.689	1							
IAP3	0.712	0.667	1						
IAP4	0.642	0.776	0.642	1					
IAP5	0.562	0.625	0.612	0.623	1				
IAP6	0.564	0.519	0.556	0.536	0.628	1			
IAP7	0.510	0.518	0.585	0.456	0.533	0.636	1		
IAP8	0.447	0.518	0.521	0.476	0.509	0.565	0.559	1	
IAP9	0.363	0.483	0.464	0.566	0.585	0.482	0.440	0.419	1

Based on the data presented in Table 9, it was observed that the Pearson correlation coefficients between the observed variables associated with the barriers of low carbon tourism concerning intrapersonal constraints (IAP) ranged from 0.363 to 0.776. Notably, all correlation values demonstrated statistical significance at a significance level of 0.01.

Table 10 Consistency index of the confirmatory components of the barriers related to intrapersonal constraints variables (IAP)

Statistics used in the audit	Criteria for consideration	Calculated value	Consideration results
χ^2/df	$\chi^2/df < 3$	0.52	qualify
GFI	> 0.90	1.00	qualify
AGFI	> 0.90	1.00	qualify
CFI	≥ 0.95	1.00	qualify
RMSEA	< 0.05	0.022	qualify
SRMR	< 0.05	0.00	qualify

Based on the statistical values presented in Table 10, the confirmatory component consistency index of the barriers variables related to intrapersonal constraints was examined. The chi-square value obtained was significant (p -value = 0.09622). Additionally, the model demonstrated a satisfactory fit as evidenced by the following indices: $\chi^2/df = 0.52$, Comparative Fit Index (CFI) = 1.00, Goodness-of-Fit Index (GFI) = 1.00, Adjusted Goodness-of-Fit Index (AGFI) = 1.00, Root Mean Square Error of Approximation (RMSEA) = 0.022, and Standardized Root Mean Squared Residual (SRMR) = 0.00. The fulfillment of all these criteria indicates that the model aligns well with the empirical data.

Table 11 Factor loading and the confidence value of measurement of barriers related to intrapersonal constraints (IAP)

Factor	Item	Factor Loading	AVE	CR
IAP	IAP1	0.50	0.86	0.77
	IAP2	0.64		
	IAP3	0.66		
	IAP4	0.71		
	IAP5	0.78		
	IAP6	0.82		
	IAP7	0.73		
	IAP8	0.69		
	IAP9	0.66		

Based on the results presented in Table 11, the confirmatory components associated with intrapersonal constraints (IAP) were examined. This component comprised 9 observed variables with factor loading values ranging from 0.50 to 1.82. It is important to note that factor loading values greater than 0.40 were considered appropriate criteria (Hair et al., 2006). Additionally, the Average Variance Extracted (AVE) value was calculated to be 0.86, which exceeds the recommended criterion of $AVE \geq 0.50$ (Fornell, & Larcker, 1981; Hair et al., 2006). This indicates that the measurement of the barrier variables related to intrapersonal constraints (IAP) is appropriate. Furthermore, the reliability of the component measurement was evaluated using the Composite Reliability (CR), yielding a value of 0.77. This value surpasses the recommended threshold of $CR \geq 0.70$ (Bagozzi, & Yi, 1988; Hair et al., 2020), indicating satisfactory reliability of the measurement for the identified barriers. These statistical values provide valuable insights into the measurement properties of the intrapersonal constraints (IAP) component.

3. The results of the Confirmatory Factor Analysis (CFA) for the supply-side barriers of low-carbon tourism development in Thailand related to Interpersonal Constraints (IEP), are presented in Table 12. This analysis involved the examination of 4 observed variables and their respective Pearson correlation coefficients, as well as an assessment of the model's concordance.

Table 12 Pearson correlation coefficients between observed variables of the barriers related to interpersonal constraints (IEP)

	IEP1	IEP2	IEP3	IEP4
IEP1	1			
IEP2	0.540	1		
IEP3	0.548	0.726	1	
IEP4	0.804	0.457	0.527	1

Based on the analysis presented in Table 12, the Pearson correlation coefficient between the observed variables associated with interpersonal constraints (IEP) in the barriers of low carbon tourism was examined. The correlation coefficients ranged from 0.457 to 0.804, and all values were found to be statistically significant at a significance level of 0.01.

Table 13 Consistency index of the confirmatory components of the barriers related to interpersonal constraints variables (IEP)

Statistics used in the audit	Criteria for consideration	Calculated value	Consideration results
χ^2/df	$\chi^2/df < 3$	0.51	qualify
GFI	> 0.90	1.00	qualify
AGFI	> 0.90	1.00	qualify
CFI	≥ 0.95	1.00	qualify
RMSEA	< 0.05	0.00	qualify
SRMR	< 0.05	0.00	qualify

Based on the analysis presented in Table 13, the confirmatory component consistency index of the barriers variables related to interpersonal constraint (IEP) was examined. The statistical values used for examination are as follows: The chi-square value was found to be non-significant (p-value equal to 0.8521), indicating that the observed data fits the expected model well. The value of $\chi^2/df = 0.51$, The Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), and Adjusted Goodness-of-Fit Index (AGFI) all had perfect values of 1.00, The Root Mean Square Error of Approximation (RMSEA)=0.00, The Standardized Root Mean Squared Residual (SRMR) = 0.00. The passing of all these criteria suggests that the model, representing the barriers related to interpersonal constraint (IEP), is consistent with the observed data. These findings provide empirical evidence supporting the adequacy of the model and the relationships among the variables within the context of low carbon tourism.

Table 14 Factor loading and the confidence value of measurement of barriers related to interpersonal constraints (IEP)

Factor	Item	Factor Loading	AVE	CR
IEP	IEP1	1.50	0.86	0.74
	IEP2	0.89		
	IEP3	0.97		
	IEP4	0.68		

Based on the analysis presented in Table 14, the confirmatory components of the barriers related to interpersonal constraints (IEP) were examined. The statistical values used for examination are as follows: The factor loading values of the observed variables ranged from 0.68 to 1.50, indicating that these variables have a significant influence on the latent construct. Notably, all factor loading values exceeded the recommended threshold of 0.40, as established by Hair et al. (2006), suggesting the appropriateness of these variables in measuring the construct. The Average Variance Extracted (AVE) value was found to be 0.86, which exceeds the minimum threshold of 0.50 suggested by Fornell, and Larcker (1981) and Hair et al. (2006). This indicates that a substantial proportion of the variance in the observed variables is captured by the underlying latent construct. The reliability of the component measurement, assessed using the Composite Reliability (CR) criterion, was determined to be 0.74. This value surpasses the recommended threshold of 0.70, as proposed by Bagozzi, and Yi (1988) and Hair et al. (2020), implying adequate internal consistency and reliability of the measurement instrument. These findings highlight the appropriateness and reliability of the barriers variables related to interpersonal constraints (IEP) in capturing and assessing the construct within the context of low carbon tourism.

5. Discussion

This research employs a mixed-method approach, combining qualitative and quantitative methods, to investigate the barriers to low-carbon tourism development in Thailand from the supply-side perspective. Based on the findings of this study, a comprehensive model depicting the barriers to low-carbon tourism development in Thailand on the supply side was developed. Figure 3 illustrates the BLTD model, which encapsulates the identified barriers and their interrelationships. This model serves as a valuable framework for understanding and addressing the challenges hindering the advancement of low-carbon tourism in Thailand's supply sector.



Figure 3 The BLTD Model

Explanation of the Model for Understanding the Barriers to Low-Carbon Tourism Development in Thailand: A Supply-Side Perspective

1. Barriers of low-carbon tourism related to structure constraints:

- Low-carbon hospitality businesses with limited options for travelers to choose from, including transport services, accommodation services, and tours, have been identified as a significant barrier. This finding aligns with the research conducted by Dai et al. (2022) and Pittaya (2011).
- Inadequate budgets allocated by local government agencies specifically for the development of

low-carbon tourism is another significant constraint. Currently, the budgetary allocation received by local government agencies is primarily directed towards general tourism development, rather than specifically supporting low-carbon initiatives. This observation is consistent with the research conducted by Changbo, and Jingjing (2011) and Rao (2018).

- Inadequate tourism infrastructure and facilities that are conducive to low-carbon tourism, such as low-carbon transport options, bike paths, and walking paths, pose a considerable barrier. This finding is in line with the research conducted by Luo et al. (2019) and Heung, Kucukusta, and Song (2011).

- The Absence of government assistance for tourism and service enterprises in implementing the transition to low-carbon tourism has hindered the progress of sustainable practices. This observation resonates with the findings of Luo et al. (2019) and Rao (2018).

- Thailand currently absence of centralized platform or application that could serve as a database-centric resource for businesses and tourists, offering functionalities such as carbon footprint calculation and a comprehensive database on the carbon emissions associated with various activities. This finding is consistent with the research conducted by Changbo, and Jingjing (2011).

It is important to acknowledge that the identified barriers are rooted in structural constraints within the supply side of the low-carbon tourism industry in Thailand. These barriers significantly impede the adoption and implementation of sustainable practices, highlighting the need for targeted interventions and policy measures to overcome these challenges.

2. Barriers of low-carbon tourism related to intrapersonal constraints:

- Deficiency in knowledge and comprehension among government personnel and individuals in the technology and low-carbon tourism service business has emerged as a significant barrier. This finding is consistent with the research conducted by Dai et al. (2022) and Changbo, and Jingjing (2011).

- Inadequate awareness regarding the importance of low-carbon tourism among local government officials and hospitality establishments has resulted in a lack of proactive engagement in low-carbon initiatives. This observation aligns with the research findings of Dai et al. (2022), Rao (2018), Khalid, Saad, and Mahadi (2013) and Changbo, and Jingjing (2011).

- Discontinuity in the implementation of low-carbon tourism projects by government agencies has been identified as a significant constraint. Upon completion of a project, there is often a lack of follow-up or sustained action to ensure the long-term sustainability of low-carbon initiatives. This finding is in line with the research conducted by Dai et al. (2022) and Rao (2018).

- Government agencies' inadequate policies and plans, including the absence of regulations or laws pertaining to carbon emissions reduction and low-carbon tourism, have contributed to the neglect of compliance among tourism stakeholders across sectors. This observation is consistent with the research conducted by Luo et al. (2019), Heung et al., (2011), and Rao (2018).

These intrapersonal constraints significantly impede the progress of low-carbon tourism development in Thailand. Addressing these barriers requires targeted efforts to enhance knowledge and awareness, establish comprehensive policies and regulations, and ensure the continuity and sustainability of low-carbon initiatives.

3. Barriers of low-carbon tourism related to interpersonal constraints:

- Inadequate coordination and cooperation in the development of low-carbon tourism between government agencies, as well as between government agencies and the private sector, has emerged as a significant barrier. This lack of coordination leads to inconsistent approaches and makes it challenging to achieve the common goal of low-carbon tourism development. This finding aligns with the research conducted by Davras, Caber, and Crawford (2019), Khalid, Saad, and Mahadi (2013) and Samardali Kakai (2013).

- The absence of tourism and environment/low-carbon education in the curriculum of educational institutions has resulted in a lack of understanding and knowledge regarding the environment and low-carbon practices among students. This deficiency hinders the proper adoption and implementation of low-carbon

initiatives. This observation is consistent with the research findings of Dai et al. (2022), Luo et al. (2019) and Rao (2018).

- Challenges arise in effectively communicating environmental and low-carbon issues to personnel in hospitality enterprises. Language barriers and difficulties in conveying accurate and consistent understanding of the environment and low-carbon practices pose significant challenges. It is important to note that personnel in tourism-related service businesses in Thailand comprise not only Thai individuals but also workers from other ASEAN countries. This finding is consistent with the research conducted by Heung et al. (2011), Samardali-Kakai (2013), Rokni, Turgay, and Park (2017), and Davras et al. (2019).

These interpersonal constraints significantly impede the progress of low-carbon tourism development in Thailand. Addressing these barriers necessitates enhancing coordination and cooperation among relevant stakeholders, integrating tourism and environment/low-carbon education in the curriculum, and establishing effective communication strategies for environmental and low-carbon issues within the hospitality sector.

6. Conclusions

6.1 Study results according to objective 1) To explore barriers hindering the development of low carbon tourism in Thailand from the supply side perspective. Key informants for this study included 17 individuals involved in the tourism supply sector. Data analysis using the NVivo20 program yielded 175 data units, which were then categorized into 4 main categories and 15 subcategories related to the barriers of low carbon tourism development in Thailand. The study identified 4 aspects of barriers to low carbon tourism development in Thailand, consisting of intrapersonal constraints, interpersonal constraints, structural constraints, and limitations in travel options. These findings provide a comprehensive understanding of the barriers to low carbon tourism development in Thailand, shedding light on various aspects that need to be addressed to promote sustainable and low-carbon practices in the tourism industry.

6.2 Study results according to objective 2) To conduct Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) on the identified barriers of low carbon tourism development in Thailand. Data analysis was conducted on in-depth interviews categorized using NVivo 20 software, and a closed-ended questionnaire was prepared. Data were collected from 224 individuals, including personnel from government agencies, private sectors related to tourism, personnel in tourism-related service businesses, and academics in tourism and the environment.

The results of the Confirmatory Factor Analysis (CFA) validated the model assessing the barriers to supply-side low carbon tourism development in Thailand, derived from the previous EFA findings. The CFA involved 3 latent variables and 20 observed variables. The barriers related to structure constraints emerged as the first dimension, encompassing 7 sub-variables. The confirmatory component consistency index for the structure constraint variables, the results indicated that the model exhibited a good fit with the empirical data. Dimension 2: the barriers of low carbon tourism development in Thailand related to intrapersonal constraints, consisting of 9 sub-variables. The confirmatory component consistency index of the barriers variables, the results indicated that the model was consistent with the empirical data. Dimension 3: This study examined the barriers to low carbon tourism development in Thailand associated with interpersonal constraints. These constraints encompassed 4 sub-variables. The confirmatory component consistency index for the interpersonal constraint variables, the results indicate that the model exhibited a good fit with the empirical data.

The model used to explore the barriers to low carbon tourism development in Thailand on the supply side successfully met all statistical criteria. The confirmatory components, including three variables and 20 sub-variables, demonstrated consistency with the empirical data, affirming the validity of the model in examining the barriers to low carbon tourism development in Thailand.

In conclusion, this study explored the barriers to low-carbon tourism development in Thailand from a supply-side perspective. The findings shed light on various dimensions of barriers, including structure constraints, intrapersonal constraints, and interpersonal constraints. These barriers pose significant challenges to the implementation of low-carbon practices in the tourism sector. These findings highlight the need for substantial investments and policies to address these structural shortcomings. To reduce intrapersonal barriers, necessitate targeted educational and awareness programs, along with the formulation of

comprehensive policies to foster sustainable low-carbon practices. Furthermore, the study highlighted the interpersonal constraints that require enhanced collaboration, curriculum revisions, and effective communication strategies among stakeholders. Overall, the findings of this study contribute to a deeper understanding of the barriers inhibiting low-carbon tourism development in Thailand from a supply-side perspective. The identified constraints call for a holistic approach involving policymakers, government agencies, educational institutions, and industry stakeholders to create an enabling environment for sustainable low-carbon tourism. By addressing these barriers, Thailand can strive towards a more environmentally friendly and resilient tourism industry in the future.

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Let's Go Halves Scheme: An Evaluation of Effectiveness and Efficiency

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Abstract

The COVID-19 pandemic has had a significant impact on the Thai economy, leading the government to implement economic stimulus measures to assist those affected. One of these measures is the Let's Go Halves Program, which focuses on a co-payment system between the government and the public while also supporting small entrepreneurs. This research aims to qualitatively investigate the effectiveness and efficiency of the program, as well as identify any problems encountered during its implementation from 2020 to 2021. The study also provides recommendations for future improvements to similar program. To gather opinions, ten open-ended interviews were conducted and analyzed comparatively with governmental documents. This research found that the scheme is based on the concept of the multiplier effect, in which stimulating demand factors generate purchasing power that leads to other economic activities. Additionally, the study examined six similar economic stimulus policies from different countries and found that the Let's Go Halves Program addressed common issues such as people using government subsidies as savings and government assistance not reaching small entrepreneurs. From 2020 to 2021, this program was found to be an effective economic stimulus policy, despite challenges with program accessibility, technical compatibility, inequity in program participation, and program transparency that require attention.

Keywords: *Let's Go Halves Program; 50-50 Co-payment; effectiveness; efficiency; public policy analysis; Covid-19 economic impact*

1. Introduction

The coronavirus epidemic has harmed the social, economic, political, and personal lives of several hundred million individuals since it first emerged in 2019. As an airborne virus, it has rapidly become a pandemic that is challenging to handle (Tang, Marr, Li, and Dancer, 2021). The global spread of the COVID-19 pandemic has had an impact on international trade, with border restrictions and travel prohibitions disrupting tourism. In 2020 alone, millions of people faced mass unemployment, prompting governments to implement significant stimulus measures to avoid a devastating economic crisis. Following the reduction in working hours for the majority of people, there was a general drop in income, affecting the livelihoods of low-income workers. Given the pandemic's global-scale impacts, the consequences are far worse than those of the Tom Yum Kung Crisis or Hamburger Crisis. Policymakers must accelerate the development of various measures to deal with the economic crisis and control the COVID-19 pandemic.

Since the first day of verified COVID-19 cases outside of China on January 13, 2020, Thailand has been experiencing the adverse impacts of the outbreak (Marome, & Shaw, 2021). The number of cases in the country continued to rise, however, within a manageable range, until mid-March 2020, when the number of patients drastically increased. Public areas and businesses in Bangkok and other provinces were ordered to close by the end of March 2020 (Yongjiranon, 2020). The government's precautionary measures included restricted travel, closure of airports, implementation of social distancing measures, closure of commercial areas, and suspension of economic activities.

In 2020, Mahidol University and Oxford University conducted an online survey -- *Economic and Social Impacts of COVID-19 and Public Health Measures* -- in Thailand, Malaysia, the UK, Italy, and Slovenia (Osterrieder et al., 2020). According to their findings, among those five countries, Thailand was the most economically impacted by the pandemic. The survey revealed that 85% of Thai respondents experienced a loss of income. Meanwhile, 50% of respondents had their working hours reduced as a result of their firms

being forced to temporarily close because of governmental precautionary measures. After the outbreak of the epidemic, 23% of Thai respondents said that they lost their jobs. Thailand accounted for 1,476 responses, or 29% of all respondents. In Thailand, those with a primary or secondary education were the most affected, with 90% reporting a loss of wages, 24% reporting a job loss, and 89% reporting financial difficulties. The survey also found that people in Thailand who work in the tourist industry and in private companies are the most affected. Furthermore, data indicates that Thailand is one of the countries with the strictest public health regulations. However, this study captured Thai respondents' negative views and perceptions of the socioeconomic impact of COVID-19 public health measures such as border closures and curfews, which all have direct impacts on informal businesses such as street food restaurants and tourism organizations, resulting in lost income, retrenchments, and closures. In addition, this research reveals that Thailand is the country with the strictest COVID-19 measures. Because Thailand is the country that has been severely impacted by the pandemic, it is noteworthy to examine how the Thai government addresses both economic issues and disease prevention.

As a result of the COVID-19 epidemic and other precautionary measures, the economy has suffered. Thailand's GDP is expected to fall by 2.5% by 2020 (Covid slams Thai economy, 2021). The spread of the coronavirus has had significant economic and social impacts on Thailand, both regionally and provincially. The deterioration of Thailand's economy can be seen in the stagnation of tourism and related sectors. The number of international tourists has significantly decreased, and lockdowns occur more than three times annually. The unemployment rate has surged, and people will undoubtedly be affected by the economic crisis. The unemployment rate increased to 1.03% in the first quarter of 2020, with approximately 400,000 people unemployed (Covid slams Thai economy, 2021). Consequently, the coronavirus epidemic has had a significant impact on the travel, hotel, and restaurant industries due to the virus's ability to spread through the air, effectively damaging tourism, hotel, and restaurant activities.

At the micro level, an increase in the number of jobless individuals has an impact on people's spending power, which directly affects Small and Medium Businesses. Small and Medium Enterprises Promotion has indicated that due to the impact of COVID-19, the overall economic assessment for Small and Medium Enterprises in the first quarter of 2021 is likely to be negative 4.8%, up from the prior prediction of negative 2-2.4%. In the first quarter of 2021, there were around 20,000 foreclosures (KrungSri Research, 2021).

After the lockdown restrictions were eased, the Thai economy shifted, and there was a disparity in the rate of economic activity recovery. However, because the economic recovery will take time, many industries will not rebound in terms of orders and functional status. In such a circumstance, economic policy would need to cover a massive area to rebuild the affected individuals and provide financial liquidity. Therefore, it is the duty of the government to enhance financial liquidity for those with purchasing power. The Thai government has launched a variety of relief programs to assist in reducing the economic impact on people. Among the other economic aid programs, the Let's Go Halves Program has been in operation for the longest time, and it is a policy that emphasizes assisting regular people, either as entrepreneurs or as consumers, which is different from other policies that only provide provisions for affected individuals in a specific group.

The Let's Go Halves Program, the 50-50 Co-Payment, or the so-called Kon La Khreung, is also one of the government's economic assistance programs. The Let's Go Halves Program is an initiative that tries to rebuild the economy from the ground up. The target group is small business owners, particularly hawker groups and stalls, with the goal of assisting them in increasing their revenue from product sales. To encourage individuals to spend money, the government would cover 50% of the cost of meals, beverages, and other items, but not more than 150 Baht (\$4.46) per person every day. This project intends to minimize people's spending burdens and assist them in enhancing their purchasing power so that their money may go to small businesses. In 2020-2021, the Let's Go Halves Program was divided into three periods. The program was authorized in October 2020, and public engagement continued until October 31, 2022. The program's third term terminated in December 2021 (Ministry of Finance, 2020). The fourth phase was launched in February 2022, while the fifth phase started in September and ended in October 2022.

1.1 Definition

Policy effectiveness is measured by its outcomes. If a policy successfully addresses a problem and achieves its objectives, then it is considered effective. In this research, policy effectiveness is defined as the financial support received from the government that can help reduce the economic impact of the COVID-19 outbreak on entrepreneurs and consumers, as well as stimulate consumer spending.

Policy efficiency is defined as the amount spent by program participants that exceeds the government budget during the implementation of the program from October 2020 to October 2022.

1.2 Let's Go Halves Program

The Let's Go Halves Program is a government initiative aimed at boosting domestic spending, reducing costs for the public, and increasing liquidity for small merchants across the country. This project is designed to support those affected by the COVID-19 pandemic, including the general public and small retailers. The program is operated by two application systems called "Paotang" (wallet) on the customer side and "Tung Ngen" (money bag) on the merchant side, respectively. These applications increase the convenience of shopping and alleviate concerns about germ exposure from cash.

The Paotang and Tung Ngen applications were created by the government in collaboration with Krung Thai Bank and can be used in conjunction with various government projects. The word "Paotang" can be translated literally as a wallet, which refers to an online or e-wallet. After the COVID-19 pandemic, the move towards a cashless society has become increasingly popular. Although the rate of transmission of COVID-19 through coins or banknotes is low (Todt et al., 2021), many people still worry and avoid using cash. The applications were also designed to serve the expansion of a cashless society. For the Let's Go Halves Program, participants must make payment for goods and services through the Paotang application, while the Tung Ngen application is used by entrepreneurs to receive payment from customers.

The government approved a total amount of 30 billion Baht (\$8.91 billion) for the first phase of the Let's Go Halves Program and began allowing people to use the program from October 23, 2020 onwards. Initially, this policy was implemented in three phases from 2020 to 2021, as shown in Table 1. Following the completion of the third phase, the project was halted for one month in January 2022. The government then resumed the fourth phase of the policy, which operated from February 1, 2022, to April 30, 2022. Participants in this round received a grant of 1,200 Baht (\$35.64) per person. The fifth phase was launched in September 2022 with an 800-Baht cash handout.

Table 1 Details of Let's Go Halves Program

Phase number	Implementation period	Money granted per person	Number of participants
First phase	October - December 2020	3,000 Baht (\$89)	10 million participants
Second phase	January – March 2021	3,500 Baht (\$104)	15 million participants
Third phase	July – December 2021	4,500 Baht (\$134)	28 million participants
Fourth phase	February – April 2022	1,200 Baht (\$36)	25 million participants
Fifth phase	September – October 2022	800 Baht (\$24)	23 million participants

Participants, both citizens and entrepreneurs, need smartphones to participate in the project, as it encourages people to learn how to use technology and adapt to the new way of life under the COVID-19 epidemic, also known as the new normal. This initiative will promote the development of Thai society and move it towards becoming a digital society. The project is similar to the British Eat Out to Help Out Program launched by the UK government, where people can use the program at participating restaurants and receive a 50% discount on food costs, but the spending amount must not exceed £10 (approximately 400 Baht).

In the third phase of the project, the Thai government expanded eligibility for the program by allowing food and beverage operators to sell food and beverages through food delivery platforms. At the beginning, only Grab Taxi (Thailand) and LINE Man Corporation participated in the project as food delivery platform service providers.

After the first phase of program implementation, several problems occurred as various entrepreneurs and customers reported their complaints to the Ministry of Finance. The most common problems were due to

unclear communication regarding program registration, as well as insufficient technological support. Participants were unable to access the application, were denied the right to use it, or encountered problems in verifying their identity during the registration process.

In the second phase, the above problems were solved, and new problems emerged. There were issues with merchants and project participants cheating in the project. Some merchants transferred money to people who used the Paotang application directly via mobile banking, ATM, and cash, without buying and selling products but directly receiving money (Co-payment scheme frauds, 2020). When the project entered the third phase, there was a change with the participation of food delivery platforms, which caused new problems for the program, such as order cancellations and system crashes. The examination and assessment of the Thai government's Let's Go Halves Program and the problems encountered during its execution will be beneficial in planning Thailand's future policies to face any new crises.

1.2.1 Let's Go Halves Program and Theory of Keynesian Economics

In this research, the theory of political economics is referenced in policy design. It has been found that the concept of Keynesian Economics can be applied in the policy design of the Let's Go Halves Program. Several economic and social development plans have been influenced by Keynesian conceptual and theoretical advancements. This theory underlies the launch of several stimulus policies to mitigate the economic impact of the COVID-19 pandemic, including the People's Republic of China's Triple Stimulus Vouchers in 2020, the United States' Coronavirus Aid, Relief, and Economic Security Act and American Rescue Plan Act of 2021, the United Kingdom's Eat out to Help Out, and the Let's Go Halves Program.

Tily and Keynes (2007) described Keynesian Economics as a macroeconomic theory that combines the analysis of the real economy and the money economy into the same theoretical framework. It proposes the principle of demand effect in determining the production of national income and employment. To rectify or prevent a recession, Keynesians emphasize the need for active government actions to regulate aggregate demand. Rather than depending on the private or corporate sectors to expand economic activity, governments are the major actor in policy-making for essential spending to enhance GDP growth.

Keynes believes in a system of 'multiplier effect', which stimulates demand factors to generate people's purchasing power that will lead to other continuing economic activities such as employment and resource investment (McConnell, Brue, & Flynn, 2018). For example, a government stimulus package will lead to more business activities and thus more spending. Keynes's idea is counterintuitive to Classical economics, which suggests that markets will recover naturally after a recession. According to Keynesian theory, the price of products are sticky and unable to adjust quickly enough to basic economic variables, resulting in a product market that is not always in equilibrium. Therefore, the government has to assist in improving the efficiency of free market resource allocation.

Keynesians believe that if humans are psychologically exposed to income uncertainty due to forecasts of worsening economic conditions (Almeida, & Curado, 2019), the beginning of an economic recession will occur. Humans save money to cover the risk of economic uncertainty when they have a psychological sense of it. In the case of consumers, this may imply cost-cutting in everyday life, such as lowering the quantity of consumer items or seeking a lower-cost alternative product and avoiding purchasing high-priced assets. In the context of business, manufacturers will cease to increase their investment to save money, decrease output, reduce raw material purchases, and dismiss personnel. As a result, those who are unemployed will reduce their own spending, lowering demand for various items and increasing the pace of redundancies. This circle is called a Vicious Cycle.

In the Vicious Cycle, the consumer is the main player in boosting the economy. In the case that insecurity prohibits consumers from spending money on continuing activities that aid in expansion, the government's desired outcome may not occur. Despite the government's efforts to ease monetary policy to help decrease business expenses for entrepreneurs and encourage them to make greater investments, firms will lose money and eventually cease investing if there is no consumer demand. In this situation, the government should intervene to directly boost spending by promising free money to the unemployed or those who are expected to spend money in the near future. Such policies will increase expenditure and lead to additional activities that will aid in the growth of the economy (Bui, Dräger, Hayo, & Nghiem, 2022).

1.2.2 Let's Go Halves Program and similar economic stimulus policies

Recently, research related to the economic stimulus policies in response to the coronavirus outbreak in various countries has been conducted. This research analyzed the Let's Go Halves Program by investigating policies such as the United States' stimulus payments policy, Japan's COVID-19 unconditional cash transfer program, South Korean stimulus checks policy, Taiwan consumption voucher program, Iran emergency loans, and British Eat out to Help out. The studies on stimulus package during the pandemic in other countries provide a mixed picture as multiplier effect did not increase across all sectors in some countries. In the case of Thailand, the recent studies on the impact of the Let's Go Halves Program have also shown the mixed results of both successful and unsuccessful outcomes.

Research conducted by the USA National Bureau of Economic Research examined the causal effects of initiatives aimed at reducing the negative effects of COVID-19 by studying the effects of The Coronavirus Aid, Relief, and Economic Security (CARES) Act, which was implemented shortly after the crisis emerged in an attempt to disrupt the sequence of events and decrease economic losses. It was found that 72% of stimulus payments were directly deposited rather than spent on consuming goods and services. Consumption of durable items increased by 21% after receiving the stimulus payment, whereas spending on in-person services increased by just 7%. Durable goods accounted for 44% of the increase in consumer expenditure. As a result, the stimulus increased total spending without redistributing funds to firms that suffered the largest income losses as a result of the COVID shock (Chetty, Friedman, & Stepner, 2020).

Among the fiscal stimulus payment policies adopted by several countries, Japan's policy is comparable to the United States' stimulus payments policy (Yuktadatta, Ono, Khan, & Kadoya, 2022). Both policies pay directly to their citizens only once. A study entitled Satisfaction with the COVID-19 Economic Stimulus Policy: A Study of the Special Cash Payment Policy for Residents of Japan investigated the economic stimulus policy in Japan. According to this study, people were generally dissatisfied with the one-time cash payment policy. A one-time aid payment makes them feel insecure about the future economic situation and they are more likely to save money rather than spend it. Meanwhile, higher-income households are more likely to save the cash subsidies received, while lower-income households are more likely to spend cash subsidies on daily expenses. This is in contrast with research from South Korea, which stated that there is no strong evidence that the propensity to increase spending due to vouchers is larger among low-income earners (Kim, & Lee, 2021). However, both studies show that different people respond differently to cash transfers. Therefore, the study by Kim, & Lee (2021) showed similar findings to those of Lin, & Chen (2020) and Chetty et al. (2020) that the government should consider improving future cash payment policies based on the needs of different groups. The effects of Japan's COVID-19 unconditional cash transfer program on household consumption were also reported, showing an instantaneous rise in household spending following the stimulus payment. Following the initial increase, these consumption indicators steadily dropped (Kaneda, Kubota, & Tanaka, 2021).

In the context of Taiwan's consumption voucher program, Lin, & Chen (2020) found evidence that goes against the Keynesian absolute income hypothesis, which suggests that any increase in income will have a positive impact on consumption. Their research shows that consumers will not change their consumption in response to a temporary change in their income. Their findings suggest that increasing the ratio of the number of coupons gained from customers' purchases to their out-of-pocket payments for goods and services would maximize the actual income effect.

Hoseini, & Beck (2020) also found the same problem with emergency loans in Iran, where the effects were strongest in the first few days and then dissipated over time. Similar results were found in research that assessed the effects of consumption vouchers by surveying 2,000 households in South Korea. It found that over 30% of households across all income categories raised their food and overall household expenditure as a result of the program. While small business employment and sales increased, the effects were not statistically significant at conventional levels (Kim, & Lee, 2021). Their studies also suggest that the program may harm consumer welfare and economic efficiency in the long run and the program's budgetary viability is still in doubt due to the significant tax exemption, which requires further analysis of its impact on fiscal balance and sustainability.

Among various fiscal stimulus policies, the British Eat out to Help Out is the closest policy to the Let's Go Halves Program. There are few papers discussing the effectiveness of the British Eat Out to Help

Out (EOTHO). Recovering from the First COVID-19 Lockdown: Economic Impacts of the UK's Eat Out to Help Out Program is one such paper. This research shows that the program failed to encourage people to go out for other purposes or to eat out after the discount ended. The research also pointed out that the increase in footfall due to EOTHO had an adverse effect on new COVID-19 cases. Thus, any economic gains from the program may have come at the cost of more infections (Pampillón, Chaim, & Ziegler, 2021).

Another researcher proposed an idea regarding Keynesian supply shocks and suggested providing full insurance payouts to affected employees who can accomplish the first-best allocation (Guerrieri, Lorenzoni, Straub, & Werning, 2020). When consumer spending is constrained by health concerns, stimulating aggregate demand or providing liquidity to businesses has a lower capacity to restore employment. According to this study, during a pandemic, it may be more fruitful to mitigate economic hardship through social insurance. They stated that traditional fiscal stimulus might be less successful than normal since the multiplier feedback is suppressed when some sectors are shut down.

Regarding the Let's Go Halves Program, there are few studies regarding its outcome. Although research conducted by the Kasikorn Research Center (2020) showed the public's positive response to the project, more than half of the respondents were willing to spend the full 3,000 Baht (\$89) as state-sponsored, but only 44% of the respondents planned to spend more than the amount they would spend without the stimulus. As suggested by the research, the Let's Go Halves Program is unlikely to motivate Thais to spend more money on products and services, resulting in the program's inadequacy to accelerate Thai economic growth.

The research entitled *The Satisfaction Factors Affecting the Effectiveness of the 50-50 Co-Payment Program of the Government for the Beneficiaries* found that the project slightly stimulated the Thai economy but greatly decreased the burden of daily expenses of low-income Thais (Boonmak, 2021). In this research, further improvements were suggested in terms of user satisfaction. Another survey from the Bangkok University Research Center reflected that the vendors in Bangkok and surrounding provinces who joined the program believed that this project helped stimulate the economy. According to their survey results, more than 60% of respondents believed the project would have a positive impact on the economy, while 90% of respondents said they would like to participate in the project again in the future.

The mixed results of stimulus measures in other countries, as well as in the case of Thailand, suggest that additional studies are needed to fully understand their impact. This raises important questions that require further examination. This study, therefore, will evaluate the effectiveness of the Let's Go Halves Program by examining its ability to mitigate the adverse effects of COVID-19 on both entrepreneurs and consumers and access how much the policy can stimulate spending. Moreover, the study assumes that the Let's Go Halves Program is efficient if it can incentivize participants to spend more than the allocated government budget.

2. Objectives

- 1) To evaluate the effectiveness and efficiency of the Let's Go Halves Program.
- 2) To investigate any issues encountered during the implementation of the Let's Go Halves Program.
- 3) To suggest recommendations for improving the implementation of future stimulus policies.

3. Methods

This study is qualitative in nature and aims to investigate the effectiveness and efficiency of the Let's Go Halves Program during the period of 2020-2021. The primary sources for this research will mainly consist of governmental documents, while the information gathered from interviews will serve as supplementary data. Secondary sources will include statistics and information from reputable research institutes in Thailand, media reports, previous research, textbooks, and journal articles. The study will focus exclusively on the outcomes of policies implemented during phase one through phase three of the Let's Go Halves Program.

3.1 Data Collection

The data, figures, and information collected for this research were primarily sourced from the government's official messages, announcements, and documents, as well as articles and reports from relevant governmental agencies. The governmental documents collected for this research were mainly published by the Minister of Finance of Thailand. For example, the Minister of Finance's press releases regularly reported

the statistical progress of the Let's Go Halves Program. The researcher also studied the Statistic Database collected from the Fiscal Policy Office, Minister of Finance of Thailand. These data were analyzed to evaluate the effectiveness and efficiency of the Let's Go Halves Program during the period of October 2020 to December 2021.

To identify any issues that occurred during the implementation of the Let's Go Halves Program, the researcher conducted open-ended interviews to gather the opinions of program participants. All interviews were conducted between February 1, 2022 and April 1, 2022.

3.2 Participants

Ten participants were interviewed for this research study, and they can be divided into three groups.

The first group consists of two Krungthai Bank tellers. Krungthai Bank is responsible for both applications, Paotang (wallet) and Tung Ngen (money bag), which are required for the Program's operation. Both interviewees from Krungthai Bank work in the customer service department and have experience in providing customer service related to the use of these apps.

The second group consists of six Thai citizens who participated in the Let's Go Halves Program from 2020 to 2021.

The third group consists of two entrepreneurs who registered for the Let's Go Halves Program and never withdrew from the program. The researcher selected interviewees who lived in the Bangkok Metropolitan Region only, as Bangkok has the highest spending on projects.

To maintain confidentiality, all participants' identities have been kept anonymous. The researcher will use the letters below to represent each group of participants in the study:

Letter A will represent the participants from Krungthai Bank.

Letter B will represent the consumers who participated in the program.

Letter C will represent the entrepreneurs who participated in the program.

Participants' information is shown in Table 2.

Table 2 Participants' Information

Participants	Gender	Age	Occupation	Monthly income/Baht	Residency
A1	female	37	Bank Teller	15,000 (\$445)	Samut Prakan
A2	female	43	Bank Teller	17,000 (\$505)	Samut Prakan
B1	male	22	University Student	5,000 (\$149)	Nakhon Pathom
B2	female	25	Product coordinator	22,000 (\$653)	Bangkok
B3	male	24	Medical technician	20,000 (\$594)	Samut Prakan
B4	male	49	School bus driver	10,000 (\$297)	Samut Prakan
B5	female	52	Primary school teacher	19,000 (\$564)	Samut Prakan
B6	female	55	Accountant executive	50,500 (\$1,500)	Samut Prakan
C1	male	32	Grocery store owner	30,000 (\$891)	Samut Prakan
C2	female	28	Beverage entrepreneur	20,000 (\$653)	Pathum Thani

The criteria for selecting interviewees in the second and third group were based on their provinces, community areas, and occupations. The researcher aimed to gather data from participants of various professions to obtain the most comprehensive perspective on the policy outcomes. C1 and C2 participants were selected because they are entrepreneurs from different industries and provinces. Choosing entrepreneurs with different businesses and locations allowed for a more complete analysis of the effects of the Let's Go Halves Program.

3.3 Limitation

As this research is being carried out during the COVID-19 outbreak in Thailand, the interviews were conducted mainly via telephone and online meetings. All interviewees were required to sign a document consenting to provide information during the interview. Some interviewees refused to have their voices recorded during the interview and instead required the researcher to take notes of the information they

provided. One participant in Group A declined to provide information related to the bank's internal operations. Additionally, participants in Group C also declined to provide tax-related information. Before starting any interviews, the researcher thoroughly explained to all participants their roles and how their personal data would be protected.

4. Results

Since the first phase, the number of individuals participating in the program has gradually expanded. The proportion of people who took part in the third phase was more than one-third of those who participated in the first phase. The number of people signing up for the program has continued to rise. As shown in Figure 1, the rate of public engagement in the program has clearly continued to increase. The participation percentage of entrepreneurs grew only slightly when the government approved food and beverage operators to sell items through food delivery services.

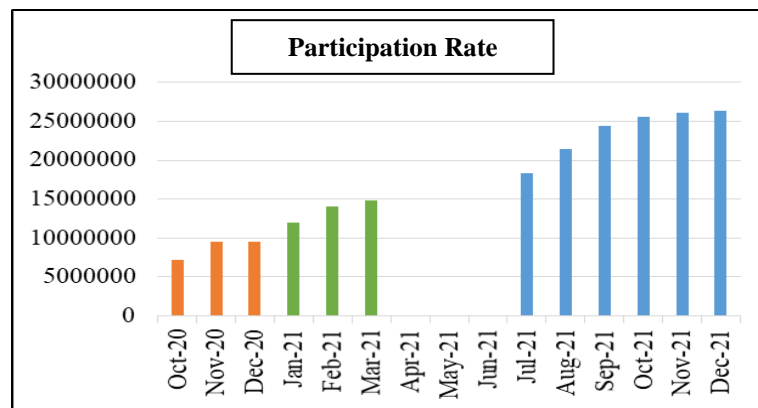


Figure 1 Participation rate of Let's Go Halves Program in 2020-2021

The participation rate in the program peaks at the beginning of the third month of each phase, and after that, it slightly increases. In this project, participants can be divided into two categories as follows:

- The first category includes those who registered for the program, passed the eligibility check, but did not make any transactions through the program.
- The second category includes those who registered for the program, passed the eligibility check, and made transactions through the program.

The number of people who made transactions through the program accounted for 94% of those who were granted rights. The participating stores can be divided into five categories, mainly food and beverage outlets. Among the five categories, food and beverage shops, as well as Pracharat Blue Flag retailers, have the greatest sales, as shown in Figure 2.

This suggests that individuals have spent the money they received from the government on necessities of life. This implies that the money was used in accordance with the policy objectives. The items purchased via the project are influenced by various age groups. People in the working age group prefer to purchase food and beverages for their everyday life. The elderly prefer to purchase consumer products for storage, such as rice, eggs, detergent, and so on, while adolescents prefer to purchase items that they desire, such as clothing or accessories.

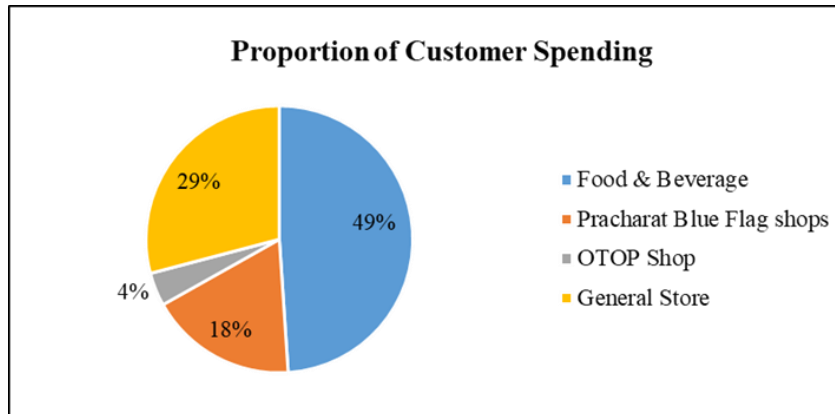


Figure 2 Proportion of Customer Spending of Let's Go Halves Program in 2020-2021

The top 10 provinces that spent the most on projects were Bangkok, Songkhla, Nakhon Si Thammarat, Surat Thani, Chiang Mai, Chonburi, Nonthaburi, Samut Prakan, Nakhon Ratchasima, and Pathum Thani. These provinces are densely populated and are characterized by high communal characteristics and a high number of small shops. They are considered the areas that have been most affected by COVID-19, resulting in high expenditures in the Let's Go Halves Program.

4.1 Problems occurred during the first phase of policy implementation

The first phase of the program's implementation began in October 2020, after the approval of a total budget of 30 billion Baht (\$891 million).

Table 3 Policy implementation of the Let's Go Halves Program in the first phase

Date	Policy Progress
1 October 2020	Entrepreneur registration begins.
14 October 2020	Entrepreneur registration reaches full capacity.
16 October 2020	Consumer registration begins.
23 October 2020	Program transactions commence.
28 October 2020	Consumer registration reaches full capacity.
11 November 2020	Consumer registration reopens.
31 December 2020	First phase of Program terminates.

Table 3 shows that registration for the program opened twice during the first phase of the policy. During this phase, the government limited participation in the program to 10 million people. Those who wished to participate needed to request approval and have their qualifications reviewed before being selected. Once participants' eligibility was verified, registration reopened. Restrictions were in place to prevent abuse of the program alongside other government assistance initiatives. During the first phase, the most common problem was registration. Participants B4, B5, and B6, who were over 40, reported difficulties registering, especially elderly individuals who lacked technological knowledge. Identity verification was the most challenging part of the registration process. B5 stated that transferring funds into an e-wallet was extremely confusing.

"At first, I couldn't use the Paotang application at all. Since I didn't have a mobile banking application, I had to deal with many banks to use this application. I think financial aid should be given as cash to make it easier for the elderly to use. It's really inconvenient for seniors like me to keep up with technology" (B5 interviewee, personal communication, April 23, 2022).

Inadequate publicity about the project was another significant issue during the first phase, as reported by B4.

"It was confusing at first. I didn't quite understand how to add money to the application. It was also difficult to register, and I had to wait in line at the bank for a very long time" (B4 interviewee, personal communication, April 5, 2022).

In the first month of registration, the number of people accessing bank services increased significantly, causing disruptions for bank staff. Participants in group A believed that the identity verification process was an unnecessary burden for the bank, which had to set up a special service counter for program registration. People rushed to register because they were concerned about not being able to join the program due to participation limitations. Participant C1 reported that many customers did not understand how to use the Paotang application.

"During the first phase, I had to tell and teach each customer how to top up money into the app. Some customers had to wait for a long time or couldn't use the application at all, so they ended up not buying anything. Sometimes, the app crashes and I lose customers because they won't buy any product unless they receive a discount under this program" (C1 interviewee, personal communication, February 13, 2022).

Many customers also reported that they did not realize they had to transfer money to their e-wallet in order to make transactions. Additionally, the transaction system frequently crashed, causing some customers to refuse to buy products at that time. As a result, there were clearly fewer customers during system outages.

4.2 Problems occurred during the second phase of policy implementation

The second phase of the Program began in December 2020, and as shown in Table 4, it continued seamlessly from the first phase due to the overwhelming response from individuals interested in participating. Despite the high number of sign-ups, the government remained selective in choosing program participants, prioritizing those who had been severely affected by the COVID-19 pandemic. The government reopened registration on January 20, 2021, as indicated in Table 4 (Ministry of Finance, 2020).

Table 4 Policy implementation of the Let's Go Halves Program in the second phase

Date	Policy Progress
8 December 2020	Entrepreneur registration begins.
16 December 2020	Consumer registration begins.
1 January 2021	Program transactions commence.
20 January 2021	Consumer registration reopens.
31 March 2021	Second phase of Program terminates.

In the second phase, the Let's Go Halves Program divided participation into two groups. The first group consisted of the 10 million former participants who received additional support with a limit of 500 Baht (\$15) per person. When combined with the former credit limit of 3,000 Baht (\$89), this amounted to a total grant of 3,500 Baht (\$104). The second group consisted of the newly registered 5 million people who were entitled to financial support of 3,500 Baht per person (Ministry of Finance, 2020).

According to the interview, the majority of issues in the second phase were related to technological constraints. Participants B1, B2, and B3 were often unable to pay for their items due to location restrictions within the Paotang application. For example, B1 explained that he could not pay for food while using the application outside his residency area. Additionally, system crashes continued to occur regularly. Group B participants also expressed feeling constrained in their purchasing options because many retailers were unavailable in the program, as entrepreneurs had to wait for bank and government confirmation to join the program. During the interview, B1 participant commented that, "I wish there were more stores to choose from. It seems that we are limited to only buying food. Other necessities rarely participate in the program" (B1 interviewee, personal communication, April 19, 2022).

Registration issues that occurred in the first phase were significantly reduced for Group A participants, and the government solution satisfied them. Participants in Group C were also satisfied with the second phase, claiming that store sales had improved since the project's initiation. The response from entrepreneurs to this project was positive, as shown in Figure 3, which indicates that the program increased sales for over 80% of the entrepreneurs.



Figure 3 Bangkok Poll: Entrepreneurs' Opinions on the Let's Go Halves Program

Note: The figure is created by the Research Institute of Bangkok University and the information is also gathered by Research Institute of Bangkok University. (Bangkok Poll, 2020)

Despite the positive impact of the program, entrepreneurs are still experiencing difficulties collecting payments on time, which can lead to establishments running out of funds to purchase raw materials and sell items on specific days. The money that merchandisers receive is divided into two parts under the program. If they don't take any days off, consumer funds will be transferred to their accounts at 2:00 a.m. on the following day. However, if they take weekends off, government contributions will be deposited to their accounts at 4:00 p.m. on the following day. Consequently, funds from Friday sales will not be paid to their accounts until Monday at 4:00 p.m., which could potentially cause the issues mentioned above.

4.3 Problems occurred during the third phase of policy implementation

The third phase began in June 2021, two months after the second phase. The payment terms were divided into two periods in the third phase. In July 2021, the Thai government provided a 1,500-Baht (\$44.5) subsidy per person for the first period, and another 1,500-Baht subsidy per person was given in October 2021 for the second period. However, on October 19, 2021, the government changed the payment conditions and decided to pay 3,000 Baht at once instead of 1,500 Baht twice. The payment plan and policy progress are presented in Table 5 below.

Table 5 Policy implementation of Let's Go Halves Program in the third phase

Date	Policy Progress
14 June 2021	Consumer registration begins.
1 July 2021	Program transactions commence.
21 September 2021	The number of eligible participants declines.
3 October 2021	Food delivery platform joins the Program.
19 October 2021	The state co-payment is limited to 1,500 baht per person.
31 December 2021	The third phase of program terminates.

The change in the payment plan was announced on October 19, 2021, after the number of eligible participants had reduced from 31 million to 28 million on September 21, 2021, as the Ministry of Finance had found less public interest in the project. In the third phase, food and beverage operators could sell their products through the food delivery platform of the service providers, which was a new feature of the program aimed at encouraging individuals to utilize the subsidy.

Although some problems from the first and second phases were partially resolved in this phase, many continued to experience issues with registration and privilege restrictions. The biggest issue was the inconsistency of the registration procedure, as some registrants did not receive an OTP, which prevented them from participating in the program in a timely manner. The limitation of the number of participants was another challenge, and the Fiscal Policy Office emphasized that a portion of the money used to support the project came from COVID-19 relief loans. As a result, the amount of money that could be released into the system was limited, and the distribution of resources had to be carefully considered.

People who participated in the previous phases of the program were quite pleased with the third phase. Interviewees in all three groups gave identical answers, stating that they found the third phase to be the most satisfying. Compared to the first two phases, the third phase experienced comparatively fewer obstacles. Furthermore, the brief respite between the second and third phases allowed for performance improvements and gave customers time to recover their purchasing power. The approval of food and beverage sales via the food delivery platform, according to participant C2, also attracted more customers.

"Since joining the program, I have seen an increase in sales. Instead of buying just one item, customers are now purchasing more, and I have gained new customers. When people know that we have participated in this project, they come to use their rights at our shop every day" (C2 interviewee, personal communication, February 13, 2022).

In terms of public opinion during the third phase, there was a clearly positive response from the participants. As illustrated in Figure 4, 67.4% of people expressed a desire to join the program in the future, and nearly 70% indicated that they wanted the program to continue until the end of the pandemic.



Figure 4 Bangkok Poll: Opinions of Thai People on the Let's Go Halves Program's's Forth Phase

Note: The figure is created by the Research Institute of Bangkok University and the information is also gathered by Research Institute of Bangkok University. (Bangkok Poll, 2021)

5. Discussions

The Let's Go Halves Program is a 27-month-long economic stimulus project with a possibility of extension in the future. Similar to other economic stimulus programs, the project addresses the issue of the limited lasting effects of such programs. In other countries that launched similar programs, individuals were incentivized to spend their money only a week or two after the implementation of the program. This is mainly because individuals had concerns about the continuation of government support. Additionally, by implementing stimulus packages, the government must be watchful of possible inflation and the increasing number of COVID-19 cases that may arise as a result of expanding economic activities. In many cases, people may spend the provided money on imported products rather than local products.

Despite the issues that arose throughout the project's execution, the government, the Ministry of Finance, and Krung Thai Bank worked tirelessly to resolve them. For instance, when the registration issue arose in the first phase, the project stakeholders attempted to resolve the issue by allowing authentication through ATM. This solution facilitated registration and resolved the issue. In the second phase, there were issues with limited choices for entrepreneurs and products available under the program. Therefore, in the third phase, the government changed the eligibility conditions to allow more retailers to join the project and provided more alternatives for consumers. To address the issue of retailers getting late payments, the Ministry of Finance and Krung Thai Bank modernized their systems, allowing entrepreneurs to get funds more quickly. The government's continual and steady development indicates its efforts to develop this program to provide satisfaction and convenience to the public, as well as the government's attention to public opinion.

Despite these efforts, challenges remain. It is crucial to monitor the program's effectiveness continuously, particularly in terms of its impact on inflation, the COVID-19 situation, and the local economy. The government must also work to ensure that the funds are spent on local products to boost the economy. Overall, the Let's Go Halves Program is a promising project that, with continued refinement, has the potential to provide long-term benefits to the economy and society.

5.1 Economic effectiveness of the Let's Go Halves Program

The Let's Go Halves Program has had a significant impact on the economy by providing support to Thais who have suffered financial losses due to the pandemic. The program has reduced the financial burden on people and encouraged them to spend more, which has increased consumer confidence in the country. The Consumer Confidence Index study for November 2020 showed a steady increase in consumer confidence, reaching the highest level since March 2020 (The Center for Economic and Business Forecasting University of the Thai Chamber, 2020).

The main focus of this study is on the goal-oriented approach to project analysis and measurement. From this perspective, the Let's Go Halves Program has achieved the objectives set by the government. It has reduced the negative impact of the pandemic on entrepreneurs and consumers, which was the project's primary goal. Additionally, it has encouraged people to use their money to build liquidity during the economic downturn caused by the coronavirus pandemic, which was the secondary goal.

According to the interviews conducted for this study, participants reported that the program has helped to alleviate the economic impact of the coronavirus pandemic. The government funds have been used to purchase everyday essentials that would have been difficult to acquire without the program's assistance. This project has reduced the financial burden of daily living expenses for the people. Figure 2 indicates that 49% of the funds received from this program were spent on food and beverages, while 29% were spent on general stores. This suggests that participants in this program used the financial aid to purchase essential goods. Spending at the Pracharat Blue Flags shops, which sell low-cost items such as consumer products, educational items, and agricultural products, ranked third in the spending continuum.

According to Keynesian theory, the Let's Go Halves Program aims to provide individuals in the midst of the coronavirus outbreak with at least 300 Baht (\$15) per day from the government, giving them the confidence to spend money on their everyday needs. The total economic sentiment index increased to 45.6, supporting Keynes' hypothesis that people become more optimistic about the economy when they are supported by the government, which encourages them to spend more money. Following the implementation of the project, Thai people are more confident in their financial status and more willing to spend money, as evidenced by the rising Consumer Confidence Index. As Keynes mentioned, the multiplier effect has a massive influence. When consumers have more confidence in the economy, they spend more money, which

generates revenue for entrepreneurs and leads to more investment and employment. The Let's Go Halves Program has also prompted the retail operator confidence index to rise in October-November, reflecting merchants' confidence in the improving economy and the declining trend in small business closures.

Furthermore, the Let's Go Halves Program also addresses common problems encountered in foreign economic stimulus policies, as shown in Table 6. In terms of entrepreneurs, this project aims to assist SMEs by preventing conglomerates from participating in the program. This allows small company owners, such as hawker stalls, to continue operating despite the economic downturn, which may promote investment and strengthen the economy in the long run. The program focuses on project outcomes at restaurants, beverages, OTOP items, general retail, and hawker stalls. Only micro-enterprises are eligible to participate in the program, ensuring that individuals who are impacted by the economic burden of the coronavirus are alleviated.

Table 6 Common problems found in economic stimulus policy of foreign countries

Countries	USA	Taiwan	Japan	Iran	South Korea	UK	Thailand
Common Problems	Found in						
Get short term results	✓	✓	✓	✓	✓	✓	-
Money grant go to deposit	✓	-	✓	-	✓	-	-
Government assistance does not reach SMEs	✓	-	✓	-	-	-	-

Unlike the policies of many countries that encourage consumers to subsidize major outlets, small businesses are not affected by economic impact mitigation programs. For example, the CARES Act of the USA resulted in redistributing government assistance funds to large firms rather than SMEs that were affected by the pandemic and the government's preventive measures. This is because the US government did not specify ways to spend the government assistance funds, so people spent them in the usual way with conglomerate shops. Among the issues encountered in many countries' economic stimulation initiatives is that the policy is only effective for a limited period of time once the project is completed. However, in the case of the Let's Go Halves Program, the continuation of the project was found to be advantageous in alleviating these issues. The policy's outcomes show that the government's financial assistance can help decrease the economic impact of the COVID-19 epidemic on entrepreneurs and consumers, as well as encourage consumer spending. Another positive aspect of this project is that it is not a giveaway. Since participants in the project must also pay their own money into the G-Wallet to receive a discount, it encourages consumers to spend at the same time. The goal of the project implementation model is to encourage customers to purchase products and services immediately by arranging project implementation deadlines for each phase.

In situations where consumers use the government's subsidies as a savings account, as shown in the CARES Act of the USA, the Special Cash Payment Policy for Residents of Japan, and Taiwan's consumption voucher program, the Let's Go Halves Program differs from those programs as it does not provide financial assistance in the form of cash. Therefore, the financial support received cannot be kept as a deposit in a bank account. This solves the problem of people putting their support money into savings accounts rather than spending it.

5.2 Economic efficiency of the Let's Go Halves Program

Efficiency can generally be defined as the relationship between the amount of resources used and the amount of productivity generated by an activity or project, with the aim of achieving the lowest cost for the resources consumed. In economic terms, efficiency refers to the allocation of production resources and goods or services that deliver the maximum level of consumer satisfaction while using the least amount of resources. In the Let's Go Halves Program, project efficiency is determined by an economically measurable value, which is the total amount spent on the project's execution as input and the amount of money spent by people participating in the project, which is considered project output.

In terms of project efficiency, the Ministry of Finance reported that the estimated spending under the Let's Go Halves Program as of January 1, 2022, was approximately 224 billion Baht (\$6.65 billion), of which the Thai government had spent an estimated budget of 109.99 billion Baht (\$3.27 billion) in 2020-2021. The amount spent by people participating in this program was estimated to be 114 billion Baht (\$3.38 billion), which was 3.95 billion Baht (\$117 million) more than the amount spent by the government.

Table 7 Estimated spending of Let's Go Halves Program during 2021 – 2022

Program progress	Government's Spending	People's Spending	Estimated Spending
1 st Phase	23.95 billion (\$711 million)	25.1 billion (\$745 million)	49.05 billion (\$1.46 billion)
2 nd Phase	48 billion (\$1.43 billion)	50.6 billion (\$1.5 billion)	98.6 billion (\$2.93 billion)
3 rd Phase	109.98 billion (\$3.27 billion)	113.94 billion (\$3.38 billion)	223.92 billion (\$6.65)

This demonstrates that the Let's Go Halves Program has the potential to boost domestic consumer demand, enabling merchants to earn from the sale of products and services while also reducing people's daily living expenses. To fully benefit from the program, participants must use their privileges regularly. The program also helps alleviate the burden of people's expenses compared to the current minimum wage rate of 313-336 Baht (\$9.3-9.98) per day. On average, people spend 208 Baht (\$6.18) per transaction, which is more than the government grant. In other words, people spend an average of 138 Baht (\$4.1) more than the government's aid, almost double the daily support. This demonstrates the Program's effectiveness in encouraging people to spend more money and support local businesses while reducing their own expenses.

Figure 5 shows the amount of money spent on projects by the government and by individuals. It demonstrates that, as intended, this project potentially increases people's purchasing power.

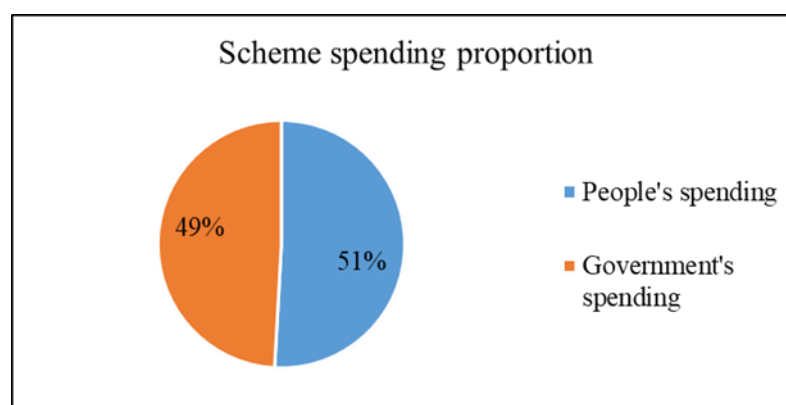


Figure 5 Final spending proportion of government and participants in December 2021

According to the Keynesian theory of the multiplier effect, the Let's Go Halves Program creates economic momentum and encourages spending, potentially leading to savings. The program offers a daily discount of 150 Baht (\$4.46), which can be redeemed once a day. Economic efficiency is a quantifiable notion that can be calculated by dividing usable output by total input. In the case of this project, efficiency can be measured by dividing total output by total input, which gives a result of 3.6%. While this figure may not be high, it can still be considered effective.

Another way to measure project efficiency is by the number of target audiences, which in this case are small entrepreneurs. The Let's Go Halves Program aims to reduce people's expenses and help small entrepreneurs earn income from selling products. The initial target audience was no more than 15 million people, and currently, there are around 1 million registered retail merchants participating in the project from October 2020 to March 2021.

The project has been effective in reducing the cost of living for the general public and small business owners affected by the COVID-19 pandemic, which is expected to increase the number of participants in the future. To accommodate this growth, the government should distribute funds to the public more broadly, which may lead to a reduction in the amount of aid provided and limit the eligibility to participate in the project. As the government has already implemented economic assistance policies for various groups, such as the state welfare card, reducing the amount of money given to the public may cause the trend of the multiplier effect to remain constant or decline. Therefore, it is recommended that the government leave a gap during the project period to develop the project according to the needs of the people and adjust it according to the trend of the economy and the state's fiscal status.

6. Conclusion and Recommendations

6.1 Conclusion

The Let's Go Halves Program has proven to be effective and efficient in terms of stimulating the economy and assisting those affected by the COVID-19 outbreak in 2020-2021. The program has successfully achieved its primary goals. Participants in the program have used their financial assistance for essential items, indicating that the funds provided by the government are being used effectively to reduce the economic impact of the pandemic on consumers. The initiative has also helped entrepreneurs, as reflected in the growth rate of the Entrepreneur Confidence Index, which has shown a steady decline in small store closures, promoting investment and strengthening the economy in the long run.

In terms of stimulating the economy, the research has shown that people have become more confident in the Thai economy and increased their spending after the program's implementation. The project's efficiency is measured by comparing the total amount spent on the project's execution as input to the program with the amount spent by people participating in the program. The research found that the amount spent by people on the program is greater than the amount invested by the Thai government, indicating that the policy is efficient.

However, the research also identified some problems encountered during the project's implementation, such as accessibility, technological compatibility, equality, and transparency.

In addition, in this research also classified the problems found throughout the project's implementation into four types as follow:

1. Accessibility: Most of the participants found the registration process difficult and encountered difficulties in verifying their identity in order to register for application Paotang and Tung Ngen. This is a problem that occurs during the implementation of phases one and two of the project. When the problem occurred, the government addressed it by enabling citizens to use ATMs to verify their identification. Moreover, due to a lack of technological capability, some users are still unable to access the program. The Ministry of Finance has issued a policy to assist such persons in different ways.
2. Technological compatibility: Entrepreneurs experience delays in receiving government subsidies, and store approvals can take a long time. Participants in the project have reported difficulties using the Paotang and Tung Ngen applications. For example, some users have been unable to make payments with the Paotang application, or have experienced issues with the application unexpectedly closing.
3. Equality: Equality has been a concern for many participants who have reported difficulties in registering for programs that have a limited number of participants. While there are still many people who want to participate in the project, some have backed out due to a lack of technological competence. To ensure that the program is accessible to everyone, regardless of their technological skills, the government should consider expanding the program's capacity and providing additional resources to facilitate the registration process. It is crucial that the program remains inclusive and does not require participants to compete with each other for a limited number of spots. All eligible individuals should be able to participate without facing unnecessary barriers.
4. Transparency: There are some stores that do not comply with government rules or people can redeem the privileges received in the program for cash.

6.2 Recommendation

Based on the problems found during the research on the Let's Go Halves Program, the researcher would like to make the following recommendations:

- 1) Increase the number of participants in the project.
- 2) Coordinate with relevant agencies to facilitate people in registration by preparing for more information verification.
- 3) Continuously improve the Paotang and Tung Ngen applications so that both can support people's usage more stably.
- 4) Strictly monitor the usage of consumers and stores in each phase. If a person violates the rules, the right to participate in the project in the future should be withdrawn.
- 5) Prepare a plan to address any potential inflation that may arise from this policy.
- 6) Look for economic measures to support online spending and reduce the number of coronavirus cases caused by economic activities.

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An Empirical Study of Emotional Regulation and Moral Disengagement among Juvenile Delinquents in Hebei, China—The Mediating Effect of Empathy

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Abstract

With the continuous development of society, the issue of juvenile delinquents in China has attracted much attention in recent years. 137 juvenile delinquents in Hebei Province, China were researched, and SPSS was used to conduct difference analysis, correlation analysis and regression analysis on emotional regulation, empathy, moral disengagement, and related factors for juvenile delinquents in Hebei province, China. The results showed that the levels of emotional regulation and empathy of juvenile delinquents in Hebei province, China are at the lower middle level, and moral disengagement is at the upper middle level. Juvenile delinquents' moral disengagement is affected by juvenile delinquent's gender, age, education, and family structure. Juvenile delinquent's emotional regulation and empathy are influenced by juvenile their gender and family structure. The emotional regulation of juvenile delinquent has a significant negative relationship with moral disengagement. Empathy plays a partial mediating role in the relationship between emotional regulation and moral disengagement. This study's authors believe that China should give young people positive attention and timely help from family, school and society to prevent the occurrence of juvenile delinquency. Juvenile delinquents serving sentences should be actively provided with psychological counseling, and they should be given opportunities to reform in a timely manner from the perspectives of education, reformation, and rescue.

Keywords: Chinese juvenile delinquents; emotional regulation; empathy; moral disengagement

1. Introduction

As an indispensable part of the population structure of a society and a country, teenagers bring endless power for the sustainable development of society and a country (WHO, 2018). How to educate and train teenagers well is a problem that society, family and school need to think about together. Since the 1960s, juvenile delinquency in the world has shown a continuous growth trend. Each year, the American juvenile justice system adjudicates about one million delinquency cases (Snyder, & Sickmund, 2006). In China, the growth of teenagers has received relatively comprehensive concern and attention from all walks of life, and the number of juvenile crimes has decreased on the whole. However, the potential deterioration caused by juvenile delinquency and the potential for great harm still cannot be ignored. According to the "White Paper on Juvenile Procuratorate Work" released by Supreme People's Procuratorate of China (2021), in recent years, the number of juvenile crimes in China has rebounded after declining for many years. Due to the control of the Covid 19 in China, following the year-on-year increase of 7.51% and 5.12% in 2019, the acceptance of review arrests and review and prosecution of juvenile criminal suspects resulted in a decrease by 21.95% and 10.35% year-on-year in 2020, the lowest in five years. Even so, the issue of juvenile delinquent crime should not be underestimated. Juvenile delinquent crime is not only an indicator of the present state of society, but also of the future society (UNODC, & The World Bank, 2007). Juvenile delinquency not only destroys the family, but also affects the current and future social stability by destroying the social order. Students should enjoy a good life on campus, but the rapid economic development and drastic social transformation has pushed more and more teenagers onto the road of crime (Song, Li, Wang, & Zhang, 2022).

Accurately analyzing and mastering their psychological characteristics and actively carrying out correction work is a key link in the reshaping of education of juvenile offenders (Song et al., 2022). From the

perspective of criminologists and psychologists, internalizing moral standards is important to prevent violations (Hamidieh, 2022). This inner mechanism has also been explained in psychology. This mechanism, which separates behavior from normative moral cognition, is known as moral disengagement (Mihelič, Lim, & Culiberg, 2023). People avoid immoral behavior because they are afraid of internal sanctions such as guilt, shame, or regret, and external sanctions for fear of opposition, exclusion, or punishment (Mihelič et al., 2023).

Empathy can be defined as one's ability to take the perspective of another person in order to assist that person in relieving their distress (Steindl, Bell, Dixon, & Kirby, 2022). Empathy can involve a feeling of sorrow, a feeling that matches someone else's feeling, and/or an expression of understanding and support (Malbois, 2023). Eisenberg emphasized two factors that determine whether a person will experience personal distress or empathy: negative emotionality and emotion regulation (Eisenberg, 2005). Emotion regulation refers to an individual's ability to monitor or adjust the duration or intensity of an emotional reaction in order to cope constructively with a distressing situation or to achieve a goal (Eisenberg, Fabes, Guthrie, & Reiser, 2002; Eisenberg, 2005).

The juvenile delinquent longs for the trust and respect of adults: from parents, school, and society; but they are impulsive, emotional, and weak in self-control (Meng, 2022). Juvenile delinquents are characterized by emotional instability and they tend to be self-centered, one-sided, and suffer from an extreme evaluation of their own setbacks and difficulties, so that negative emotions occupy a dominant position; psychological problems also bring long-term reactions such as more anxiety, depression and fear. Once stimulated by the external environment, these factors are likely to lead to extreme behavior or criminal behavior (Song et al., 2022). Therefore, this article will discuss the relationship and application of emotional control, empathy, and moral disengagement in the juvenile delinquent.

2. Objectives

- 1) Evaluate the level of emotional regulation, empathy and moral disengagement in the Chinese juvenile delinquent.
- 2) Evaluate the influence of emotional regulation, empathy and moral disengagement by gender, age, education, and family structure.
- 3) Research the relationship between emotional regulation and moral disengagement.
- 4) Evaluate the mediating effect of empathy in the relationship between emotional regulation and moral disengagement.

3. Materials and Methods

Literature Review

Many studies have confirmed that moral disengagement is closely related to teenagers' problem behavior. It is important to be able to predict whether teenagers will engage in immoral behavior, and there is also a significant positive correlation between immoral behavior and the teenagers' anti-social behavior such as engaging in crime. For example, in the research about the role of moral disengagement in children's criminal conduct, moral disengagement tends to result in aggressive and antisocial pursuits (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Mihelič et al., 2023). In the study of bullying behavior, it has been found that the higher the level of moral disengagement, the more abusive the bully's behavior is (Gini, Pozzoli, & Hymel, 2014). Bullying removes them from moral reasoning about their abusive behavior (Hymel, & Bonanno, 2014).

The concept of "Techniques of Neutralization Theory" put forward by criminology experts explains this phenomenon and holds that even if criminal teenagers realize that their behavior violates the common values and moral concepts of society, they will use techniques of neutralization theory to excuse their illegal and criminal behavior (Liu & Xian, 2005). They will deny responsibility, damage, claim victimhood, condemn others, and become highly loyal to groups or gangs (Hirschi, 2017). Bandura called this mechanism of separating cognition from behavior moral evasion, which refers to an internal cognitive mechanism of individual moral self-regulation (Mihelič et al., 2023). The theory holds that the self-regulation system is the basis of the whole moral system, which is composed of three stages: self-supervision, self-evaluation, and self-feedback. When an individual engages in immoral behavior, the self-regulation system may fail, and the main reason for the failure of this system is moral evasion (Wang, Lei, Liu, & Hu, 2016).

Related research results on moral disengagement point out that, on the one hand, there are significant gender differences in moral disengagement, and the level of moral disengagement in boys is significantly higher than that in girls (Barchia, & Bussey, 2010; Hyde, Shaw, & Moilanen, 2009; Yang, Li, & Wang, 2014; Ma, & Jiao, 2018). On the other hand, there are significant differences in the moral disengagement levels of adolescents of different ages (Paciello, Fida, Tramontano, Lupinetti, & Caprara, 2008), and the moral disengagement levels of adolescents change significantly at the age of 15 and 19, and increase with age (Yang et al., 2014). The research results of Dewi, Utomo, and Lestari (2022) pointed out that men are better at controlling their emotions, and believe that men have better emotional management skills. It is indirectly pointed out from the research results of aggressive behavior closely related to emotional regulation (Robertson, Daffern, & Bucks, 2012; Holley et al., 2016). On the one hand, there is no significant difference in the aggressive behavior of boys and girls in early adolescence, but in middle and late adolescence the aggressive behavior of boys is significantly higher than that of girls (Yu, Wei, Yuan, & Fang, 2015). Gender plays a moderating role in the impact of moral disengagement on cyberbullying. Boys' moral disengagement has a stronger effect on cyberbullying than girls (Wang et al., 2016); moral disengagement only has a significant effect on boys' relational aggression (Kokkinos, Voulgaridou, Mandrali, & Parousidou, 2016). On the other hand, adolescent aggression increases with age, and is significantly higher in middle and late adolescence than in early adolescence (Zhang, Qian, & Wang, 2008; Yu et al., 2015). Through the intervention of emotional intelligence on adolescents, it has been found that adolescents, especially males, have a positive effect on alleviating negative emotional experiences such as anger, hostility, and personal pain (Du, 2020; Maalouf et al., 2022; Kiarostami, Aghajanyhashjin, & Alizadeh, 2022). In terms of family structure risks, such as family divorce (Brody, Murry, Kim, & Brown, 2002), low parental education (Buehler, & Gerard, 2013), low family cohesion (Gerard, & Buehler, 2004), and high familial conflict (Wadsworth, & Compas, 2002), these can all seriously threaten the mental health development of adolescents (Bian, Liang, & Zhang, 2016). Family cumulative risk widely affects adolescents' internalizing and externalizing problems (Buehler, & Gerard, 2013). For example, as family cumulative risk increases, adolescents have more self-harm behaviors (Ge, & Liu, 2018) and deviant behaviors (Chen, 2019).

The defining feature of emotion regulation is the activation of a goal to influence the emotion trajectory (Gross, Sheppes, & Urry, 2011). Gross believes that emotion regulation refers to the process in which individuals exert influence on emotion occurrence, experience and expression; Emotion regulation involves changes in the latency, occurrence time, duration, behavioral expression, physiological experience and physiological response of emotion (Goldin, McRae, Ramel, & Gross, 2008). It is a dynamic process. Firstly, emotion regulation includes positive emotion and negative emotion, and they all include enhancement, maintenance and reduction; Secondly, emotion regulation can sometimes be controlled by consciousness, but sometimes it is involuntary and unconscious; Third, the habit of emotion regulation is like character, and there is no distinction between good and bad, right and wrong (Li, Wang, Zhong, & Zhang, 2014).

Empathy is the ability to understand others and then communicate this feeling to others, in other words, to understand others through what they know and experience about themselves (Zhang, 2022). Empathy is an important component of emotional intelligence (EQ). Modern theory believes that emotional intelligence has five aspects, namely: emotional self-awareness, self-emotional control, self-motivation, empathy, and interpersonal (Yahaya et al., 2012). Emotional intelligence is an important factor affecting interpersonal communication and survival adaptation. Teenagers are in adolescence, and their emotions are characterized by variability, such as sensitivity and instability, strong changes, relative vulnerability, impulsiveness, and lack of reason and control (Zhang, 2022). Adolescents' lack of recognition of their own and others' emotions and their inability to effectively use and control their emotions is one of the prominent factors leading to individual aggressive behavior (Robertson et al., 2012; Holley et al., 2016). Moral disengagement is the cognitive tendency of individuals to avoid immoral behavior. Individuals with high levels of moral disengagement tend to misinterpret aggressive behavior as a reasonable behavior.

Research has shown that individuals with high levels of emotional regulation are more likely to experience empathy because they are able to control their own emotional reactions and focus on the feelings of others (Schipper, & Petermann, 2013; Lockwood, Seara-Cardoso, & Viding, 2014). On the other hand, people with low levels of emotional regulation may experience personal distress because they do not have

the coping skills to manage their own negative emotions. This has been supported by studies that found that well-regulated children tend to display higher levels of empathy. Eisenberg found that preschool children who had high levels of attentional control and low levels of unregulated coping behaviors were more likely to show concerned facial reactions in response to a film designed to elicit empathy (Eisenberg, 2005). Alternatively, research also suggests that individuals with low regulatory abilities are more likely to experience personal distress because they do not have the necessary coping strategies to manage their negative emotions. Multiple studies have found that well-regulated children have higher levels of empathy. (Murphy, Shepard, Eisenberg, Fabes, & Guthrie, 1999; Eisenberg et al., 2002; Liu, & Lu, 2013).

Conceptual Framework

According to the theoretical analysis, this study established a research model as shown in Figure 1:

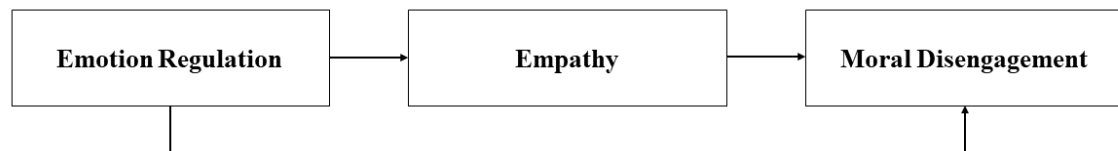


Figure 1 Conceptual Framework

Sample: In this study, purpose sampling was used for sample selection. Starting from March 1, 2021, China defines juvenile delinquency as an act committed by a person aged 12 to 18 that seriously endangers society and violates the criminal law and should be punished according to law (Guo, 2021). Therefore, this paper takes juvenile delinquents aged 12 to 18 as the research sample. Due to the particularity of the sample in this study, which are under strict supervision, complicated research permits, and incompatibility of the sample, under the limited resources available for this study, juveniles from three correctional institutions in Hebei, China were selected as the research sample. For research purposes, this study was approved with research permission from the Institution Review Board of Assumption University. The data were collected through paper questionnaire, and the services of an online and offline data collection agency was employed in the data collection process from December 1st, 2022 to January 10th. A total of 200 offline paper questionnaires were distributed, performing a random sample analysis. Finally, 149 questionnaires were received, with a recovery rate of 74.5%. A total of 12 unqualified questionnaires such as incomplete answers were deleted, and 137 valid questionnaires were finally collected, with an effective rate of 91.9%. The descriptive statistics results from SPSS show that:

Table 1 Descriptive statistics of samples

	n	Percent	Cumulative Percentage
Gender			
Male	92	67.15%	67.15%
Female	45	32.85%	100.00%
Age			
Under 15 years old	20	14.60%	14.60%
15 & 16 years old	45	32.85%	47.45%
Over 16 years old	72	52.55%	100.00%
Degree			
Lower than Junior school	35	25.55%	25.55%
Junior school	26	18.98%	44.53%
High school	76	55.47%	100.00%
Family Risk Construct			
Non-intact family	118	86.13%	86.13
Intact family	19	13.87%	100%

According to Table 1, among the samples collected this time, there are 92 male juvenile delinquents, accounting for 67.15%, and 45 female juvenile delinquents, accounting for 32.85%; The age is mainly concentrated in over 16 years old and 15 & 16 years old, with 72 and 45 people respectively, accounting for 52.55% and 32.85% respectively. Education is mainly concentrated in high school, for a total of 76 people, accounting for 55.47%. The family risk structure is mainly concentrated in non-intact families, with a total of 118 people, accounting for 86.13%. It can be seen that the overall survey sample is more adult-oriented.

The Emotion Regulation Questionnaire for Children and Adolescents: The Chinese version of The Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CCA), was used in this study to measure participants' emotional regulatory ability (Gross, & John, 2003; Chen et al., 2020). The original ERQ-CA is a 10-item questionnaire that assess the ER strategies of cognitive reappraisal (CR, 6 items) and expressive suppression (ES, 4 items). It has been translated for and validated in Chinese samples (Wang, Liu, Li, & Du, 2007; Chen et al., 2020). The ERQ-CCA was developed by modifying the items to make the items more easily understandable for children (e.g., "I keep my emotions to myself" was replaced with "I do not want to show my feelings to others" in Chinese). Each item is rated in a Likert response format of 7 options ranged from 1 (completely disagree) to 7 (completely agree). The higher the scores on each scale, the greater the use of the corresponding ER strategy is. The mean scores were calculated on both the CR and ES scale. The two-factor confirmatory factor analysis results showed that: $X^2/df=12.513$, NFI=0.901, CFI=0.902, IFI=0.902, TLI=0.899, RMSEA=0.167. The Cronbach's alpha of the cultural confidence scale is 0.910.

The empathy questionnaire for children and adolescents (EmQue-CA): Empathy was measured with the Chinese version of The Empathy Questionnaire for Children and Adolescents, which was modified from the initial version of the EmQue-CA (Overgaauw, Rieffe, Broekhof, Crone, & Güroğlu, 2017) to Chinese context, after discussing with experts in Chinese adolescent psychology and related fields, this questionnaire revised the 21 items of the original scale to 14 items. All of the items are scored on a 3-point rating scale ranging from 1 "not true" to 3 "true". Higher scores indicate higher empathy. According to the exploratory factor analysis (EFA), KMO = 0.917, $p = 0.0001$. After deleting items for which the communalities were lower than 0.40 (Ho, 2006), 14 items were finally retained to form a three-factor structure. The absolute value of each rotated factor loadings was greater than 0.50, and the cumulative percent of variance accounted for was 67.73%. The final version consists 14-items with three factors: cognitive empathy with 3 items; affective empathy with 6 items; intention to comfort with 5 items. The three-factor confirmatory factor analysis results showed that: $X^2/df=13.618$, NFI=0.927, CFI=0.945, IFI=0.931, TLI=0.906, RMSEA=0.089. The Cronbach's alpha of the empathy scale is 0.915.

Moral disengagement scale (MDS): Moral disengagement was measured with Chinese version of the Moral Disengagement Scale (MDS-C) (Wang, & Yang, 2010) which was translated from the MDS. This Chinese version of the instrument was based on the Translation - Back - Translation technique. The MDS-C contains 32 items, with 4 items under each of the eight moral disengagement sub-scales. The sub-scales are: Euphemistic labeling, Moral justification, Dehumanization, Diffusion of responsibility, Minimizing, Ignoring or Misconstruing the consequences, Displacement of responsibility, Palliative comparison, and Attribution of blame. Each item is rated on a five-point Likert scale scoring ranging from 1 (strongly disagree) to 5 (strongly agree). The Academic Deception Behavior Questionnaire and the Moral Identity Questionnaire were used as validation criteria to test the validity of the MDS in China context. The confirmatory factor analysis results showed that: $X^2/df=8.105$, NFI=0.912, CFI=0.907, IFI=0.908, TLI=0.901, RMSEA=0.093. This scale was tested in Chinese that showed adequate internal consistency and Cronbach's alpha for the entire scale is 0.87, split-half reliability is 0.80.

Statistics: This study mainly used SPSS for data entry and statistical analysis. Descriptive analysis was used to analyze the demographic information. Independent samples t-tests and one-way ANOVA were used to analyze the level of emotion regulation, empathy, and moral disengagement, and their influencing factors. Correlation analysis was used to analyze the relationship between the respondents' emotion regulation, empathy, and moral disengagement. Finally, a regression model was established, with gender, age, education, and family risk construct as control variables, emotion regulation as independent variables, empathy as mediator variables, moral disengagement as dependent variables, and four models were

established by regression analysis. Group 1 was used to verify the direct effect of emotion regulation on moral disengagement. Group 2 was used to verify the mediating effect of empathy.

4. Results

Difference tests analysis: According to the statistical results shown in Table 2, juvenile delinquents' emotion regulation ($M=35.50$, $SD=9.85$) and empathy ($M=24.90$, $SD=8.12$) were in the low-middle range. Moral disengagement ($M=113.63$, $SD=4.78$) was in the upper-middle range. Through post-hoc test analysis, females were found to have significantly higher average levels in emotion regulation and empathy ($p<0.001$); Over 16 years old was significantly higher in empathy than the other two age groups, and were significantly lower in moral disengagement than the other two age groups ($p<0.001$). Conversely, the under 15 years old group was significantly lower in empathy than the other two age groups, and significantly higher in moral disengagement than the other two age groups ($p<0.001$). High school students were significantly lower in moral disengagement than the other two educational levels ($p<0.001$). Intact family was significantly higher than non-intact family in emotion regulation and empathy ($p<0.001$), and significantly lower than non-intact family in moral disengagement ($p<0.001$).

Table 2 Difference test statistics of emotion regulation, empathy, and moral disengagement

	Emotion regulation M(SD)	Empathy M(SD)	Moral disengagement M(SD)
Gender			
Male	30.11(8.17)	23.73(8.85)	115.87(8.31)
Female	46.52(8.32)	27.24(8.43)	109.03(7.84)
	$t=2.569^{***}$	$t=2.775^{***}$	$t=2.663^{***}$
Age			
Under 15 years old	34.56(8.03)	24.18(8.33)	114.96(8.24)
15 & 16 years old	34.85(7.52)	25.49(8.60)	112.10(7.41)
Over 16 years old	35.22(8.99)	26.82(8.41)	110.76(7.72)
	$F=90.061$	$F=69.926^{**}$	$F=88.303^{**}$
Degree			
Lower than Junior school	34.60(6.07)	26.21(6.47)	116.74(9.43)
Junior school	35.12(6.47)	26.25(6.72)	115.58(8.25)
High school	34.85(6.08)	26.82(6.57)	108.22(9.27)
	$F=35.733$	$F=37.412$	$F=33.505^{**}$
Family			
Non-intact family	32.17(8.36)	20.66(9.82)	117.64(12.86)
Intact family	41.43(8.61)	29.88(7.01)	99.26(12.34)
	$t=8.840^{***}$	$t=8.155^{***}$	$t=7.006^{***}$

$^{**}p<0.01$, $^{***}p<0.001$

Correlation analysis: In this study, the total score of each scale was used as a variable, and Pearson correlation analysis was carried out on motion regulation, empathy, and moral disengagement. As shown in Table 3, it was found that emotion regulation was positively correlated with empathy ($r=0.768$, $p<0.001$) and was negatively correlated with moral disengagement ($r=-0.742$, $p<0.01$); empathy was negatively correlated with moral disengagement ($r=-0.644$, $p<0.001$).

Table 3 Correlation analysis of emotion regulation, empathy, and moral disengagement

	1	2	3	4	5	6	7
1.GEN	1						
2.AGE	0.154	1					
3.DEG	0.038	0.066	1				
4.FAM	0.109**	0.095*	0.188*	1			
5.EMO	0.671**	0.095	0.113	0.597***	1		
6.EMP	0.622**	0.516***	0.054	0.631**	0.768***	1	
7.MOR	-0.263*	-0.311***	-0.300***	-0.288**	-0.742***	-0.644***	1

1=gender, 2=age, 3=degree, 4=family risk construct, 5=emotion regulation, 6=empathy, 7=moral disengagement;
* $P<0.05$, ** $P<0.01$, *** $P<0.001$

Regression Analysis Before performing the regression analysis, the data was standardized, and after multicollinearity diagnosis, the results meet the preconditions for regression analysis (Ho, 2006). Model 1 was established by adding control variables and independent variables. The results in Table 4 show that emotion regulation ($\beta=-0.837$, $p<0.001$) can significantly and negatively predict moral disengagement. Based on correlation and regression analysis results:

Hypothesis 1 was supported, that is, emotion regulation has a significant negative impact on moral disengagement.

For the mediating effect shown in Figure 2, model 2 was established with emotion regulation as an independent variable, model 3 was established with empathy as an independent variable, and model 4 was established by adding emotion regulation and empathy. The results show that emotion regulation ($\beta=-0.694$, $p<0.001$) can significantly and positively predict empathy; empathy ($\beta=0.733$, $p<0.001$) can significantly negatively predict moral disengagement; adding emotion regulation ($\beta=-0.640$, $p<0.001$), and empathy ($\beta=-0.613$, $p<0.001$) still had a significant effect on moral disengagement. Comparing Model 1 and Model 4, it shows that empathy plays a partial mediating role. Based on correlation analysis, and regression analysis:

Hypothesis 2 was supported, that is, empathy has a mediating effect between emotion regulation and moral disengagement.

Table 4 A sequential test of direct and mediating effects

	Model 1	Model 2	Model 3	Model 4
1.Gender	-0.187**	-0.165***	-0.177**	-0.153***
2.Age	-0.135	-0.084***	0.123***	0.133*
3.Degree	0.126	0.044***	0.093***	0.102***
4.Family	-0.148***	-0.121***	0.127	-0.142***
5.Emotion regulation	-0.837***	0.694***		-0.640***
6.Empathy			-0.733***	-0.613***
R^2	0.750	0.731	0.748	0.784

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

5. Discussion

The survey results of this paper show that the emotional regulation of juvenile delinquent offenders in Hebei, China is at a moderately low level of empathy, and their moral disengagement is at a moderately high level. It shows that the emotional regulation, empathy, and moral disengagement of Hebei juvenile delinquent need to be improved. From the perspective of gender, the moral disengagement level of boys is significantly higher than that of girls. Except for the dimension of responsibility dispersion, there are significant gender differences in the other seven dimensions and the total score of moral disengagement, and the scores of boys are significantly higher than girls. This conclusion has been generally proved (Barchia, & Bussey, 2010; Hyde et al., 2009; Yang et al., 2014; Ma, & Jiao, 2019). According to the characteristics of physical and mental development of both sexes, girls mature earlier than boys in terms of psychology and body, can use assimilated moral concepts to restrain their behavior, and are not inclined to justify themselves. Men take fairness as the focus of attention, and are more likely to engage in immoral behaviors and distort

them into seemingly reasonable behaviors, which is also related to the low level of boys' moral identity. In addition, from the perspective of China's "face culture", Chinese women are more engaged in self-attribution, self-reflection, and self-criticism, while Chinese men are deeply influenced by the face culture and tend to attribute problems to the outside world and do not tend to blame themselves for their mistakes and find excuses for their behavior. Thus, the level of moral disengagement of the male juvenile delinquent is higher than that of the female juvenile delinquent.

According to the characteristics of physical and mental development of both sexes, female adolescents mature earlier than male adolescents in terms of psychology and body, can use assimilated moral concepts to restrain their behavior, and are not inclined to justify themselves. Male adolescents take fairness as the focus of attention, and are more likely to engage in immoral behaviors, and distort them into seemingly reasonable behaviors, which is also related to the low level of moral identity of male adolescents. In addition, from the perspective of China's "face culture", Chinese female adolescents are more engaged in self-attribution, self-reflection, and self-criticism, while Chinese male adolescents are deeply influenced by the face culture, tend to attribute problems to the outside, and justify wrongdoing. Thus, the level of moral disengagement of male juvenile delinquent is higher than that of female juvenile delinquent.

This study found that education also has a significant impact on moral disengagement. Among youth juvenile delinquent criminals, the educational level of professional criminals has its own characteristics and differences, and the number of crimes committed by occupational groups with lower educational levels and shorter years of education is significantly higher (Wu, & Zhang, 2013). The juvenile delinquent family structure showed different school-age stage characteristics and gender differences. Compared with junior high school students, high school students reported lower levels of parental caring and demanding, and the decline in parental caring and demanding levels may be related to the development of adolescent self-awareness and the covariant parent-child relationship. Family structure plays an important role in adolescents' moral disengagement. In a complete family, parents' supportive parenting style can enhance the ability to experience shame and promote moral identity, thereby helping to inhibit individuals from engaging in moral disengagement. This is consistent with the findings of Ouvrein, De Backer and Vandebosch (2018). These results illustrate the important role of affective factors in adolescents' moral development. Parents' caring dimension of the way is less likely to produce moral disengagement, and this level of emotional empathy is reached. Parents in a complete family need women to provide a good foundation of empathy and role models while caring for their children. Parents in incomplete families may have experienced more adverse family development environments because adolescents grew up, so parents do not have such an effect. On the contrary, parents show more coerciveness when making demands, thus reflecting a lack of empathy. In addition, the excessive demands common in single families will destroy the relationship balance of intimacy and autonomy between adolescents and parents, without really improving the empathy ability of adolescents, thus failing to have an impact on moral disengagement.

Emotional regulation has a less significant moderating effect on favorable comparisons, responsibility transfer and responsibility dispersion, which may be due to the lower degree of socialization of juvenile delinquent and the deviation of cognition of moral responsibility. This paper argues that the reason why gender has an impact on emotional regulation is because, on the one hand, the male juvenile delinquent finds it easy to ignore and suppress the positive emotion regulation effect, while the female juvenile delinquent has more attention and catharsis to the positive emotion regulation effect. On the other hand, in the process of emotional regulation, women are more likely to use emotion-focused strategies, while men are more likely to use cognitive reappraisal strategies (Hu, & Xie, 2019).

This study shows that empathy plays a partial mediating role between emotional control and moral disengagement. Juvenile delinquents with different levels of empathy have different behaviors. Specifically, juvenile delinquents with high emotional regulation ability have higher empathy ability (Wang, Wang, Deng, & Chen, 2019), and empathy will affect the juvenile delinquent's moral disengagement (Caravita, Sijtsema, Rambaran, & Gini et al., 2014). In addition, empathy has a partial moderating effect on moral disengagement, indicating that emotional regulation has a stronger predictive effect on juvenile delinquent moral disengagement. Therefore, positive emotional regulation can significantly affect moral disengagement for both adolescents with high levels of empathy and adolescents with low levels of empathy. This paper argues that individuals with high levels of moral disengagement may perceive and experience the helplessness of

help-seekers when faced with a helping situation, but they may think that they have no responsibility to help others and find reasons for their unhelpful behavior.

Emotional regulation plays an important role in adolescents' moral disengagement, which is consistent with the findings of Ouvrein et al. (2018). These results illustrate the important role of affective factors in adolescents' moral development. Previous studies have explored the effects of emotional regulation and empathy on moral disengagement, and the mediation analysis results of this study verify the mediating role of empathy between emotional regulation and moral disengagement. Emotional regulation is significantly negatively correlated with the total score of moral disengagement, which shows that if an individual can have good emotional regulation, it is a buffer to reduce the occurrence of problem behaviors. Among them, the correlation coefficient between regulating negative emotions and responsibility attribution is higher, and regulating angry emotions and inhumanity correlation is higher. If individuals can better control the expression and venting of their negative emotions, and even have the ability to transform negative emotions into positive emotions, such individual emotional symptoms will be less; and if individuals can effectively manage their anger, they will be more able to turn anger into moral disengagement. If the parents often have conflicts in the marriage, the child will learn a series of bad interpersonal communication patterns from it, and then change his moral cognition, making him think that it is normal to vent his emotions, so that he will show more emotions in future relationships, and engage in unreserved emotional out-of-control situations (Yang, & Wang, 2011). Combined with previous studies, emotional regulation self-efficacy has a significant negative correlation with adolescent bullying behavior. That is, individuals with higher emotional regulation engage in less violent behavior. This is because emotional regulation, as a sense of ability for individuals to effectively manage emotions, has a greater impact on improving the self-moral regulation function of children and adolescents and reducing juvenile delinquent violence. Therefore, emotional regulation plays a very important conduction role in the influence of moral disengagement on juvenile delinquent.

This study found that exposure to violence in real life will not only inhibit their sense of self-control in emotional regulation, but also change their moral cognition, increase the level of moral disengagement, and prompt them to produce more aggressive and disciplinary behaviors. But unlike the direct violent exposure model, moral disengagement plays a similar role in the model as emotional regulation efficacy. Studies have also shown that the effect of emotional regulation is significantly higher than that of moral disengagement (Wang, 2017). Ma, and Jiao (2019) believes that because direct contact with violence is becoming a victim of violence, the victim's judgment on the outcome of violence is generally worse, so it is more damage to the emotional regulation mechanism, which works through emotional regulation, resulting in more attacks, violations of discipline, etc. However, those who witness violence usually have not suffered any real harm, so they will not necessarily make a negative cognitive evaluation of the violence, but will increase the level of individual moral disengagement. Therefore, when indirect contact with violence, the role of moral disengagement is the same as that of emotional regulation. The roles played are quite important. Although moral disengagement and emotional regulation play different roles in the mechanism of exposure to violence and externalizing problematic behavior, the relationship between emotional regulation and moral disengagement in this paper proves the importance of both in juvenile delinquent psychology and behavior.

6. Conclusion

This study explores the formation mechanism of moral disengagement through the intermediary analysis of two variables that affect moral disengagement—emotional regulation and empathy—and verifies the effects of emotional regulation and empathy on moral disengagement. The main results show that with age, the empathy and moral disengagement levels of juvenile delinquent gradually increase, and the moral disengagement level of boys is higher than that of girls; there are gender differences in juvenile delinquency, and juvenile delinquent girls have higher levels of emotional control and empathy. The emotional regulation of the juvenile delinquent mediates between empathy and moral disengagement. Overall, this research has certain theoretical and practical significance. The results of this paper provide important ideas for the psychological and behavioral intervention of juvenile delinquent in family and society. In the process of education and training, educators should not only strengthen moral awareness education, but also pay

attention to the connection with family education. Institutions should pay attention to the establishment of good emotional regulation and empathy, and also provide the juvenile delinquent with a good sense of family.

7. Recommendation

In terms of mental health issues, minors are undoubtedly a vulnerable group in society. For minors, we can set up youth social work stations and hire experts to hold regular lectures on the physical and mental health of minors, set up a juvenile psychological counseling hotline, set up physical and psychological counseling rooms for minors, strengthen adolescent psychological education, promote minors to form a sound personality, and suppress social unrest and signs of illegal and criminal activities.

Preventing juvenile delinquency is a systematic project, not just relying on the strength of a certain aspect. Families, schools, and society should take responsibility together and work together to stop juvenile delinquency. Family education is the first classroom in life. Therefore, family education should be the first line of defense against youth juvenile delinquent. Parents should correctly guide their children with positive moral concepts, and care for them in life, so that they can lay a good ideological foundation from an early age; More importantly, parents should create a warm family environment for their children so that they can grow up healthily. Schools are the cradle of cultivating talents and the first stop for young people to face the society. Schools play an important role in preventing and controlling youth juvenile delinquent crimes. Schools should strengthen legal education on the basis of strengthening ideology and morality, and should not one-sidedly pursue the enrollment rate, but should start from the perspective of cultivating minors, and use scientific knowledge and legal concepts to educate them on the principles of life.

The social environment affects the healthy growth of adolescents. All parties should participate together and take their own responsibilities to create a good social environment for the physical and mental health of minors. It is necessary to strengthen the construction of science and culture, strengthen the management of entertainment venues such as Internet cafes, game machine rooms, and video halls, control school students from entering entertainment venues, and standardize the management order of entertainment venues. We need to completely reverse the unhealthy social atmosphere, fundamentally purify the social environment, and eliminate the root causes of juvenile delinquency. In addition, the principle of education first and punishment second is China's current criminal policy against juvenile delinquency. Therefore, strengthen the combination of school, family, and society to help and educate, reform, and rescue minors who violate the law. The judiciary has strengthened return visits and inspections, set up assistance and education institutions in Juvenile Delinquent's residence, and implemented assistance and education measures.

8. Limitation

At present, the international research on juvenile delinquent moral disengagement mainly focuses on the description of the status quo and the explanation of the causes, and there is a relative lack of research on prediction and control. In view of the important value of moral disengagement to immoral behavior and illegal and criminal behavior. For delinquent juveniles, the research on the control of moral disengagement is of greater significance, and carrying out moral disengagement education and correction is one of the ways. Although this article supplements the relevant impact and causal relationship of moral disengagement, it has certain practical significance. However, due to the limitations of research methods and sample selection, this study still has some research deficiencies, which need to be made up and improved in future research.

Similar to other studies that used questionnaires as a method of data collection, this study used juvenile delinquents to fill out the questionnaires based on subjective evaluations, and there may be survey errors. It is mainly manifested in two aspects: due to the existence of social approval, delinquent juveniles may deliberately conceal their moral disengagement and deliberately raise their moral standards; self-knowledge of disengagement is not objective enough. It is necessary to face up to the impact of these factors on the results, and continue to enrich and improve the means of investigating the moral disengagement of criminal juveniles.

This study adopts the purpose sampling method, and only samples a juvenile correctional center, which is relatively weak in representativeness. The number of effective research subjects obtained was also relatively small, only 137. The type of crime covered by the survey is also relatively loose, and neither the type of crime nor the length of time in prison was investigated on the demographic variables of the juvenile

delinquents. All these factors will affect the generalization of research conclusions to some extent. In addition, due to limited research resources, this study only selected Hebei, China as the research venue, and lacked relevant investigations in different regions of China. Therefore, in future research, it will be necessary to expand the sampling scope, increase the number of criminal juveniles sampled, and expand the types of crimes.

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Mother Tongue Based Multilingual Education (MTB-MLE): an alternative to Monolingual Education Policy in Myanmar

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Abstract

Mother Tongue Based Multilingual Education (MTB-MLE) requires the use of a mother tongue as a medium of instruction to enhance the learning of the students. Most ethnic education stakeholders in Myanmar are asking to implement MTB-MLE in order to provide a better education quality to ethnic community's students and also to maintain and promote their language and culture. This research aims to examine the long-term advantages and disadvantages of a monolingual education policy and to propose MTB-MLE. Semi-structured interviews were used to collect data in this research. Approximately 13 participants were interviewed. This research found that the majority of ethnic children who are forced to learn and teach in Myanmar, officially recognized as one of two official primary languages of instruction-the other being English, are struggled in learning due to the language barrier. In order to improve education quality and access in Myanmar, MTB-MLE is recognized as an approach provides equal learning opportunity for the community linguistically diverse. Across the globe, international research demonstrates the significant benefits that a focus on MTB-MLE in the early grades brings to education quality and access. This study also points out the benefits of MTB-MLE in term of inclusive education, education quality, and decentralized education system.

Keywords: *Mother Tongue Based-Multilingual Education; Medium of Instruction; Monolingual Medium of Instruction; Ethnic Education Provider*

1. Introduction

As the impacts of being isolated from the world more than a half century, Myanmar itself has slowly progressed in term of economic development. Even though Myanmar had been reorganized as one of Asia's leading economies with the highest per capita income among Southeast Asia countries in 1960 (Cryiac, 2018). However, International Monetary Fund (IMF) expressed that Myanmar has the lowest per capita GDP in Southeast Asia in 2010 (Asian Development Bank, 2012). Since the country was controlled by the military government in 1962, Myanmar's economic growth rate is slowing down due to the low investment, limited integration with global markets, (Asian Development Bank, 2012). Human resources can also be considered as a core factor of country's development (Arisman, 2018). For decades, Myanmar' education has been conducted with underinvestment, mismanagement as a plan of successive military and quasi-military government. As the result, the education in Myanmar has poor quality and inequalities (Meers, Rasmussen, Oo, & Lian, 2015). This is one of the main reason why Myanmar was at the lowest rank for Human Development. Table (1) shows that Myanmar has been placed at the lowest rank of human development among ASEAN countries for 11 years in last 12 years. In 2019, Myanmar and Cambodia were ranked as the countries with the lowest rate of human development. A year later, Myanmar stood at ninth place followed by Cambodia for human development.

Table 1 Human Development Index in ASEAN Countries from 2010 to 2021

No	Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Brunei	0.828	0.832	0.838	0.838	0.837	0.836	0.835	0.834	0.830	0.830	0.830	0.829
2	Cambodia	0.540	0.548	0.555	0.562	0.569	0.574	0.581	0.586	0.591	0.598	0.596	0.593
3	Indonesia	0.664	0.671	0.678	0.683	0.687	0.695	0.699	0.704	0.710	0.716	0.709	0.705
4	Laos	0.551	0.563	0.572	0.582	0.592	0.599	0.604	0.607	0.607	0.610	0.608	0.607
5	Malaysia	0.769	0.773	0.780	0.785	0.792	0.797	0.803	0.805	0.807	0.810	0.806	0.803
6	Myanmar	0.510	0.521	0.531	0.543	0.553	0.562	0.572	0.580	0.590	0.598	0.600	0.585
7	Philippines	0.674	0.679	0.685	0.692	0.696	0.698	0.700	0.704	0.710	0.718	0.710	0.699
8	Singapore	0.910	0.915	0.920	0.923	0.928	0.930	0.934	0.935	0.940	0.943	0.939	0.939
9	Thailand	0.737	0.743	0.746	0.747	0.778	0.781	0.785	0.790	0.795	0.804	0.802	0.800
10	Vietnam	0.663	0.668	0.672	0.676	0.680	0.684	0.688	0.692	0.697	0.703	0.710	0.703

Source: Adopted from “Human Development Index in Southeast Asia from 2010 to 2021”, by UNDP (2022)

The 1947 Panglong Agreement was signed among ethnicities in Myanmar on 12 February 1947 for declaration of independence from the British and formation of the Union of Burma (Ethnic Nationalities Affairs Center (ENAC, 2018). In history, Myanmar therefore is not the country representing the only ethnic group, but it was formatting with many ethnicities. Myanmar is an ethnically diverse country. The government recognizes 135 ethnic groups who also have their own language and culture. About 30% of the population in Myanmar are spoken the Burmese language as the second language (Gravers, 2007). Unfortunately, the issues related to minority/ethnic languages in education were deliberately ignored in favor Burmese as language of instruction in national schools. Especially, the literacy, culture and language of minority ethnic group are not allowed to teach in their mother tongue or as a subject in government schools for serval decades (Ethnic Nationalities Affairs Centers, 2018).

The population of Myanmar was approximately 53 million in 2016, with the majority consisting of Burman people who constituted 68% of the population, followed by Shan (9%), Karen (7%), Rakhaing (4%), and Mon (2%) ethnic groups (Ethnologue, 2023). According to the Summer Institute of Linguistics' Ethnologue report in 2016, the people of Myanmar speak a total of 117 languages, including 111 indigenous languages. Among these, the Burmese language has the largest number of native speakers and serves as the official language of Myanmar. It is estimated that approximately 70% of the population speaks Burmese as their first language. Notably, Burmese is not only spoken as the primary or sole language by those residing in the central region of the country but also by individuals of Mon, Shan, Karen, Chinese, and Indian descent (McCormick, 2019).

Conversely, about 30% of the population exhibits varying levels of proficiency in speaking Burmese as a second language, influenced by factors such as exposure, geographical location, and access to government education. It is important to acknowledge that several minority groups do not possess any knowledge of the Burmese language, instead utilizing their respective ethnic languages as their primary language for various purposes.

The country is constitutionally divided into seven states and seven regions. In theory, the regions are meant to represent the majority population, specifically the Burman people, while the states are intended for the minority ethnic groups. However, in reality, many of these minority ethnic groups have settled in regions in search of new opportunities. For instance, a significant number of Karen people reside outside of Karen State, such as in the Bago Region and Ayeyarwady Region (McCormick, 2019). In Myanmar, the language policy has resulted in the continuous marginalization of these minority ethnic groups, leaving them one step behind the Burman population in terms of promoting their culture and language. Additionally, the government has classified numerous smaller languages under eight major languages, namely Burmese, Shan, Karen, Rakhine, Kachin, Chin, Karenni, and Mon. For example, languages such as Jinghpaw, LhaoVo, Zaiwa, Rawang, Lacid, and Lisu are grouped under Kachin, while Naga, Sumi, Angami, and Ao are grouped under

Chin (Ethnologue, 2023). As the language policy predominantly favors the dominant language, even the survival of these smaller languages becomes increasingly challenging.

With each political change that has occurred in Myanmar, a new language policy has been adopted, providing an opportunity for leadership from minority ethnic groups to promote their culture and language. Under these language policies, indigenous languages are utilized in various aspects such as ethnic communication, radio broadcasts, administration, framing, trade, poetry, literature, education, and religion, albeit within the constraints of strict regulations (Ethnologue, 2023).

Myanmar has applied monolingualism for the medium of instruction in teaching since 1962, the year that Myanmar was controlled under the military junta. Despite its ethnic diversity, the state has insisted Burmese language (Bama saga) be the official language in teaching at government schools across the country (South, & Lall, 2016). The policy using monolingual for medium of instruction at national schools, was drawn to support the “Burmanization” in the language space by banning the teaching in ethnic languages (Kwok, 2019). The dream of ethnicities to teach in their own language or to teach their language as a subject at national school has been ended since then. South, and Lall (2016) concluded that this policy, which undermines the culture of minority, is one of the factors cause violence and conflicts between ethnic armed groups and the military government. As the consequence of adopting the monolingualism for the medium of instruction in teaching under the military rule over 50 years, Myanmar becomes of the poorest countries in the world and its education system is showing the negative outcomes (Hayden, & Martin, 2013).

After the military coup in 1962, the space for ethnic groups to promote and maintain their languages was more limited. In this systematic effort of the tension between the military government and the ethnic armed groups, as the regime ignored the rights of the minor ethnicities. Teaching in mother tongue language or teaching the ethnic language as a subject in government schools was banned in order to crate the Myanmar national identity based on Bamar culture (South, & Lall, 2016). In 1973, the first campaign against illiteracy started by the Shan people the Shan people to promote the teaching of reading and writing in Shan language. The Burmese military intelligence did not allow such performance to separate throughout the country. In respond, many volunteer, students, teachers and donors were threatened, tortured, and murdered by the Burmese military intelligence (Kwok, 2019). Moreover, the ethno-linguistic communities are banned to employ their language for street signs, announcement posters. The right to maintain and promote the culture and language of minor ethnic groups are totally limited.

The policy of adopting a single language for medium of instruction has strongly affected the learning of children in ethnic minority and rural areas (Hirschi, 2019). As the result of using only Burmese in teaching and learning, the drop-out rates are getting high. Moreover, the Education Management Information System (EMIS) reported that there are 1,015,340 students who either have never enrolled or dropped out of formal schools (Ni, & Nu, 2019). Figure 1 showed dropout rate for children of primary school age in Myanmar between 2001 and 2016. Furthermore, Paing interviewed with Ning Za Man, a 35 year old man, in 2019, “When I was young many of my classmates dropped out after primary school due to language difficulties. They couldn’t understand the subjects being taught in Myanmar language.” The number of dropped out student in rural area and ethnic communities is greater that in urban areas. While children in rural were facing with financial problems, the students in ethnic communities are struggling with language to access basic education (Meers, Rasmussen, Oo, & Lian, 2015).

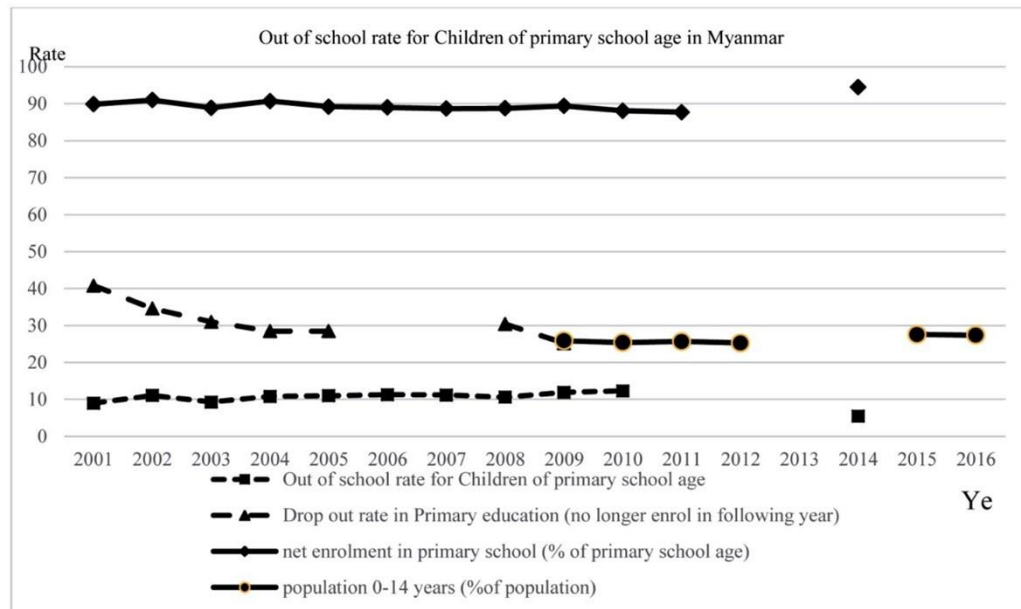


Figure 1 Dropout rate for children of primary school age in Myanmar

Source: Adopted from Major factors leading to out of primary school in Myanmar: a case study of non-formal primary education programme in Dala township Yangon (p.146), by Ni, and Nu (2019)

Educational organizations, activists and ethnic group education providers are demanding for MTB-MLE to improve the learning of children in ethnic minority and rural areas and promote their cultures. Not only the local organizations believed that teaching in the language student understood, can improve the learning outcome but also the United Nations and many countries in Asia Pacific supported MTB education in order to help student in learning. Article (4) of the UN Declaration on the Rights of Persons Belonging to National or Ethnic, Religious and Linguistic Minorities in 1992 announces that, “States should take appropriate measures so that, wherever possible, persons belonging to minorities may have adequate opportunities to learn their mother tongue or to have instruction in their mother tongue.” In Southeast Asia, the Philippines adopted MTB education system for primary schools, East Timor and Thailand have cooperated with the UN agency for children to promote multilingual education, aimed to the strengthen the learning outcome of the students (Michaels, 2013).

After a long fight between the military government and the ethnic minority rebel groups, some ethnic armed groups agreed to sign the nationwide ceasefire in 1992 (ENAC, 2018). The days after signing, some ethnic education groups urged the government to change its education policy and teach the minority ethnic languages as a subject in state schools. For the first step, ethnic nationalists have asked for the right to teach ethnic languages in government school. For the second step, the right for teaching of the full curriculum in the mother tongue has been proposed by ethnic education provider groups (South, & Lall, 2016). Since the democratic reform began in 2011, the role of ethnic nationality languages has been reconsidered to use in government schools (Hirschi, 2019). The UNICEF organized the Comprehensive Education Sector Review (CESR) education consortium with the supports from AusAID and the World Bank to review the language policy in teaching and learning (South, & Lall, 2016). In 2014, the state allowed the ethnic languages to be taught in government schools. However, there is only a slight of measurable progress because the lesson is being taught outside of official school hours (Kwok, 2019).

As the result of education review in 2014, Myanmar was able to enact the National Education Law on 25 June, 2015. The law aims to develop the modern development which based on the needs of minor ethnic groups (Myanmar Law Information System, 2015). Ethnic Nationalities Affairs Center (ENAC) in 2018 remarked that this is a good initiate for ethnic groups to promote its languages, cultures, and arts. Unfortunately, the National Education Strategic Plan (2016-2021) of new government, the National League

for Democracy (NLD), did not mention about the mother tongue-based education. However, ethnic education provider groups cooperated with Non-Government Organizations (NGOs) to develop curriculum in ethnic languages (ENAC, 2018). Because MTB-MLE is one approach to break the monolingual education system and advance to a better education system in the future. Therefore, this research paper will focus on the consequences of using monolingual as medium of instruction at government schools in long term and aims to provide the strong arguments for MTB-MLE as an approach to have a better education system in Myanmar.

This research paper is divided into seven sections. The first section describes mother tongue base-multilingual education system. The main research objectives are described in the second section. The third section then explains research methodology by describing the detailed information of research design and participants. The fourth and the fifth sections are research results and discussion on examining the long-term advantages and disadvantages of monolingual education policy in Myanmar. Lastly, the sixth and seventh sections are conclusion and recommendations to develop a better education system in Myanmar.

1.1 Mother Tongue Based-Multilingual Education System

Until the middle of the twentieth century, the role of the mother tongue in education was not considered as a factor that can improve the education access and quality. In 1953, the UNESCO had published the book so called, "The Use of Vernacular Languages in Education" which highlighted the benefits of using mother tongue in education and becomes the initiative for Education for All (EFA) movement. At the World Conference on Education for All in 1990 which took place in Thailand, delegates from 155 countries agreed to make the early education accessible to all children around the world, yet it did not promote much about the use of mother tongue in school. However, people were more recognized the mother tongue based-multilingual education after the World Education Forum in Senegal in 2000 as the conference mentioned the importance of using students' mother tongue in the formal education system (Malone, 2018). Figure 2 showed how to use MTB-MLE for teaching languages. Nowadays, MTB-MLE programs have been developed all around the world, especially in the Asia-Pacific Region (Malone, 2018).

Mother Tongue Based-Multilingual Education (MTB-MLE) can be categorized into two programs: teaching a mother tongue as a subject in government schools and mother tongue as the medium of instruction (Gempeso, & Mendez, 2021). Like teaching the national and global languages, the local language also can be taught as a subject in national schools to promote the identities of the minor ethnic groups. On the other hand, mother tongue instruction means the use of the learners' mother tongue as the medium of instruction. It also refers to L1 as a subject of instruction. MTB-MLE can be used for whom first language is not the official language or the national language for their early education (Ball, 2011). MTB-MLE is not an approach only to change the language in the textbook, the examination and to communicate with school personnel, but also to adjust the entry learning strategy which can be focused on critical thinking and knowledge and skill that is required for 21st century (Asia-Pacific Multilingual Education Working Group, 2013). Moreover, even though MTB-MLE generally refers to the use of the mother tongue as a medium of instruction in the classroom, it does not mean the program restricted the chance for learners to access to national and international languages. Rather, it is helping student to learn these languages by build a strong foundation with the language they know best in order to have a smooth transition into other languages.

By using the mother tongue based-multilingual education, the schools will be able to provide a better education system which guaranteed for gender equality, lifelong learning, and active learning. Firstly, MTB-MLE helps to empowerment and promote the gender equality. Ethnic Nationalities Affairs Center (2018) provides five approaches how the girls can get involved in education through MTB-MLE.

- 1) If the girls are taught in a language they best understand, the percentage of school attendance will increase significantly.
- 2) The parents' participation in learning and teaching will be improved by using the home language in school.
- 3) The girls will attend the school longer if the school provide bilingual classrooms.
- 4) The girls can express greater competence and understanding if they learn in their mother tongue.
- 5) In learning process, bilingual teachers create more equity in their interaction with girls.

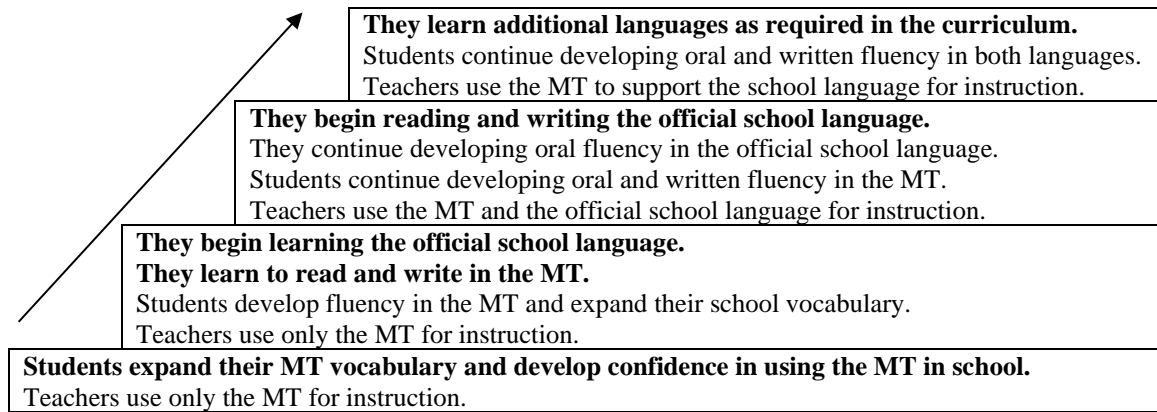


Figure 2 Progression for teaching languages as subjects and using them for instruction in MTB-MLE
Source: Adopted from Including the excluded: promoting multilingual education (p.6), by Malone, 2018

Secondly, lifelong learning is only possible when the education is built on the needs of the community and reflects the ethnically diverse society. Wisbey (2016) explained that Children, youth, and adults require learning opportunities through their own language about their lives and needs. However, not everyone has the opportunities to read and learn. Therefore, using learners' own languages in education can provide a lifelong learning opportunity for all people to prepare for higher education and to acquire the technical and vocational skills needed for employment. Lastly, MTB-MLE helps the students to participate and interact with their teachers. Ting (2022) reported that students who attended in multilingual schools achieve a remarkable academic, personal, and spiritual development. Students can learn better when they are engaged in the classroom.

1.1.1 Mon National School with MTB-MLE

Before the independence of Myanmar, Ethnic education, and the teaching of ethnic languages was delivered by the ethnic nationalists, Buddhist monks, Christian churches (South, & Lall, 2016). For decades, the ethnic nationalists have been fought for freedom including the freedom to promote their language and culture. After a long negotiation between ethnic nationalists and Myanmar government, some ethnic groups developed the mother tongue based multilingual education which can be integrated into the government system (Htet, 2021). The Mon National Education system is an example for other ethnic groups to develop MTB-MLE as it a mixed system of education with self-designed contents and government's curriculum (ENAC, 2018).

The Central Education Department of New Mon State Party (NMSP) established the Mon National School in 1972 to provide education access for all and to promote its language, literacy, and culture. After two decades, the Mon National Education Committee (MNEC) was created in 1992 to administrate the Mon National Schools (South, & Lall, 2016). The 1995 ceasefire between the NMSP and the Myanmar military created opportunity for MNEC to build more schools in the government-controlled zones across the southern Myanmar. In 2018, the total number of the Mon National School under MNEC administration is 132 schools; 113 primary schools, 16 middle schools, 3 secondary schools, and one higher education which is called Bop Htaw Empowerment and Education Program (BHEEP) (ENAC, 2018).

Most ethnic groups included MNEC have taken the bottom-up approaches to develop the mother tongue-based education system. Under the coordination of MNEC, the Mon national education system is offering the opportunities for the learners both to learn the Mon language, literacy, and culture and to integrate into the government system later (Htet, 2021). The Mon national education system focuses on the teaching of ethnic language (Mon Language) at primary school, shifting to half Burmese and half ethnic language at middle school and mostly Burmese for secondary schools (South, & Lall, 2016). The students who study at Mon Nation School, are allowed to take the government matriculation examination. If they passed the examination, they are allowed to go to the national universities as other students who studied at government schools (ENAC, 2018).

At the primary school, MNEC has adopted the MTB-MLE system which mostly uses the learning and teaching materials in the Mon language and the ethnic language for medium of instruction. Some textbooks especially for Mon Language and Mon History are developed in local contents by the committee while Mathematics are translated from Burmese to Mon (South, & Lall, 2016). For the middle school, the committee mainly uses the government curriculum which is used across the country. However, the Burmese History has been replaced by the Mon History. The school uses bilingual education which are both Burmese and Mon Language as the medium of instruction (ENAC, 2018). The secondary school fully uses the government curriculum in order to prepare for the students to take the government matriculation. Therefore, the Mon education system is a good approach to develop MTB-MLE system in Myanmar.

2. Objectives

- 1) To examine the long-term advantages and disadvantages of monolingual education policy in Myanmar.
- 2) To propose that the Mother Tongue Based-Multilingual Education (MTB-MLE) is a recommended approach to improve the education system in Myanmar.

3. Methods

Qualitative approach has been employed in this research in order to obtain a richly detailed understanding of perceptions on the current education system in Myanmar and the MTB-MLE system. Interview provides a free space for respondents to share their ideas and thoughts freely and also encourage respondents to talk about intimate and confidential issues (Guest, Namey, Taylor, Eley, & McKenna, 2017). Moreover, this research used both primary and secondary data to analyze the factor influencing on Myanmar education system and the characteristic or the core value of MTB-MLE. This section should provide enough detail to allow full replication of the study by suitably skilled investigators. Protocols for new methods should be included, but well-established protocols may simply be referenced.

3.1 Data Collection

This research study used both primary sources and secondary sources in order to achieve its research objectives. The researcher used semi-structure method to get the opinions of the participants about the education system in Myanmar based on their experience and believe. The primary sources are used to collect the direct data on the ground. The interviews were grate sources of information as it gives update information on a particular topic. As the primary sources, the interview process is being conducted by a total of ten participants who are well understood about education system in Myanmar and who are working in education. As the secondary sources, the researcher had collected data from book, journal article, research report, news, and websites (both internal and external institutions) which are related to Mother Tongue Based Multilingual Education and education system in Myanmar. Both sources help the researcher to be able to structurally explain the long-term advantages and disadvantages of the current language education policy and the feature of MTB-MLE which help to improve Myanmar education system.

3.2 Participants

For interview, the researcher had conducted thirteen participants who have theoretical or practical knowledge about education system in Myanmar. The participants are divided into two groups: education personnel and higher education students.

3.2.1 Education Personnel

The participants under the education personnel category were chosen based on three criteria. For the first criterion, the researcher decided to select only who had been working in education at least five years. The interviewees for this research must have minimax five-year experience in the field of education because the person who have long experience in education can give the reliable and detail information about education system in Myanmar. The second criterion is about the age. The participants must be over thirty-five years old. The participant who was born before 1987, experienced the two era of education system before and after twenty first century. The researcher believed that these people are able to provide the progress and the changes of language education policy in Myanmar. The last criterion is about the language spoken by participants. As

the interview is going to be conducted in either Burmese or English, the participant must be able to speak one of those languages.

Five participants were selected to participate under the category of education personnel. The first two participants are directly from ethnic education providing organizations: Mon National Education Committee (MNEC) and Karen Education and Culture Department (KECD). The third participant is a retired government servant from education department. The last two participants are from education community-based organization.

3.2.2 Higher Education Student

The participants under the higher education student category were chosen based on three criteria. The first criterion is the researcher has chosen only participants that finished middle school in Myanmar. If the participants have finished middle school, they will be able to analyze the impact of language policy on the early grades' students. The second criterion is about the age. All participants must be over twenty years old. According to Myanmar education system, most student finished the high school at the age of seventeen. Therefore, the researcher believes that the participants, who are over twenty years old, can be able to explain the long-term advantages and disadvantages of the education system. And the last criterion is about the ethnicities. Myanmar officially comprised with eight major national races including the Burma, the Mon, the Shan, the Karen, the Kayah (Karenni), the Kachin, the Chin, and the Rekhine (Arkanese) (Gravers, 2007). The researcher decided to choose one participant from each main ethnic group in Myanmar. Because they can present the concern of language policy on education from their communities' perspective. Therefore, there are eight students from different ethnicities to be participants under higher education student category. The researcher conducted all interview from November 5th, 2022, to November 27th, 2022.

Table 2 List of Interviewees

No	Participant	Gender	Age	Ethnicity	Position	Organization or Primary School	Category
1	Participant A	Male	52	Mon	Deputy Executive Director	Ethnic Nationalities Affairs Center	Education Personnel
2	Participant B	Female	64	Mon	Head Teacher (Retired)	Ministry of Education Myanmar	Education Personnel
3	Participant C	Male	40	Karen	Secretary	Karen Education and Culture Department	Education Personnel
4	Participant D	Male	41	Mon	Secretary	Mon National Education Committee	Education Personnel
5	Participant E	Male	36	Canada	Director	Teacher Focus Myanmar	Education Personnel
6	Participant F	Male	23	Arakan	Student	Walen Primary School	Higher Education Student
7	Participant G	Female	28	Burman	Student	Mingalar Taung High School	Higher Education Student
8	Participant H	Male	21	Chin	Student	Ayeyarwady Adventist Seminary	Higher Education Student

No	Participant	Gender	Age	Ethnicity	Position	Organization or Primary School	Category
9	Participant I	Male	25	Kachin	Student	Myitkyina High School (1)	Higher Education Student
10	Participant J	Female	21	Karen	Student	Pantanaw Kyaut Taing School	Higher Education Student
11	Participant K	Male	28	Karenni	Student	Nan Meh Khon High School	Higher Education Student
12	Participant L	Male	33	Mon	Student	Thaung Pyin High School	Higher Education Student
13	Participant M	Female	22	Shan	Student	Hlaing Thar Yar High School (22)	Higher Education Student

3.3 Scope Limitation

The researcher firstly decided to conduct onsite interviews. Due to the current fighting between the Burmese military and various ethnic armed groups, civil unrest and armed conflict has increased. The military regime has declared martial law order in some township and some areas have curfews or stay at home orders. Therefore, the researcher finally decided to conduct online interviews.

4. Results

The research findings and discussions will be discussed in this chapter. Firstly, the research findings present all the important information from primary research sources. In the following part, the two questions of the research will be examined by using the primary source and the secondary sources from books, journal articles, and research reports which are established by both internal and external institutions.

4.1 Challenges in learning due to language gap

In the use of monolingual education in ethnically diverse community, it was found that most students, who are speaking non-Burmese language, have struggles in learning. Figure 3 shows that all the participants had been struggled to understand the concepts of the subjects. Participant F said most students in their class did not understand what their teachers tried to teach as they were taught in Burmese which is not the language they speak at their houses. Participant L also mentioned that majority of the students in his class could not catch up the lessons unless the teachers sometime used the local language for explaining the content of the subjects.

11 out of 13 participants reported that they lost self-confidence to present their thoughts, ideas, and experiences in the class as they are unable to speak the official language of the school. Participant C added that Burmese language is used not only for medium of instruction but also as a language printed in the textbooks. Therefore, it is systematically created the challenges for learners to understand the instruction of the school, to communicate with their teachers, to follow the classroom procedures. Participant H explained that when I was young, I rally completed the assignments and homework which were assigned by my teachers because I nether understand the instruction given by teacher nor written in the textbook. Moreover, the participant K added that on someday, he was sitting on his site without speaking a single word to teacher. He further mentioned that he and his classmates could actively participant in learning if the school use the language that students understand the most.

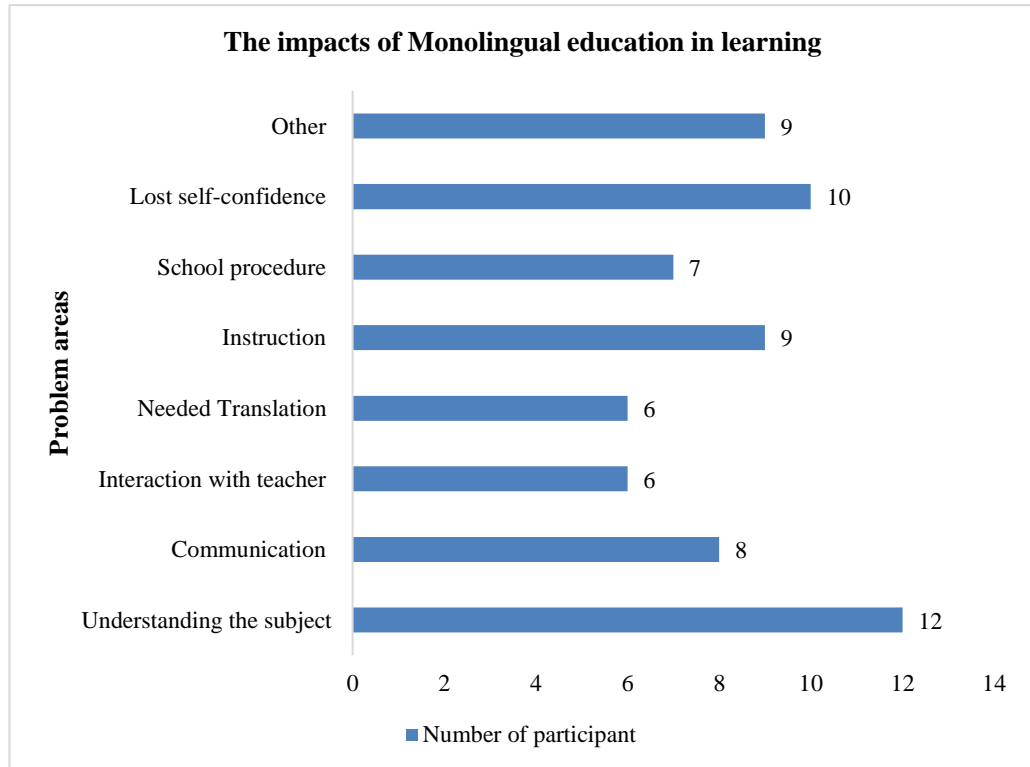


Figure 3: The impacts of Monolingual education in learning

4.2 Long term disadvantages of Monolingual Education

The top three long term disadvantages of monolingual education have been found in this research are less opportunity for employment, high drop-out rate, and limited cognitive development. Myanmar is an ethnically diverse country which consisted with many ethnic groups who have a strong history, culture, and language. Recently, those languages are still being used in many areas such as in teaching, communication, work environment. Participant B, C, D, F, H, I and J mentioned that if you can speak, write, and read only Burmese language, it is almost impossible to find a job in a place where local languages are being used for communication and public relations. The participant G (Personal Communication, November 7, 2022) reported the challenge that she has experienced due to the language barrier,

“After I graduated, I planned to work at a community-based organization (CBO) in Shan State. But the plan did not go well as I expected. I was not employed despite there are so many vacancy announcements from CBOs. The only reason that I had been rejected from CBOs is that I cannot speak Shan language.”

The second negative impact of monolingual education mentioned by the participants C, D, F, I, K, and L is the increased drop-out rate. These five participants explained that most students in their classes prefer to leave the school as they believe the schools have no capacity to improve their future. Participant L added that teaching the students in the language they do not understand is ideologically the same as killing their future.

All participants agreed that the current curriculum and education system in Myanmar is designed in favor of only one dominant ethnicity, culture, and language. Participant C claimed that the opportunity to participate in the classroom are not provided for every student due to the language barrier. Therefore, it limits the ability of a student to think, explore and figure out the world around them. Participant F informed that

students in Myanmar are being taught in one language and most of the contents are based on only one culture. As the consequence, it is almost impossible to think one topic from different perspectives. Participant F therefore concluded that learner who relies on only one language in learning are properly slow for development of knowledge, skills, problem solving.

4.3 Long term advantages of Monolingual Education

All the participants pointed out the language proficiency as a common long-term advantage of monolingual education. Participant B argued that the students will be able to speak Burmese language fluently after they finished the Basic Education because ten years of learning is adequate time for a learner to be proficient in one language. Participant J reported that student will have more opportunity to find a job in urban areas if they can speak Burmese. In term of personal development, participant I mentioned that being able to speak the official language fluently, it will increase self-confidence and confident to use the terms and conditions at workplace.

Participant A, B, C, and L reported that the monolingual education system is supposed to promote equality in education. Participant B further explained that the current education system is designed to provide equal education for all children in Myanmar because it uses the same curriculum and assessment method for all schools across the country. For administration, participant K claimed that it is much more convenient for school personnel to manage the school procedures and needs less budget for implementation.

4.4 All-inclusive Education

All the participants have reported the children in Myanmar do not have the equal right to access education. Moreover, the education service provided by the government could not be reached to all children living in Myanmar. The participant A, C, F, K, and L claimed that the inequalities in education between urban areas and ethnicities' communities or rural area need to be concerned. Participant A mentioned that the children in minor ethnic communities are being disadvantaged not only in term of infrastructure but also the language using at school. Therefore, the participants proposed the MTB-MLE as an approach to ensure for all-inclusive education.

- **Using mother tongue in teaching:** it can improve the education access for marginalized people when MTB-MLE system adopted in schools because it facilitates for all children living in ethnically diverse to learn better in their mother tongue.
- **Adopting the contents based on community's culture:** Instead of One-size-fits-all, the contents of the subjects should be designed according to local culture. In this way, it will ensure the real learning opportunities for all children who have traditionally been excluded.
- **Cooperating with local schools and ethnic education providers:** The government can technically and financially support the schools under administration of ethnic education providers to ensure that all children in Myanmar have practiced in education.
- **Gender equality:** When the school uses mother tongue in teaching and learning, it develops confidence for the girls to participate in learning.

4.5 Better Education Quality

Ninety-two percent of participants reported that the learning system in Myanmar is still in the stage of rote learning which can be defined as the memorization of words or sentences based on repetition. Participant E claimed that MTB-MLE is a needed step to promote a better education quality in Myanmar. Participant A further explained that critical thinking can be processed only when the students understand the subject they are being taught. Participant C (Personal Communication, November 6, 2022) remarked that:

“The education quality can be improved if the government adopts Mother Tongue Based Multilingual Education as a language of teaching. But if MTB-MLE was taught as a subject at school, I could not figure out any changes in education. The state once adopted a mother tongue subject at government in 2014. That was not effective to improve education quality.”

Participant E, F, G, H and L also highlighted the importance of MTB-MLE to obtain a better education quality. First, by using the language or languages that children are most familiar with, it can improve learning outcomes and academic performance as it helps students to communicate with teachers and actively participate in class. Second, if teaching strategy, learning material, and the content of the subject are reflected to linguistic diversity, it can reduce the knowledge gaps among students and ensures that learner at different backgrounds can receive the skills and knowledge they need to grow and succeed. Third, under MTB-MLE, the parents can perform as an essential source in learning for children. The use of mother tongue in teaching and in developing learning material can enhance the participation of parents to help their children in learning.

4.6 A Decentralized System

All participants reported that Myanmar education system is highly centralized and MTB-MLE is one of approaches that can decentralized the education system. Participant L mentioned that every ethnic groups are allowed to open their national school, but these schools are not recognized from the government. If the school under the administration of minor ethnic groups wants the recognition from the nation, it will be asked to practice the education strategy and curriculum of the nation. This kind of management proves how education system was centralized.

Participant A explained that under the mother tongue based multilingual education system, the local government will have the rights to make decision regarded to the languages in teaching, the curriculum uses at schools and management of the school. Participant C reported that by using MTB-MLE, it intends not only to decentralize the education system but also to form a harmonist learning environment by promoting the diversity of the country.

5. Discussion

In this section, the result finding will be discussed based on the research questions presented in chapter one. The secondary sources are also used to support the explanation by comparing and contrasting.

5.1 Long term advantages and disadvantages of Monolingual Education policy in Myanmar

After the monolingual education policy was enacted in Myanmar, numbers of student were being affected by the policy in their learning and for their professional development. There are two long term advantages of monolingual education reported in this research. The first long term advantage of monolingual education is that it provides equality in education. By using one language, one curriculum and one textbook, all student in Myanmar will have the same standard of education. Among thirteen principles of Basic Education Curriculum, promoting equality is one of the most concerned development goals in Myanmar education (Htet, 2020). Four participants agreed that monolingual education aims to promote equality in education. Regardless students' background, language, race and gender, each student will get the same opportunity to achieve their educational goals. Moreover, the national education law in 2014 also highlighted that all the children living in Myanmar should have a standards-based education equality to enhance a better future of the nation (Ministry of Education, 2016).

The second long-term advantage of monolingual education is that students are fluent in official language. Burmese is used as the medium of instruction in all Grades from kindergarten to Grade-12. In old syllabus, there are 5 grades at primary level, 4 grades at middle level and 2 grades at secondary level for basic education (South, & Lall, 2016). If you are a high school student, which means you have been learning Burmese language for 10 years already. Ten years is enough time for a student to be fluent in one language. Participant B reported that most students in Myanmar are capable to speak Burmese language fluently after

they finished the Basic Education. This finding seems to support the statement of Maiworm (2014) that students who has been learning in one language mostly became influent in particular language which also helps them to find a job in a specific discipline. With this language education policy, children later on will be able to use Burmese language, but there is no chance to learn their mother tongue languages.

As the consequences of language education policy in Myanmar, students are facing with many challenges in term of language barrier in learning and personal development. Due to language gap, the participants have mentioned some challenges in learning such as learning without understanding, lost self-confidence to participant in the classroom, and fail to understand the instruction. In long term, these kind of challenges in the classroom become a big impact for students for their further studies and professional development.

There are three long term disadvantages of the monolingual education policy in Myanmar. The first long term disadvantage of the monolingual education is less opportunity for employment. Being able to speak, read, and write only Burmese can limit the chance to find a job after graduating from the schools. Learning the official language or the dominant language is important as it enables people to communicate with others. But there are so many languages being used for communication in Myanmar especially in ethnic communities. According to 1983 census, Burmese, Shan, Karen, Rakhaing, Mon, Chin and Kachin are most spoken languages in Myanmar (Lwin, 2021). Therefore, the opportunities available to those who are able to speak local language alongside Burmese. Participant B, C, D, F, H, I and J mentioned that students who communicate only in Burmese are almost impossible to find a job in ethnic communities. Language helps people to get a job not only in term of communication and translation but also in term of networking opportunities (Hoominfar, 2014).

The second long term disadvantage of monolingual education is a high dropout rate. Language of instruction plays an important role to keep students actively engaged in learning. Due to the language barrier between students and teachers, most students later on lost interest in studies. Since the schools could not create a happy and equal learning environment, the students therefore choose to get out of school. In this case, six participants reported that when the school cannot support the student to create a better future, students choose to leave the school to explore their future. Paing (2019) also pointed out that after financial problem, language barrier is the main reason in pushing children out of school in Myanmar. The growing of language barrier in schools has catalyzed the growth of obstacles for students engaging in education.

The third long term disadvantage of monolingual education is slow cognitive development. When the children are being taught in one language or the contents in the textbooks are based on one culture, students are unable to think from different perspectives. Moreover, without understanding the medium of instruction in schooling, children cannot develop the new knowledge, skills, and critical thinking. For example, participant F claimed that learners who rely on only one language in learning are properly slow to develop their critical thinking and problem-solving skill. Cognitive development occurs largely when the children have the opportunities to learn in various range of cultural environment and languages (Sepulveda, 1973).

In order to fill the language gap or to improve the education system in Myanmar, several studies suggested that Myanmar better to implement Mother Tongue Based-Multilingual education (MTB-MLE). Most ethnic education personnel believe the school should approach with mother tongue-based learning in early grades in order to be effective in learning the common languages such as Burmese and English (South, & Lall, 2016). Moreover, Gervais, and Raynaud (2020) also proposed that Myanmar should introduce the MTB-MLE to preserve linguistic and cultural diversity, to improve access to and quality of education, and to promote national cohesion.

5.2 Mother Tongue Based-Multilingual Education for a better education system

As the country focuses on developmental goals, there are always groups of people who are being left behind physically, socially, and politically. In order to address this challenge, Myanmar should adopt the mother tongue based-multilingual education system. Even though there are only one third of population of Myanmar seeks to be advantaged form MTB-MLE, in practice it helps both student from ethnic groups and Burmese students (ENAC, 2018). MTB-MLE is needed in order to prevent further marginalization of the

poor and vulnerable communities especially for those people who live in ethnic communities. Patrinos (2016) claimed that MTB-MLE aims to reduce the education gaps between dominant groups and minority ethnic and expand education access and quality. ENAC (2018) also mentioned that MTB-MLE intends not only to improve education system in Myanmar but also to support peace building of the nation in the future. Therefore, this study discusses three reasons why Myanmar should implement MTB-MLE that would help to improve education system in Myanmar.

The first reason is that MTB-MLE promotes all-inclusion education, which is an education system reflects to the diversity of the country included culture, literacy, and identity. Under MTB-MLE system, the school will use the language or the languages student the most familiar with. This creates a learning environment where all student can actively participant in and freely share their thoughts and ideas among their friend and with their teachers. Five participants mentioned that the schools are responsible to provide equal learning opportunity for each of the student. MTB-MLE aims to provide an effective learning environment for all children (Asia-Pacific Multilingual Education Working Group, 2013). Beside the language, it also advocates for cultural education which promote the cultural diversity of the country. Participant A and D claimed that MTB-MLE is more than changing the language in the textbook and for the test. It is about reforming the curriculum and teaching technique that reflect to cultural diversity. At school, the students will learn not only the language but also about the diverse cultures of the country. As the result, the new generation will show positive attitudes to minority and indigenous culture (Ball, 2011). Moreover, MTB-MLE also support gender equity. When the school uses the local language or the mother tongue of the learners, it develops self-confidence for girl to believe in their ability in learning (Malone, 2018). The advantage of implementing MTB-MLE is not only increasing the rate of women participation in education but also it provides a space for women to share their ideas and thoughts (ENAC, 2018).

The implementation of MTB-MLE required to develop different curriculum in different regions as it bases on the needs of the children. In contrast, it also becomes challenges for education stakeholders to provide effective learning environment and equal education standard under different curriculums (Cabansag, 2016). However, Hunahunan (2019) reported, after analyzing the Philippine's MTB-MLE curriculum, that the committee was struggled to develop curriculum and learnings materials as it had limited time. But the curriculums later were very much observed by teachers in term of improving the teaching and learning for students in long term. Even though the country implements different curriculums under MTB-MLE, it still has equal standard. For example, the Philippine uses equal curriculum guide in order to have equal standard in education (Bercasio et als, 2016).

The second reason is MTB-MLE provides education quality. MTB-MLE is more than changing the language in teaching. It also facilitates to reform the curriculum based on the needs of the students and their background. Most ethnic education stakeholders want mother tongue-based education not as a subject but as a language of teaching because they believe MTB-MLE would improve access to and quality of education. For example, participant C reported that the education system will not be changed if mother tongues are allowed to teach as a subject at public school. Mother tongue based-multilingual education system aims to enhance students' critical thinking and cognitive development (ENAC, 2018). The classroom using multilingual education allows students to be themselves and develop their personalities as well as their intellects, unlike monolingual classroom where most students sit silently and repeat after the teachers (Benson, 2004). Therefore, this system improves students' confidence, self-esteem, identity, initiative, and motivation as well as creativity. The finding also highlighted that developing new teaching strategy, learning material and the contents of the subjects that are based on cultural diversity, are a part of implementing the MTB-MLE.

The third reason is that MTB-MLE interns to decentralize education system. According to 2008 constitution, the education system in Myanmar is highly centralized. The state uses centralized curriculum and single textbook for all schools throughout the country (Lwin, 2021). By adopting the mother tongue based-multilingual education in Myanmar, the education system can be decentralized as it shares the power to local government to manage the local schools within its community. In this case, participant A explained that if the country implemented MTB-MLE system, the local government would have the right to make decision in education alongside State government. Under MTB-MLE system, the state government mainly

focus on monitoring and technical supports while the local government are responsible for administration and school management (ENAC, 2018). To implement the multilingual education successfully, the government need to build up the partnership between the state and non-state education providers because the local people know better the need of the students and cultural background. Therefore, MTB-MLE is intended to decentralize the education system in term of sharing the power and responsibility.

These are three main reasons why MTB-MLE is needed in order to bring a better education system in Myanmar. Even though teaching ethnic language as a subject could not bring any changes for Myanmar education system, mother tongue based-multilingual education will become one of the best approaches to develop equal access to and quality education. Since it also promotes a decentralized education system, the country will be able to create a peaceful learning environment.

6. Conclusion

To conclude this research study, the researcher has found that the long-term advantages and disadvantages of the current language education policy in Myanmar, monolingual education, for students to support their further studies and profession development. Moreover, the researcher also provided the reasons why Mother Tongue Based Multilingual Education (MTB-MLE) should be implemented in Myanmar.

6.1 Long-term advantages and disadvantages of monolingual education policy

Regardless of their first languages, cultures and backgrounds, all students in Myanmar have been taught in the Burmese language as the result of the monolingual education policy. The medium of instruction plays crucial role for students to learn effectively. This research found that all students have received the same standard of education and being comfortable to speak Burmese as the long-term advantages of monolingual education. On the other hand, students are facing with many challenges to achieve an access to education, quality education, and cognitive and effective development due to language used in teaching at schools. This concludes that in the long-term, even though monolingual education policy politically shows the positive signs, it cannot be an effective language education policy for Myanmar. Therefore, monolingual education policy from learners' perspective, it has more disadvantages than advantages.

6.2 Mother Tongue Based-Multilingual Education (MTB-MLE)

Mother Tongue-Based Multilingual Education (MTB-MLE) system is an education system that aims to achieve mutually beneficial results for both Burmese students and students from other ethnic groups. Students are struggling with many problems in learning due to language barriers and the current curriculum. In order to minimize these ineffective learning cultures, MTB-MLE is proposed as an education system to help Myanmar to develop a better education system. This research study found that MTB-MLE will help Myanmar to promote a better learning environment where every student can engage in learning, to provide quality education, and to introduce a significant step towards decentralization in the field of education. Therefore, the Mother Tongue-Based Multilingual Education System is an approach that practically can provide equal opportunity in leaning for all ethnicities in Myanmar. As the beneficial of teaching through MTB-MLE, it guarantees for minor ethnic groups to maintain and promote their languages and cultures. Moreover, the cooperation between state and local government can build a strong relationship among government members. Therefore, by MTB-MLE, the country will be able to develop harmonious and peaceful education system.

7. Recommendations

The education system in Myanmar is designed in one format of curriculum, textbook, and the assessment method in order to provide equal education. Using the same format of education does not mean proving equal access to education. Instead, it develops more challenges for the students from minor ethnic groups and from rural communities in learning as the government ignored the cultural diversity of the country. The scholars around the world pointed out that Mother Tongue Based-Multilingual Education (MTB-MLE) is one the approaches that can improve access to and quality education. The education system including curriculum, textbook and the assessment methods, should be reformed to provide a better education for new

generation. Therefore, the following recommendations are hereby made to develop a better education system in Myanmar.

7.1 In order to support the learning of marginalized children, the main recommendations are:

- The medium of instruction should be used the language students most familiar with to enhance students' engagement in classroom and facilitate the interaction between teachers and students which are considering as the most basic for effective learning.
- The government should assist more financial support as well as technical support to informal education which are administrated by ethnic education providers in order to provide a quality education for children in conflict affected communities.
- The government should outline the procedures for the assessment and recognition of non-formal education to help marginalized students to undertake further studies.

7.2 In order to implement MTB-MLE in Myanmar, the main recommendations are:

- The preliminary research needs to be conducted in each language community to ensure the number of languages most used in a community.
- Myanmar should use different approaches for implementation of MTB-MLE such as approach based on State or Region, approach based on ethnicity and approach based on school, to reflect the cultural diversity.
- The government, scholars, Non-government Organizations and ethnic education providers should work together to draw the curriculum and instructional materials for MTB-MLE.

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Investigating the Needs and Challenges with regard to English Communicative Competencies in the Thai Hospitality Industry

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Abstract

This study aimed to investigate the need for communicative competencies in the hospitality industry, including hotel, tourism, and aviation, in Thailand, and problems with regard to the use of English in the industry. A total of 233 participants took part in the research: 70 from the hotel industry, 72 from the tourism industry, and 91 from the aviation industry. They were recruited using purposive sampling technique, and a mixed-methods research design was employed. To collect data, a Likert-scale questionnaire relating to English communicative competency in hospitality was used. Semi-structured interviews were then piloted and used. A backtranslation technique was employed to ensure the accuracy of the translation from English to Thai. The value of the alpha coefficient's reliability for the questionnaire was 0.85. The quantitative data was analyzed using percentages, means, and standard deviations, while the semi-structured interview transcripts were analyzed using content analysis. The findings revealed that the most significant communicative competencies in the hospitality industry in order of importance are interactional competency, strategic competency, and socio-cultural competency. The problems associated with using English in the hospitality industry included cultural differences and technical vocabulary. Moreover, awareness of the power of non-verbal language is perceived as being equally important for communicative competency.

Keywords: *needs analysis; English communicative competency; hospitality industry*

1. Introduction

Thailand is one of the world's best-known tourist destinations (Bernstein, & Woosnam, 2019), and the hospitality industry represents one of the most important industries, contributing significantly to the national economy (Jhaiyanuntana, & Nomnian, 2020). It ranks among the largest revenue-generating industries in the Thai economy, as Thailand's inbound tourism attracts a significant number of foreign visitors who are typically and warmly welcomed and pleased by the services provided by the industry (Office of the National Economic and Social Development Board, 2017). The significance of service quality in the hospitality industry cannot be overstated, as it plays a crucial role in establishing a sustainable competitive advantage and fostering customer trust in a fiercely competitive market (Al-Ababneh, 2017). For this reason, the Office of National Higher Education Science Research and Innovation Policy Council recently launched the idea of targeting a new set of five S-curve industries in terms of human resources. These industries are biofuels and biochemicals, the digital industry, aviation and logistics, wellness and medical devices, and automation and robotics. These industries are needed to train the people who will drive the future of the country.

Although tourism is one of the fastest-growing industries, Thailand is one of many countries where tourism experts need to improve their English language skills (Alomoush, & Al-Na'im, 2018). Moreover, the effect of service encounters depends on the manner in which personnel engage in direct and indirect communication with clients, as misunderstandings may arise as a result of divergent religious beliefs and values among tourists (Al-Ababneh, 2017). As a result, it is imperative that, to stay ahead of the competition and to adapt to shifting globalization patterns, technological advances, and consumer preferences, businesses in the service sector need to invest in training and developing their employees (Bas Collins, 2007). Since the

travel and leisure industries rely heavily on the English language (Trang, 2015), the ability to express oneself fluently in English is one of the skills that are currently required in the hospitality industry.

Among other professional competencies, communicative competency is a critical part of the hospitality industry. However, a lack of English proficiency could make it difficult to attract tourists and keep them satisfied (Sermsook, Nakplad, & Jantawong, 2021). In addition, in the current global economic climate of heightened competition and rapid change, it is crucial for hospitality students, managers, and educators to comprehend the competencies necessary for success on the part of the industry leaders of tomorrow (Suh, West, & Shin, 2012). As a result, there has been an increase in efforts all around the world to train those who work in the tourism industry to communicate effectively in English (Ho, 2020).

Hospitality-related research has long been of interest to researchers. Sermsook et al. (2021) study concentrated on examining English language usage issues among tourism workers, as well as identifying areas for improvement. In a broad sense, they found that hotel employees faced a modest level of challenges in effectively communicating in the English language within their work environment. These individuals encountered difficulties when it came to engaging in written correspondence in the English language, specifically with regard to writing letters and emails. The staff members expressed a need to improve their language proficiency in order to effectively communicate with individuals from different cultural backgrounds. Namtapi (2022) investigated the lack of the requisite skills and the needs of English-speaking tourist employees. The results revealed that the majority of participants were required to greet, give directions, provide information, and offer and request assistance. They had difficulty coping with foreign English accents, keeping up with tourists' rapid speech, and acquiring sufficient vocabulary and grammar to hold a conversation. They desired intercultural competence. Jeou-Shyan, Hsuan, Chih-Hsing, Lin, and Chang-Yen (2011) studied the requirements of the hotel's top managers in terms of essential competencies. The findings showed that the most significant competencies were leadership, crisis management, and problem solving. However, little research has been carried out to investigate communicative competences in the hotel, tourism, and aviation industries. Therefore, this study attempted not only to identify the communicative competencies required for each industry, but also to extend further the problems that exist with regard to the use of English in the Thai hospitality industry in general.

This study aims to provide answers to the following questions: 1. What is the most significant English-language communicative competency of the hotel industry in Thailand? 2. What is the most significant English-language communicative competency of the tourism industry in Thailand? 3. What is the most significant English-language communicative competency of the aviation industry in Thailand? And 4. What are the main problems with regard to English communicative competencies for the hospitality industry in Thailand?

2. Objectives

1. To identify needs for communicative competencies in the hospitality industry in Thailand, including hotel, tourism, and aviation.
2. To examine problems associated with using English in the hospitality industry in Thailand, including hotels, tourism, and aviation.

3. Literature Review

3.1 Communicative Competence

As emphasized in English learning programs, successful communication relies on linguistic accuracy. This in turn relates to the employee's awareness of using languages for communication purposes, and using different strategies for producing proficient utterances. It is in this way that communicative goals are achieved (Gałajda, 2012). Canale, and Swain (1980) stated that communicative competence involves grammatical, sociolinguistic, discourse, and strategic competences. The first of these - grammatical competence - covers lexical, phonetic, semantic, and other features in both written and oral speech. Sociolinguistic competence involves the contextual use of utterances in relation to the purposes of the speakers and the interpretations of the listener.

However, Bachman (1990) offers another aspect of communicative competence. He suggests that it comprises three aspects: language, strategic, and psychological competences. This model is portrayed as

concerned with language assessment. This emphasizes the mechanisms of linguistic features and contextual elements regarding adaptability and mentality. The language component includes organizational competence, which involves not only grammatical (lexical, morphological, syntactic, and phonetic as well as phonological) capabilities, but also discourse-related (cohesive and rhetorical) capabilities. In addition, pragmatic competence is another category of language competence that can be subdivided into illocutionary and sociolinguistic competences.

Finally, Ho (2020) concludes that there are six parts to communicative competence in the tourism professions. First, being linguistically competent means knowing how to use phonology, lexicon, semantics, syntax, and other parts of language. The interconnected meanings between sentences constitute discourse competence. The ability to interpret underlying messages by reading between the lines in texts is referred to as "sociocultural competence". The ability to recognize problems incurred in communication with others and implement treatment for those types of miscommunications are referred to as "strategic competence". Interactional competence is the ability to perform speech tasks in various situations, and make conversation with gestures. Finally, formulaic competence is the ability to match appropriate phrases and dialogues in a systematic manner.

3.2 English for Hospitality

English, as an international language, has been widely used in the hospitality industry by visitors and service providers throughout Asia. Kongtham (2020) conducted a needs analysis among hotel staff working at five-star hotels in Phuket, Thailand. It was found that the importance of apologizing in English was followed by welcoming and greeting, as well as offering help, giving directions, and explaining services and the accommodation provided. Furthermore, listening to customers' needs, clarifying mistakes, and reading industry-specific information were rated as being equally important. Meanwhile, writing in logbooks was rated as more significant than writing requests, suggestions, correspondence via emails, faxes, or telexes, form completion, or other information related to hotel transactions. Similarly, reading business correspondence was found to be more crucial than reading travel information, restaurant menus, all kinds of manuals, hotel advertisements, and news scoops items. At the same time, listening to specific information about guests was rated as being more significant than dealing with varied accents, receiving phone calls, and listening to audio advertisements for the hotels. These findings partially agree with those of Prima, Hartono, and Riyanto (2022), which revealed that Indonesian hotel staff rate listening skills as the most important, followed by speaking skills. Meanwhile, reading and writing skills were perceived as being equally significant for communicating in English at work. In addition, vocabulary was rated more important than grammar in both writing and speaking.

The impact of hotel and tourism services on the world economy was emphasized by the personnel in Mantra, Widiastuit, Handayanai, and Pramawati's mixed-method study (2020), in which describing attractions, offering directions, making suggestions, arranging schedules, and dealing with feelings, as well as particular communicative strategies, were all important to tourism staff in Bali, Indonesia. In addition, they needed cultural as well as historical knowledge along with grammatical structures for developing speaking skills in various genres, such as public speaking and conversation. With regard to the specific tasks relating to the work of a hotel receptionist, it was found that they needed to use English for check-in and check-out purposes. Namtapi (2022) investigated the needs of English-speaking tourism employees and found that the majority of participants were required to greet, give directions, provide information, and offer and request assistance. They had difficulty recognizing foreign English accents, keeping up with tourists' rapid ways of speaking, and acquiring sufficient vocabulary and grammar to hold a conversation. They desired intercultural competence. According to Dhyani, Gairola, and Dimri (2022), the branded chain hotel personnel in Uttarakhand, India ranked English language proficiency as the top need, followed by non-verbal communication and interpersonal skills.

4. Materials and Methods

4.1 Research Design

Concurrent mixed-method designs were used to investigate the English communication competency for hospitality industry personnel. Stakeholders in the hotel, tourism, and aviation industries were asked for

both qualitative and quantitative information. A questionnaire on English communicative competency was distributed in order to obtain quantitative data. Semi-structured interviews were then conducted to obtain qualitative data. Figure 1 illustrates the research methodology.

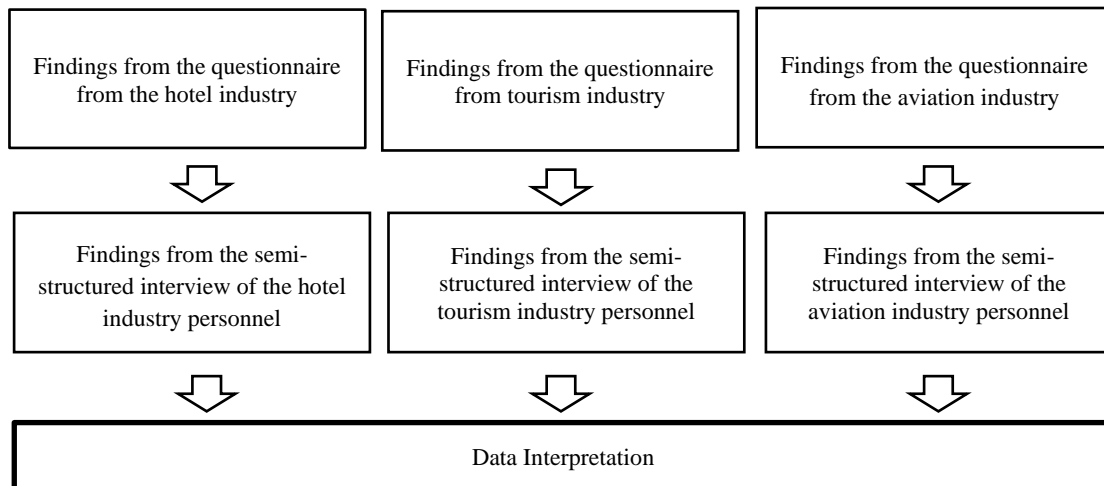


Figure 1 Research design

4.2 Population and Sampling

In this research there was a total of 233 participants, including 70 from the hotel industry (30.04%), 72 from tourism (30.90%), and 91 from the aviation industry (39.06%). Participants were recruited using purposive sampling. The first group worked in the hotel industry as supervisors and front-line employees at six five-star hotels in the Pattaya and Bangsaen districts of Chonburi Province, where they primarily interacted with foreigners. In addition, the participants in the second group were experienced freelance tour guides and tour operators in the tourism industry in the Bangkok area. Finally, the other group of participants worked in the field of aviation and included passenger service agents, flight attendants, and in-flight service managers from Thailand and Hong Kong-based premium airlines. Overall, the participants volunteered to take part in the study in order to share their perspectives on English communicative competencies in the hospitality sector.

4.3 Research Instruments

The instruments employed in this study consisted of a questionnaire and semi-structured interviews. The qualitative research instrument, including the 7-point Likert scale questionnaire of English communicative competency in hospitality, has been adapted from Ho (2020), and contained three main parts: 1) demographic information; 2) communication skills; and 3) recommendations. It has the same question items under three different headings: hotel, tourism, and aviation. There are 27 items in total. The second part was split into seven parts: overall communicative competence, linguistic competence, discourse competence, sociocultural competence, strategic competence, interactional competence, and formulaic competence. The question items were initially written in English before being translated into Thai. Back translation was used to verify the data's validity and reliability. The Rajamangala University of Technology Thanyaburi Human Research Ethics Committee approved the procedure and protocol with regard to conducting this study. The test items were validated by three experts and then piloted with similar group of samples. The value of the alpha coefficient's reliability is 0.85.

The qualitative research instrument involved semi-structured interview questions that were used to triangulate the findings from the questionnaire data from the point of view of stakeholders in the hotel, tourism and aviation industries. The key question list was applied to individual interviewees from these industries. In addition, consecutive queries were asked to clarify their answers.

1. Which English communicative competency in hospitality is the most important?

2. Which English communication skill in hospitality requires improvement?
3. What are the problems that operational personnel encounter when interacting with customers?

The interviews were conducted both on-site and online through voice calls, and were recorded with the interviewees' permission. The process of the interview involved initially addressing a general topic so that the interviewee felt relaxed. The researcher then gradually asked the main interview questions by encouraging the interviewees to utilize their direct experience to answer the questions. The interview ended with the researcher expressing gratitude for the participant's contribution to the study. The duration of the interview was 8–10 minutes. The experts validated the validity of the content of the interview questions following the interview process.

4.4 Data Analysis

The research questions can be answered by utilizing both quantitative and qualitative methods to determine the most important English communication competencies for Thai hospitality. Consequently, both questionnaires and semi-structured interviews were employed. According to Allen and Seaman (2007), the quantitative data of the 7-point Likert rating scales can be calculated and interpreted as follows:

Class interval	=	Upper class limit - Lower class limit/ number of interval
	=	$(7-1) / 7$
	=	0.86
<u>Mean</u>		<u>Interpretation</u>
6.21 - 7.00		Very important (VI)
5.35 - 6.20		Important (I)
4.48 - 5.34		Slightly important (SI)
3.61 - 4.47		Neutral important (NI)
2.74 - 3.60		Slightly unimportant (SUI)
1.87 - 2.73		Unimportant (UI)
1.00 - 1.86		Very unimportant (VUI)

The questionnaire dealing with English communicative competency in hospitality was analyzed through descriptive statistics, including mean and standard deviation. In addition, content analysis was used to analyze the qualitative data from the semi-structured interviews.

5. Results and discussion

The overall communicative competencies of the hotel, tourism, and aviation industries are shown in Table 1.

Table 1 Overall of communicative competencies

Communicative competencies	Hotel (n=70)			Aviation (n=91)			Tourism (n=72)			Total (n=233)		
	M	S.D.	Level	M	S.D.	Level	M	S.D.	Level	M	S.D.	Level
Overall, I think that communicative competence in English is important	6.01	1.20	I	6.73	0.56	VI	5.76	1.48	I	6.21	1.18	VI

The importance of English communicative competence in hotels and tourism was indicated by a mean score of 6.01 and 5.76, respectively, which indicate a high level of satisfaction. In the case of the aviation industry, the mean score is 6.73, indicating a very important level. Next, the specific communicative competencies can be shown in Table 2.

Table 2 Specific communicative competencies

Communicative competencies	Hotel (n=70)			Aviation (n=91)			Tourism (n=72)			Total (n=233)		
	M	S.D.	Level	M	S.D.	Level	M	S.D.	Level	M	S.D.	Level
Linguistic competence	5.01	1.40	SI	5.93	0.55	I	4.63	1.52	SI	5.27	1.32	SI
Discourse competence	5.03	1.41	SI	5.91	0.66	I	4.60	1.60	SI	5.24	1.36	SI
Sociocultural competence	5.08	1.35	SI	5.97	0.63	I	4.66	1.52	SI	5.28	1.31	SI
Strategic competence	5.04	1.39	SI	6.44	0.64	VI	4.71	1.77	SI	5.48	1.51	I
Interactional competence	5.17	1.33	SI	6.49	0.45	VI	4.72	1.65	SI	5.55	1.43	I
Formulaic competence	4.90	1.42	SI	5.90	0.73	I	4.53	1.75	SI	5.17	1.43	SI
Total	5.07	1.30	SI	6.16	0.41	I	4.66	1.54	SI	5.37	1.32	I

Table 2 shows how hotel, aviation, and tourism personnel perceived the significance of communicative competence in terms of their linguistic, discourse, sociocultural, strategic, interactional, and formulaic skills. For all three industries, the average score for all communicative skills was 5.37, which was at a highly important level. The top three highest mean scores were with regard to interactional, strategic, and sociocultural competences: 5.55 (important), 5.48 (important), and 5.28 (slightly important), respectively.

The mean score for overall competencies in the aviation industry was 6.16, indicating an important level. The mean scores for interactional and strategic competence were 6.49 and 6.44, respectively. However, the mean score for all competences in the tourism industry was 5.37, indicating a slightly important level. The mean scores for interactional and strategic competence were 4.72 and 4.71, respectively. Finally, the average score for overall competence in the hotel was 5.07, indicating a slightly important level. Each communicative competency in the hotel industry was also reported to be of slightly greater importance. Interactional competence had the highest mean score (5.17), followed by sociocultural competence (5.08).

Regarding the findings from the semi-structured interviews, there were 20 key informants, including 8 in the hotel industry from managerial positions and 12 from the guest service departments. In the aviation industry, the key informants included 5 passenger service agents, 5 flight attendants, and 10 senior flight attendants. However, there were only 10 key informants in the form of freelance tour guides involved with the interviews as the epidemic of COVID-19 affected the majority of the country's tour activities. The interview process was discontinued when data saturation was achieved.

In all three industries, the most important communicative skill is the ability to interact with others. Hotels and tourism ranked strategic and socio-cultural competence second and third, respectively. In the aviation industry, socio-cultural competence and strategic competence were ranked second and third, respectively. Table 3 below demonstrates the themes and subthemes regarding the most significant communicative competence for the hotel, tourism, and aviation industries.

Table 3 Subthemes of significant communicative competencies

Themes	Industry	Opinions
Interactional competence	Hotel	Establishing good relationships with customers Making customers feel happy and relaxed Providing accurate information Expressing good intentions and sincerity
	Tourism	Making good introduction Making customers feel welcome Gaining the trust of customers
	Aviation	Making a good impression Applying appropriate verbal and non-verbal language
Strategic competence	Hotel	Dealing with challenges Expressing sincerity when solving problems Avoiding giving wrong information

Themes	Industry	Opinions
Socio-cultural competence	Tourism	Using tactful expressions when finding solutions
		Using appropriate terms to deal with problems
		Using polite expressions that create a good relationship with customers
	Hotel, Tourism and Aviation	Being knowledgeable when giving specific terms to avoid miscommunication
		Being aware of cultural differences
		Using appropriate words when communicating with customers
		Avoiding sensitive words and topics
		Understanding and speaking with respect to cultural differences

In the hotel industry, it is vital that individuals establish positive relationships with guests. They should endeavor to make guests feel comfortable and welcome. Additionally, any provided information and other important messages must be conveyed precisely to the hotel guest. Therefore, interactional competence was considered a fundamental requirement for hotel staff, including the ability to provide information, negotiate with guests when providing services, and communicating effectively in terms of the basic language functions. Interactional competence also emerged as an important aspect of communicative competence, but it also incorporates strategic competence, which ranks second. Hotel staff must be knowledgeable in order to address problems. They should be able to use expressions to solve problems. The following excerpt provides an example of the supervisors' responses regarding the most essential communicative skill for hotel staff.

Excerpt 1

Pop (hotel manager): "I think that interactional competence is the most important skill that hotel employees should have because giving information, apologizing, and negotiating are all basic skills that we must learn when talking to guests. It is our routine when guests arrive at our hotel. We greet them, give them the necessary information, and most importantly, we make them feel welcome."

Interactional competence is also regarded as very important in tourism. It is essential that tour guides create a good first impression. They must know how to gain the trust and confidence of the tourists. Therefore, they should know how to provide correct information, so dealing with tourists should begin with appropriate greetings and important information to avoid confusing them. Excerpt 2 is an example of an answer from a freelance tour guide regarding the most important form of communicative competence for tourism.

Excerpt 2

Keng (freelance guide): "I am convinced that the most important aspects of tourism are a good introduction and good interaction with customers. If we communicate effectively with them, including by providing accurate information, being friendly, and observing universal manners, we will gain their trust when we ask for their cooperation. It will be less difficult. As a result, none of this will be possible without good customer interaction."

Even though interactional competence is the most important communication skill, insightful information is also important in the field of aviation. Since airline workers often meet passengers from different parts of the world, they should also be able to interact with people from different backgrounds. They should be aware of the level of the language used because there are different classes in the aircraft, and the level of formality in the use of language depends on which class they work in. Furthermore, they emphasize the importance of nonverbal language as well as language level. It is meaningless if they speak beautiful English with an inappropriate facial expression. Excerpt 3 and 4 provide examples of the importance of communicative competence in the field of aviation.

Excerpt 3

Jeab (senior flight attendant): "I agree that the most important skill is interactive competence. It is fundamental that we use language to greet, inform, and apologize. However, we must be aware of language and culture because we will be meeting passengers from all over the world and must

interact with them in the appropriate language. Even if we use the wrong words with the passengers, even if we don't mean to, it will cause unnecessary problems. As a result, when communicating with them, we must be mindful of cultural differences."

Excerpt 4

Nui (passenger service agent): "Language use is incomplete without a balance of nonverbal language. In my opinion, nonverbal communication is more important than perfect language. No matter how well you speak the language, good body language is essential."

It is evident that the interactional aspect of communicative competence was the most significant in all three disciplines. To maintain effective communication in English, service personnel in the hospitality industry must be able to inform, inquire, pacify, apologize, negotiate, and clarify effectively, since this is the foundation of the communication that they, as a service provider, should be able to provide at the outset in order to interact effectively with customers. This is in line with Kongtham's (2020) study, which indicates that speaking skills are crucial for tourism employees in terms of providing information, service, and additional assistance. In addition, these results align with the findings of Jiang, and Alexakis (2017) who identified oral communication as the most important skill for hospitality students to possess when interacting with clients. Moreover, Suh et al. (2012), in a study of the communicative competence of hospitality managers revealed that interactional competence in terms of communicating with guests effectively was listed as the top priority.

Strategic competence was found to be the most important strategic skill in the aviation and tourism industries. In the hotel business, it was the third-most important competence after sociocultural competence. This may be due to the fact that staff in the aviation industry are required to be aware of the language proficiency of passengers who are prepared to pay more for a more comfortable cabin. Hence, it is essential for them to equip themselves with adequate game plans for dealing with passengers in different areas of the aircraft and addressing passengers' problems, given the limited resources available onboard. Moreover, with regard to employees in the field of tourism it is necessary to maintain good relationships with customers since they have to spend a good deal of time interacting with one another. They are required to use appropriate strategic plans to communicate, such as making appointments and confirming information. This also highlights the problems of the hotel staff in Firharmawan, and Andika's (2019) study, and tourism staff in Kongtham's (2020) study, which included unfamiliar linguistic features in oral communication with foreign visitors and dealing with unknown vocabulary. In addition, the international clientele of Thai full-service restaurants praised the staff's communication skills (Chewwasung, 2020). The participants emphasized the importance of vocabulary and technical terms as components of linguistic competency for staff in the aviation industry, since they deal with passengers, flight information, and safety regulations.

However, the hotel staff placed the sociocultural aspect in second place behind interactional competence. This might be because such employees encounter a range of customers with cultural differences who may have different requirements. Therefore, they need to identify and resolve miscommunications that may occur when dealing with customers of various cultural backgrounds. For example, some expressions might sound inappropriate when used with certain customers. This is in accordance with the findings of Jeou-Shuyan et al. (2011) who discovered that the ability to solve problems was a crucial element, especially for managerial-level staff in the hotel industry. As the hotel employees expressed concern with regard to the use of correct expressions with multi-cultural guests, personnel in the field of aviation were most likely to encounter multi-cultural passengers, while the tourism employees were more likely to demonstrate sociocultural competence in relation to social status and distance, as they may spend long periods of time with their guests during tour programs and vacations. These are all in line with the findings of Suh et al. (2012) who expressed the view that hospitality personnel in contemporary workplaces use English for international communication with people of various cultural backgrounds.

The findings of the semi-structured interviews also revealed that communication challenges are encountered in the hospitality industry that might hamper effective communication. Table 4 illustrates the problem of communicative competence in the hotel, tourism, and aviation industries. When it comes to communicating with customers, staff in the hotel, tourism, and aviation industries all have similar problems and worries. The main focus is communication issues, and there are three subthemes: cultural differences, technical vocabulary, and the influence of body language on communication.

Table 4 Subthemes of problems in communicative competencies

Subthemes	Areas/opinions in hotel, aviation, and tourism
Cultural differences	Different accents Fast speakers Misinterpretation due to cultural differences Limited English proficiency
Technical vocabulary	Misunderstanding of technical terms Restriction on necessary expressions Wrong word choice
Impact of body language	Communication enhancement Additional methods to convey meaning Additional methods to express sincerity

It was observed that hospitality workers faced challenges when it came to communicating with customers when they had to deal with different cultures. It was stated that most people who worked in the hospitality industry didn't understand people who spoke quickly or had different accents. They claimed that they could not understand the meaning of what they were saying and frequently misinterpreted them. In addition, the cultural differences frequently caused issues because staff sometimes responded too quickly to the customers' needs without paying attention to the details. When they listened to customers what they heard was not always accurate, so they had to be cautious and, if necessary, request clarification to avoid misinterpretation. Last but not least, some non-native English-speaking foreigners did not always speak English well, so it was helpful to learn third languages such as Mandarin and Japanese. As a result, they could better understand the clients' basic needs.

Next, the subtheme of technical terminology affects customer communication. This section provides examples of two hospitality employees describing the challenges they face due to a lack of technical terminology. According to the interview data, developing a strong vocabulary was advantageous for all hospitality personnel because it enabled them to choose and use words to communicate effectively with customers. If they had a larger vocabulary, they should be able to use the language more fluently if they encountered any challenges. Some words could be useful in the field, and it was a good idea to learn them so they felt more confident when dealing with problems.

Excerpt 5

Nong (hotel front desk): "A small vocabulary is also a problem because most of the words are technical, and customers often ask questions we can't answer because we don't know the right words to get the message across."

Excerpt 6

San (flight attendant): "I don't understand the customers because they are from different countries and use different words, such as "blanket." I need to learn what each continent's word for "blanket" is."

Strong verbal language improves communication, but facial expressions, the appropriate tone of voice, and proper posture, also appeared to be helpful communication tools. Frequently, non-verbal language supported staff in resolving issues with customers because it allowed them to express their sincerity more effectively than words. Furthermore, they stated that good body language enabled them to communicate effectively with customers; for example, when customers were upset about receiving incorrect messages, their smile and open body language assisted them in explaining how they wished to express regret rather than repeatedly apologizing. Excerpt 7 and 8 illustrate some of the advantages of using body language to improve communication.

Excerpt 7

Koi (senior flight attendant): "Problems always happen when we misunderstand what passengers say and act in a way they don't expect, so complaints are always caused by these things. Body language is important because it can help us communicate our true intentions to the passenger."

Excerpt 8

Nut (hotel front desk): "Inappropriate body language is always at the root of problems. We say nice things, but our facial expressions don't match. When we communicate with the guests, they may notice that we are not sincere."

Concerning communicative issues, both of these respondents are of the opinion that they emerge as a result of cultural differences, lack or misuse of terminology, and the use of inappropriate body language. A lack of vocabulary, rapid speech, and varying accents made it difficult to comprehend what is being said. The majority of employees thought that exposure to the use of language enhanced their ability to comprehend and respond to the needs of their customers. This agrees with the results of Namtapi (2022), which indicate that foreign English accents are one of the major concerns for tourism personnel, and those of Khuong (2015) which showed that the lack of opportunities to use language in real-world situations led to poor communication outcomes. The amount of time spent learning a language may lead to improved communication skills when it is necessary to talk to people from different cultures.

In addition, the effort to improve communication relies not only on the opportunities to use the language, but also on the comprehension of technical terms pertinent to the respective field. This is due to the fact that it is the predominant mode of communication in working communities. A poor choice of words increases the likelihood of misinterpretation, not only with coworkers but also with customers. This fits with what Prima et al. (2022) found, which was that vocabulary was seen as the most important aspect of good communication. Lastly, nonverbal communication could not be ignored. The open-ended responses associated with nonverbal language support effective communication. In addition to other communicative skills, participants in this study noted that effective communication requires body language such as eye contact and facial expressions. This supports the findings of Dhyani et al. (2022) who found that non-verbal language and interpersonal skills were also important for communication.

6. Conclusion

This study investigated the needs for communicative competencies in the Thai hospitality industry, including the hotel, aviation, and tourism sectors. Interactional competency emerged as the top competency for interacting with customers in all fields. Moreover, strategic competence, which refers to the ability to recognize problems incurring in communication with others and to implement treatments for types of miscommunications, was essential for the hotel and aviation industries, while the hotel industry placed second priority on sociocultural competency as they have more need to interact with hotel guests due to the duration of their stay. Regarding the challenges resulting from awareness of cultural differences, knowledge of technical terminology, and the appropriate use of body language, these could be considered the prerequisites for ensuring effective intercultural communication.

The findings of this study indicate that interactional competency is of considerable importance within the hotel, airline, and tourism sectors. Therefore, it is necessary to incorporate the fundamental principles of utilizing suitable language patterns to meet the requirements of staff in these sectors. For example, it is of paramount importance that hospitality employees possess adequate problem-solving abilities, as relying solely on basic discourse may be inadequate in order to effectively address concerns. The capacity to resolve difficulties effectively serves as an indicator of staff professionalism, and has a direct impact on the overall reputation of the hospitality companies concerned. In addition, it is imperative to acknowledge the significance of non-verbal language and cultural awareness, since they are recognized as influential elements that contribute to the effectiveness of communication. In conclusion, it is advisable to examine the linguistic characteristics of the three prominent communicative competences in order to furnish hospitality professionals with a readily available instrument for enhancing their language proficiency.

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The Analysis of Community Resilience and Fire Risk Management: a Case Study of Chiang Mai

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Abstract

The bustling Northern Thai city of Chiang Mai has a number of mixed-use areas, which are spaces of interaction of community and shopping areas, which are known as "Kad" or "Markets". These areas have high densities of commercial and residential activity. These busy and crowded market areas and the communities that have developed in and around them may feature the critical factors that make them "Fire Risk Areas". Therefore, in this study, the researcher studied the variables and physical relationships that led to some of the Chiang Mai market areas becoming fire risk areas, and then performed risk prioritization in the same areas to determine risk classes as key data for managing the areas. The market areas were examined for 7 factors: age of the area, population density, commercial land use, residential land use, type of building material, road networks, and fire station location. A Geographic Information System (GIS) was applied in the study for processing and analysis by determining the weight of each factor and the data type score of the factor. Based on the factor analysis, market areas were classified into 5 classes of fire risk: very high, high, moderate, low, and very low. The results can be used in systematic and logical planning and incident management. Analysis based on the key variables that could cause community fire risks within a radius of 400 meters around the markets revealed that there were 8 areas that met fire risk criteria. Of the 8 markets analyzed, 3 areas, namely communities surrounding Chiang Mai Gate Market, Ming Muang Market, and San Pa Koi Market were at high fire risk, 3 areas, namely communities surrounding Kom Market, Chang Puak Gate Market, and Warorot Market were at medium fire risk, and 2 areas, namely communities surrounding Sriwattana Market and Ton Payom Market were at low fire risk. The classification of fire risks can facilitate risk prioritization and thus lead to better ways of handling serious and less serious risks. Our research can help communities to analyze which areas are at serious risk and need prompt action. Furthermore, the research can be used to plan for risk management in the next phase of development.

Keywords: *Fire risk; Risk management; Surrounding the market; Community Resilience*

1. Introduction

Chiang Mai, one of the provinces in the upper northern part of Thailand, has a history of more than 727 years (built in 1839 B.E.). The city is a vital cultural heritage site of the country, and has a history of the past civilization with values in arts, nature, landscapes, urbanization, architecture, culture, beliefs, and Lanna traditions, along with other key components. It is also the center of economy, trade, education, medical care, transportation, and tourism destination in the North. Thus, the city structure of Chiang Mai portrays the uniqueness caused by the assortment of small neighborhoods, and each often possesses diverse history, culture, political dynamics, and urban development (Daungthima, & Tansukanun, 2018). The city's economic district is one of the reflections of Chiang Mai's development to become a major commercial and tourism center of the country along with a systematic connection according to the concept of Garden City (Simonds, 1994), leading to a spatial relationship between the community and the shopping area, called "Kad" or "market". Its mixed-use resulted in high density in the city's heart, community, and economic areas. The market is a crucial part of life that reflects the combined economic, social, and physical conditions. Momentous connections were formed through human activities (Francis, 1989). This illustrates the way of life of the Lanna people in the north as a source of fascinating civilization and uniqueness, and a connection

in communication and interaction among people in the community as scholars (Fisher, 1985 & Natsupa, 2014) stated that markets and communities are related. A community is influential in creating a sense of belonging for the development of neighborhoods and urban areas as a whole, including physical areas, common ties, and social interactions of members living together in each community (Knox, & Pinch, 2000). Activities that occur in and around the market create a lively environment.

Currently, Chiang Mai has become an economically significant city with an international standard (Chiang Mai Municipality, 2014). Consequently, the neighborhoods have shifted in terms of residential styles, environment, culture in the city, and lifestyles. The distributions of community areas and fresh markets from the past to the present were parallel. For the area with many communities, there will be many markets as a node rather than communities that are horizontally spread out. The fresh market not only plays a role as a source of raw materials which are important to urban life, but it is also an area where urban people in the surrounding communities meet and strengthen relationships while shopping. The nodes of those areas may create opportunities for “Fire Risk Areas”, fire problems or threats caused by a fire that can occur at any time, causing loss of life and property. Most fires occur in residential and densely populated communities or crowded areas. Therefore, community areas and markets are important factors that cause fire risk areas due to crowded conditions, population density, and area density. It was also found that streets and alleys in the community were small and twisted. If there is a fire, it will inevitably cause a charge and is difficult to control. A fire risk planning to determine fire risk areas is therefore vital for area management (Vinnem, 2010).

The study aimed to study the variables and physical relationships that cause fire risk areas in communities surrounding the market in Chiang Mai to analyze risk prioritization in the area and determine the classes of risk for the analysis of community resilience and fire risk management. (Nuthammachot, & Stratoulis, 2021) systematically and rationally (Figure 1).



Figure 1 Research Conceptual Framework

2. Objective

The purpose of this research is to investigate the variables and physical relationships that contribute to the designation of certain areas surrounding the Chiang Mai market as high-risk zones for fires. Subsequently, the researcher will undertake a risk prioritization analysis within these areas to ascertain distinct risk classes. The obtained data will serve as crucial information for effective area management and the development of targeted strategies to mitigate fire risks and fire risk management systematically and rationally.

3. Materials and Methods

Sites description

The research area in Chiang Mai covers an area of approximately 40.216 square kilometers, including 14 subdistricts (Figure 2), and 15 markets scattered in the area, including Chiang Mai Gate Market, Nong Hoi

Market, Ming Muang Market, Ton Lam Yai Market, Warorot Market (Kad Luang), Kom Market, Chang Puak Gate Market, Muang Samut Market, Muang Mai Market, Boriboon Food Market, Siri Wattana Market, Thong Kham Market, Ton Payom Market, Thip Net Market, and San Pa Koi Market (Figure 3).

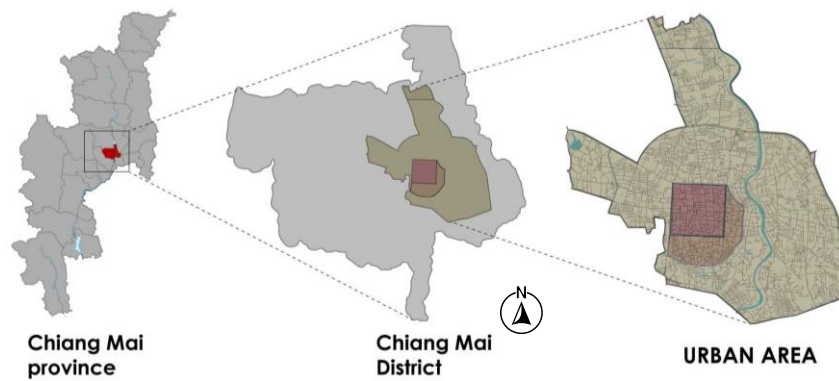


Figure 2 Area Scope of the Study

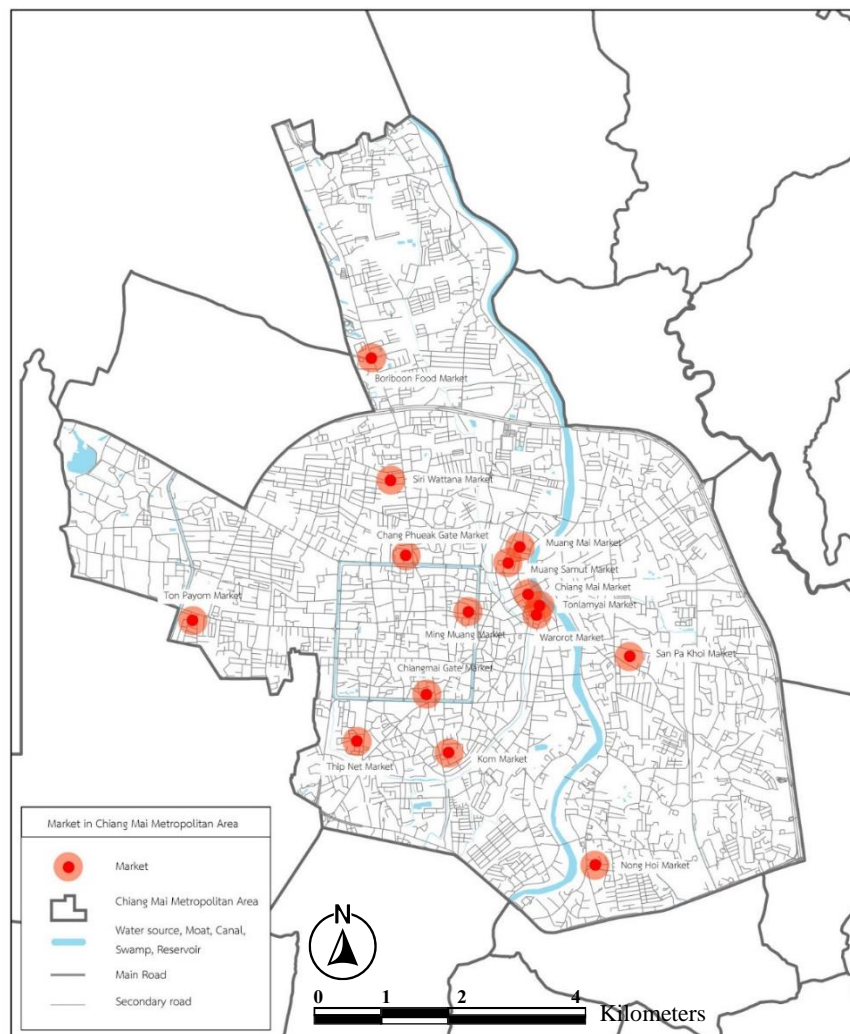


Figure 3 Community Locations Surrounding the Market (Scope of Research)

This research area included a target population in Chiang Mai municipality. The community areas surrounding the market in a radius of 400 meters included 8 areas, namely the communities surrounding Chiang Mai Gate Market, Ming Muang Market, Kom Market, Chang Puak Gate Market, Warorot Market, Siri Wattana Market, Ton Payom Market, and San Pa Koi Market (Figure 4). based on the concept of Garden City. Those areas tended to be the city's economic areas, and consisted of 3 zones of urban areas:

1) **ZONE A** refers to an area with historical significance in Chiang Mai, a historic old town, or an area within the canal square along the boundary of the original city wall. The area contains ancient sites, architecture, fine arts, and temples. Generally, land use consists of residential areas, namely single-family houses, commercial buildings, and commercial hotels, with height limitations in business districts, government places, and religious places. Community areas in ZONE A included Chiang Mai Gate Market and Ming Muang Market.

2) **ZONE B** refers to the old outer city as the essential economic area of Chiang Mai since the past. The area is between the canal in the old city area and the outer old town area. Generally, land use is a combination of very dense residential areas, including commercial buildings, hotels, department stores, business districts, and educational institutions. Studied markets included Chang Puak Gate Market and Kom Market, as well as the largest traditional market, Warorot Market, which has been the center of Chiang Mai's commercial area for a long time (since 1965 - present).

3) **ZONE C** refers to a traditional commercial community ranging from the old outer city up to the boundary of Chiang Mai municipality. Generally, land use is similar to ZONE B but has a lower density of land use. Moreover, there are government organizations and warehouses. Studied markets included Siri Wattana Market (Thanin Market), Ton Payom Market, and San Pa Koi Market. Therefore, ZONE C is another influential economic area due to its source of products and distribution centers to various parts of Chiang Mai and nearby cities.

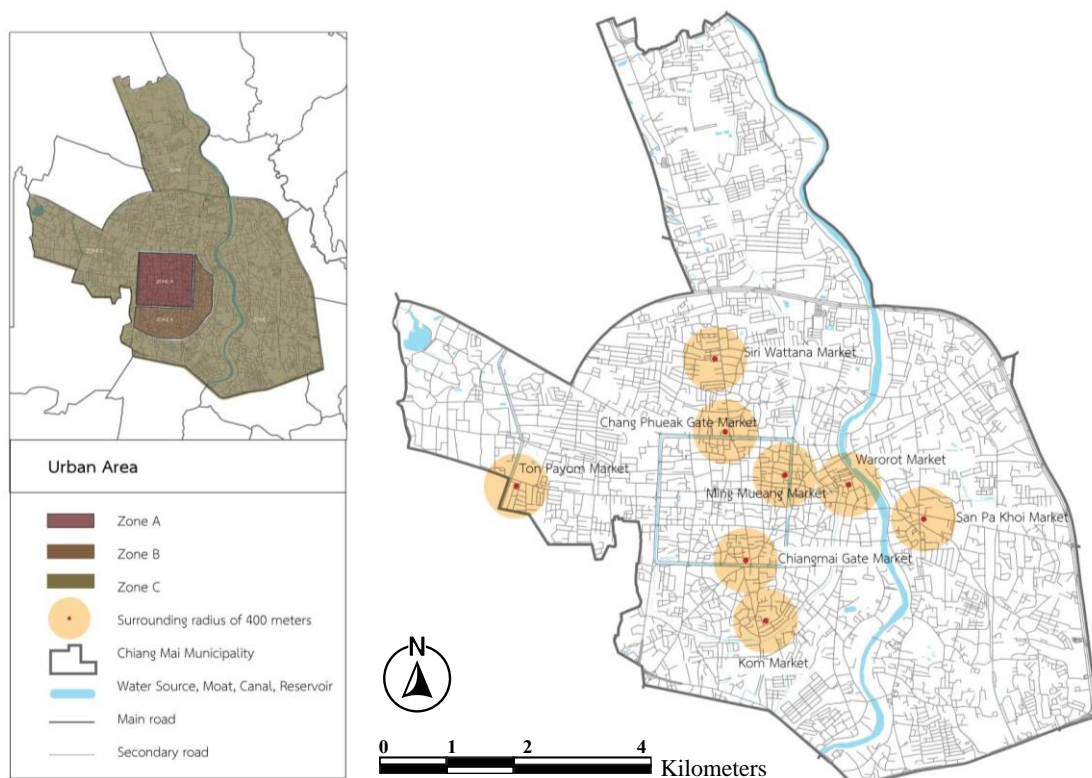


Figure 4 Target Population in Chiang Mai Municipality

Data collection

Data collection was performed by visiting the study areas to examine the physical, social, and environmental aspects of the areas. It included areas under the Chiang Mai municipality, community areas surrounding the market, and the surrounding context. Physical data was analyzed by Geographic Information System (GIS) through the Arc GIS program for spatial analysis. Then, the data obtained from the survey was analyzed in terms of the cause and risk of fire in the areas for the importance of each factor by creating a database and weighting to classify risk factors criteria into different categories in the most probabilistic way. The physical areas of the 7 factors were examined, namely the age of the area, population density, commercial land use, residential land use, type of building material, road network, and fire station location (Table 1).

Table 1 Impact Weighting of Risk Assessment Areas

Criteria/Factor	Class	Rank	Weight	Risk Classes
The Age of the Area	> 60	4	0.15	Very high
	59 - 40	3		high
	39 - 20	2		Moderate
	< 20	1		Low
Population Density	> 4500	4	0.20	Very high
	3500 - 4500	3		high
	2500 - 3500	2		Moderate
	< 2500	1		Low
Commercial Land Use	> 30%	4	0.15	Very high
	30 - 20	3		high
	20 - 10	2		Moderate
	< 10%	1		Low
Residential Land Use	> 80%	4	0.12	Very high
	80 - 70	3		high
	70 - 60	2		Moderate
	< 60%	1		Low
Type of Building Material	> 30%	4	0.09	Very high
	30 - 20	3		high
	20 - 10	2		Moderate
	< 10%	1		Low
Road	> 6 meters	1	0.10	Low
	6 – 5 meters	2		Moderate
	5 – 4 meters	3		high
	< 4 meters	4		Very high
Fire Station	> 1.2 kilometers	4	0.19	Very high
	1.2 – 0.8 kilometers	3		high
	0.8 – 0.5 kilometers	2		Moderate
	< 0.5 kilometers	1		Low

Risk assessment criteria for scoring employed the results to prioritize the risks for damage and impact assessment in the areas by categorizing fire risk areas. Data analysis was performed based on the determination of fire risk areas by applying the GIS to study related factors influencing fire incidents in the city to determine the relationship between physical factors and community areas surrounding the market, leading to the determination of fire risk factors and fire risk factor prioritization through arithmetic mean and standard deviation with the following details:

Data input in the Geographic Information System (GIS) must be spatial data in each layer. The Arc GIS program in the analysis determined the fire risk factors. The two types of processing and analysis included the weighting of each factor and the data type score of the factor. Subsequently, Factors related to fire incidents in the area in the geographic information system were performed by weighting based on the

importance of the factors in this study. The weights were set from 1 to 5. 1 is the minor importance and relation to a fire incident, while 5 is the most important and related to a fire incident.

All obtained scores were grouped into a chance of a fire risk explained by the mean of the score and then the distribution of the standard deviation data in each risk class, which is divided into 5 risk classes, including very-high, high, moderate, low, and very low. After the analysis was performed, data were presented in a chart to summarize and assess fire risk areas.

4. Literature Review

Fire risk areas can cause damage based on the context, region, topography, and the possibility of different natural disasters.

According to UNISDR (2009), fire risk assessment is a way to determine the severity and probability of negative impacts by analyzing the risks that may occur and vulnerabilities in the study area with potential harm to people, property, services, livelihoods, and the environment.

Vulnerability

Blaikie, Cannon, Davis, & Wisner. (2004) defined vulnerability as caused by factors affecting the life and property of people and those in the risk areas from both natural and social disasters with different impacts. The factors that cause vulnerable areas are measured by impacts from social status, career, race, gender, health condition, age, and social network of an individual and groups.

Hewitt (1997) described the risk area as effortlessly intimidated by various threats caused by population density, residential density, building structure, social activities, or harmful activities with an area limitation that cannot be avoided from disasters and low safety from incidents that cannot be mitigated for a safety state.

Bureau of Disaster Prevention Measures (2008) stated that vulnerable areas are related to the urban structures: community type, age, town planning, population density in community areas, traffic system, utility system, and building structure.

Risk Assessment

Risk assessment processes require numerous and various data sets, including both quantitative and qualitative forms, mostly involved with secondary sources, such as reports on data statistics, publications, and documents from reliable agencies, such as local government agencies and international agencies involved in fire incidents. Besides, the data on the location of various risk elements were not complete, thus leading to limitations in converting available data into a format suitable for use by the Geographic Information System (GIS) used in risk assessment and displayed in the form of a map. The location of the incidents should be recorded as well as the nature, the severity of the damage, and basic information about the damage. The severity of the incidents should be recorded at the scene as well. If these databases can be completely developed with the correct format, they will be very useful in disaster risk assessment with more accurate and comprehensive in the future.

Moreover, personnel in government agencies should be encouraged in terms of knowledge and understanding of risk assessment as at least a coordinator risk assessment along with an adequate understanding of quality control, guidelines for application, outcomes of risk assessment, and risk communication information for planning and developing the province to be safe from disasters. Since the risk assessment is related to the use of Geographic Information System (GIS) in terms of the risk assessment and the presentation of risk information, the development of personnel in the field of Geographic Information System within government agencies should be prioritized as well.

Qualitative Risk Analysis

Qualitative risk analysis explains the risks of the use of risk metrics to estimate the possibility of a threat and its impact. The example of the risk metric table (Table 2). reveals the risk classes according to the risk score as a result of a multiplied between the possibility of disaster and the level of impact. Numbers in the table indicate the risk classes. High numbers indicate a high-risk class. These risk values are useful in showing trends or comparing risk classes (such as the lowest to the highest). Therefore, the classification of

the fire risk areas was divided into 5 classes as follows: very high (more than 15) with possible severe impact managed by immediate actions, high (10-12) with preparation soon, moderate (7-9) with not very severe impact with a moderate consequence without urgent action or action at all depending on the existing resources, low (4-6) with mild level and little impact mostly acceptable by specifying the population that may be affected, and very low (1-3) without any special actions and with management by people in the area.

Table 2 Evaluation and Risk Prioritization

Evaluation and Risk Prioritization					
Risk Classes	Very High	High	Moderate	Low	Lowest
	Above 15 scores	10-12 scores	7-9 scores	4-6 scores	Below 3 scores
Importance	Immediate actions and emergency actions for very highly important areas	Immediate actions with fastest implementation for highly important areas	Moderate importance with fast actions	Low importance with planning and management within the areas	Acceptable risk without possibly needed actions and with management within the areas

Source: Adapted from ADPC, 2011

Risk Estimation

In the final phase, it was a compilation of the results that can be analyzed above as a result of the risk of disaster. A simple method may be used by substituting the probability totaling 5 levels, namely Very High (5) High (4) Moderate (3) Low (2) Very Low (1) and the level of severity of the impact, totaling 5 levels, namely Very High (5) High (4) Moderate (3) Low (2) Very Low (1). Then, they were compared to the risk of disaster shown in Table 3.

Table 3 Example of Risk Estimation

Fire Probability	Level of Severity				
	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)
Very High (5)	5	10	15	20	25
High (4)	4	8	12	16	20
Moderate (3)	3	6	9	12	15
Low (2)	2	4	6	8	10
Very Low (1)	1	2	3	4	5

Source: Adapted from Vinnem, (2010)

Accordingly, the outcomes of the risk assessment are very useful and can be used as a guideline for fire risk reduction as well as application in planning the development of risk areas. The key components in integrating disaster risk reduction into development included risk identification, risk analysis, and risk estimation, leading to risk management to reduce the risk (as shown in Figure 5). The risk assessment is used to analyze the likelihood of being affected by fire, determine appropriate measures to manage and reduce risks, and implement measures into the process related to development planning and implementing development activities at all levels. To reduce fire risks, knowledge, the importance of risk assessment, and the application of the outcomes of risk assessment should be promoted. This includes the production of personnel or hiring experts with abilities in various fields related to risk assessment to expand cooperation between government agencies to cooperation between the public and private sectors. Providing information to the public about the process and the outcomes of risk assessment assists people in the area to gain a better understanding of the risk and situation to create participation of stakeholders in planning for emergency response, early warning, danger preparation and confrontation, prevention and mitigation, rehabilitation and rebuilding together in a systematic manner.

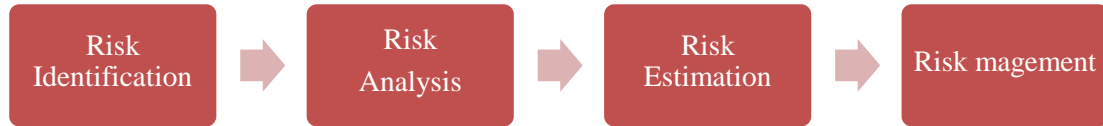


Figure 5 Risk Management Process Source: Adapted from ADPC,2011



Figure 6 Analysis of Community Fire Risk Areas around the Market in Chiang Mai in a Radio of 400 meters

5. Results and Discussion

Regarding analysis results of essential factors for the proposal for the management of areas that cause risks, vulnerability, and potential, based on physical surveys with the application of geographic information system to estimate the damage level, loss, or the impact of the situation, it can be concluded that 3 areas around the market in Chiang Mai (Figure 6) met the high-class risk criteria, namely the communities around Chiang Mai Gate Market, Ming Muang Market, and San Pa Koi Marke with high importance and urgent actions. 3 areas met moderate-class risk criteria, including the communities around Kom Market, Chang Puak Gate Market, and Warorot Market, with normal actions. 2 areas met the low-class risk criteria, namely the communities around Siriwatthana Market and Ton Phayom Market Which without any actions or with management within the area (Figure 7). All of this was a quantitative risk. There may be different details in each area. The factors that result in differences in each area include the effect size on the people in the area, property damage, loss of life, and the estimation of the probability of damage or loss that will occur. The impact may be on the money, asset, property, social operations, or people. The risk analysis was an essential continuous step since it provides crucial data for risk estimation and decisions for overall risk management.

If figures are inserted into the main text, type figure captions below the figure. In addition, submit each figure individually as a separate file. Figures should be provided in a file format and resolution suitable for reproduction, e.g., EPS, JPEG or TIFF formats, without retouching. Photographs, charts and diagrams should be referred to as "Figure(s)" and should be numbered consecutively in the order to which they are referred

6. Recommendations in Research

The Risk prioritization can be used to identify the risk that needs special attention through the application of a geographic information system and the process of risk score criteria to analyze the importance of fire risks to consider influential risk factors in managing fire risk areas. Therefore, the researcher proposed the guidelines for prevention and mitigation management plan accurately and suitably for the context of the surrounding community areas as follows:

1. **Fire protection** should be enhanced by focusing on prevention to reduce opportunities and severity by raising awareness for community leaders and people of the problems and safety of the community at all times.

2. **Public relations campaigns and activities** should be held to stimulate community leaders, people, and public and private sectors to focus on the distribution of knowledge in prevention and mitigation in each area for the understanding of the danger of fire and knowledge and understanding of disaster prevention and mitigation in their areas and the surrounding areas.

3. **Laws related to fire protection management** should be integrated through clear classification of the issues, including the design, construction, and activities for the public and private sectors to understand the purpose of the law; the law to inspect the building should be enforced seriously through indicators to monitor and evaluate the performance.

4. **Training** should be provided to enhance knowledge on fire prevention and suppression for promoting public participation and various sectors to be aware of self-defense and understanding of fire, especially the dangers that may occur to young children and the elderly in the residential areas.

5. **Community leaders, volunteers, or people** in the area should practice using tools for effective prevention.

6. **Tools** should be sufficient for fire protection in the community.

7. **The level of loss from fire risk** should be maintained at the same level or not exceed the standard, or it should be reduced every year.

8. **An emergency plan** should be prepared to develop annual fire management drills along with training on situation assessment for community leaders, volunteers, or people in the area to recognize and understand the situation to reduce fire extinguishing time and losses in all parts.

9. **The collaboration** between the public and private sectors and the general public should be enhanced through cooperation networks with agencies to achieve maximum efficiency in the area, such as improving the transportation routes' efficiency.

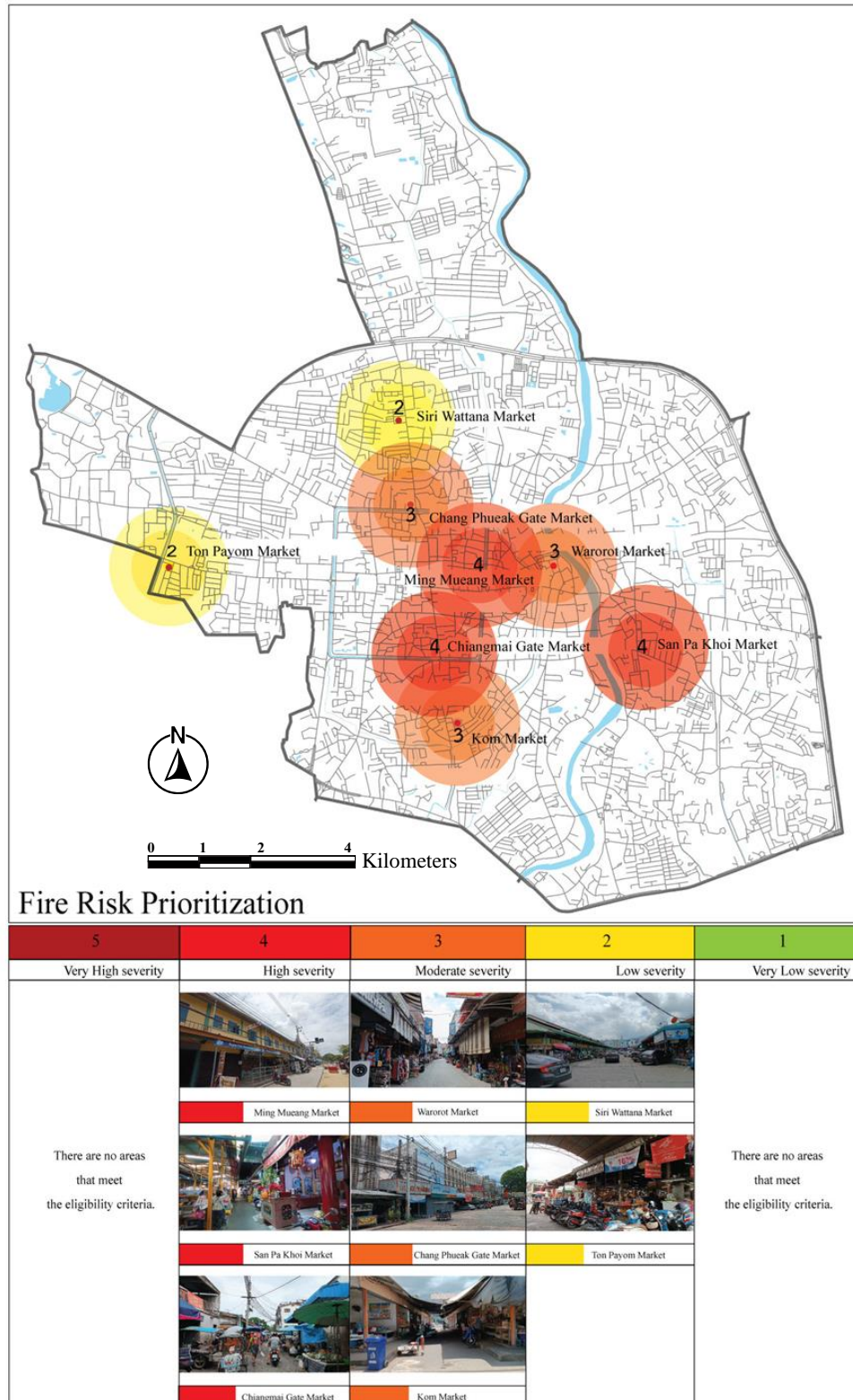


Figure 7 Analysis of Fire Risk Prioritization around the Market

7. Acknowledgements

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Fashion Clothing and Garment as Communication: The Case of Batik 3 Negeri Solo by Tjoa Family, the Popular Choice of the Sundanese M nak's Taste, Priangan, Indonesia

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Abstract

Fashion, clothing, and garments are nonverbal communication media. As a garment, batik has been an important part of the nonverbal communication process since the days of the ancient Mataram Kingdom. This study aimed to examine how fashion, as Barnard's communication, Saussure's semiotic theory, and Bourdieu's theory of taste, dissects the popularity of Batik 3 Negeri Solo by the Tjoa family. Furthermore, it focused on the batik's vital role in communicating social roles and status, as well as social and economic values to political symbols. In 1910, the Tjoa family from Surakarta began to produce the batik Tiga Negeri, branding it as Batik 3 Negeri Solo. According to one expert, the Tjoa family's batik became the first choice of the *M nak* Priangan as gifts for their subjects at the beginning of the 20th century because of the motif's beauty, complexity, and high production quality. Therefore, the Batik 3 Negeri by the Tjoa family became well-known and sought-after by the Sundanese in Priangan, West Java, because it also represents a high social class's taste and lifestyle for the Sundanese. The results reveal the factors making the Tjoa family's Tiga Negeri batik highly reputable and popular in Priangan, West Java, Indonesia.

Keywords: *Fashion; Communication; M nak; Tiga Negeri Batik; Tjoa family*

1. Introduction

Fashion protects the body, meets the needs of modesty, functions as a communication tool to convey personal, social, and cultural identity (Hasyim, 2016). This is because one communicates their identity through fashion, indicating their social identity through a dress code. Moreover, it shows certain cultural characters expressed through dressing and appearing in a nation's society. (Rahmawati, 2020)

Fashion, clothing, costumes, garments, and adornments are artifactual communication forms. In general, *Artifactual Communication* is conveyed through fashion, clothing, and artifacts, such as clothes, make-up, jewelry, garments, motifs, or spatial decoration arrangements. This means that fashion or clothing is included in nonverbal communication because it conveys messages without spoken or written words (Barnard, Ibrahim, & Iriantara, 2011). Lestari (2014) stated that fashion is nonverbal communication that delivers messages using symbols without direct-conversational words. As a garment, Indonesian batik has motifs with visual compositions, as well as explicit and implied functions and meanings. Some examples are the forbidden (*larangan*) batik motifs from Yogyakarta and Surakarta, such as the *parang rusak*. Also, there is *sawat garuda*, specially designed for the Sultan and his family, and the *sidomukti* motif meant for prayers for a new and lasting life full of blessings. During the Solo and Yogyakarta sultanate period, ordinary people could not wear forbidden motifs. However, ordinary people are allowed to wear those motifs today but not in the palace's vicinity as a form of respect to the sultanate. These batik motifs express function and convey nonverbal messages to signify a mutual community agreement.

Umberto Eco in Barnard et al. (2011) spoke through his clothes as though using the spoken words in other contexts. Eco's metaphor states that clothes are assembled into a composition in the way words are arranged into sentences. When someone mixes and matches clothes with additional accessories such as belts or watches, it resembles setting words into a sentence. In this case, each piece of clothing has a meaning, chosen and combined by the wearer in one look. Similarly, batik is a fashion item or clothing as a medium

used to express a message in nonverbal communication. Through these distinctive batik motifs, people communicate their message as their intent is conveyed through the clothes in communication. Therefore, people in Java, Indonesia, use batik as a medium for delivering nonverbal messages.

The batik technique used in Java, Indonesia, is the traditional Javanese textile decoration. Batik is a textile decoration technique in which a color-resistant hot wax is applied (Hout, 2001). Hot melted wax is applied to a plain white cotton cloth using *canting*, a unique tool with a small copper container, and a thin, sturdy opening connected by a short bamboo handle (Ministry of Trade of the Republic of Indonesia, 2008). With extraordinary intuition, the batik artists pour out their creativity using *canting* on a piece of cloth to produce intricate motif designs.

The term batik comes from the Javanese word *amba*, which means to write with the suffix *titik*, implying a small dot or creating dots. A manuscript on palm leaves dating from around 1520 AD found in Galuh, South Cirebon, West Java, mentions that batik means *seratan*, which means 'writing' in Javanese (Ministry of Trade of the Republic of Indonesia, 2008). According to Asa (2014), batik emerged from the 10th - 14th century during the Galuh and Pakuan-Padjadjaran Kingdoms in West Jawa, Indonesia. It is derived from the Ancient Sundanese word *ambatik*, which means drawing. In Javanese, *ambatik*, or *mbatik*, began to alight in the 11th century.

Batik has become a significant part of Indonesians' lives because it is used in rituals, traditions, and celebrations with its symbolism. Its motifs carry various symbolic meanings inherent in Indonesian cultural heritage. Moreover, the diversity of these motifs reflects influences from foreign cultures that enrich the Indonesian batik culture, including the Chinese phoenix, European flower bouquets, Arabic calligraphy, Japanese cherry blossoms, and Indian or Persian peacocks. Batik is often passed down through generations in Indonesia, becoming an exclusive product as a wedding gift. This is because it is linked to people's cultural identity through the symbolic meaning of colors and designs. Furthermore, the batik motifs have rich symbolism of nature, history, social status, local communities, and cultural heritage. This gives Indonesians a sense of identity and continuity as an essential component in their lives (Ikatten, n.d.)

UNESCO recognized batik as a Masterpiece of Oral and Intangible Heritage of Humanity on October 2, 2009. This is because Indonesian batik motifs have deep philosophical values and meanings passed down from ancestors to their descendants. Therefore, batik has become a part of Indonesian people's daily lives for many centuries. According to the philosophy adopted, the artists design their creations with various good intentions, hopes, and wishes. A batik contains three interrelated elements, including motifs, functions, and philosophy (Suliyati, & Yulianti, 2019). Batik techniques are found in various regions globally, such as China, Thailand, Malaysia, and Africa. However, UNESCO recognizes the intangible heritage of the Indonesian batik, not the technique.

In Indonesia, batik was initially produced on the island of Java, especially on the north coast and Central Java's inland. It was divided into *Vorstenlanden* and *Pesisir* (Coastal) batik since the Dutch colonial period. *Vorstenlanden* batik came from Surakarta, or Solo, and Yogyakarta (Yogya), the sultanate or principalities (*Vorstenlanden*) during the Dutch colonial era. The batik produced outside these two cities was known as *Pesisir* batik (Djoemena, 1990). One of the legendary *Pesisir* batiks produced with complex techniques and premium quality is the Tiga Negeri Batik (Three Countries batik), which has distinctive characteristics. Tiga Negeri Batik later became the leading choice for the *Ménak* Priangan in the early 20th century. This choice based on *Ménak* 's taste eventually influenced the choice and batik buying pattern in the Priangan community, West Java, Indonesia.

2. Objectives

The objectives of this study are listed as follows:

- 1) To identify how batik is considered a part of nonverbal communication and deliver messages using symbols or signs.
- 2) To examine the factors behind the popularity of Batik 3 Negeri by the Tjoa family, which became the most favorable choice in the Priangan community.

3. Methodology

This study utilized the descriptive qualitative method through literature review and an online interview with Mr. Benny Gratha, the author of *Batik 3 Negeri Solo: A Legend*. An offline interview was conducted with Mr. Asep Dede Mulyana as a Batik 3 Negeri enthusiast. Direct observations could not be performed due to the Covid-19 pandemic. This study examined Tiga Negeri Batik from Fabric of Enchantment and the North Coast of Java, samples by the Tjoa family from Mr. Gratha's book, and a private collection. Furthermore, the concepts of Saussure's Semiology, Barnard's fashion as communication, and Bourdieu's theory of taste were applied to analyze fashion, clothing, and batik as a garment to explain the production of social and cultural meanings. This helped examine how fashion, clothing, and batik act as signs related to power and ideology (Barnard, 2002). The concepts were applied to analyze how fashion, clothing, and garments are nonverbal communication and deliver messages using symbols or signs (Lestari, 2014). This study focuses on fashion, clothing, and batik with its motifs as communication. It examines why the Batik 3 Negeri by the Tjoa family became the most favorable choice in the Priangan community.

4. Results and Discussions

4.1 Fashion as Communication

Barnard et al., (2011) stated that fashion, clothing, and garments are signifying practices that generate meaning, producing and reproducing cultural groups in line with their position in relative power. These groups use fashion, clothing, and garments to express or reflect on the positions of those wearing them. Additionally, Barnard emphasized that fashion and clothing are cultural beliefs, values, ideas, and experiences communicated through practices, artifacts, and institutions. In this case, fashion, clothing, and garments are ways humans communicate or express their social feelings, moods, values, hopes, and beliefs. Clothing and garments form social groups and individual identities, giving meaning to differences in social groups.

Fashion and clothing show how social groups build, support, and reproduce positions of power and relations of dominance and subservience, making them ideological. Consequently, this dominant and subservience position becomes completely natural, proper, and legitimate. Furthermore, fashion and clothing make social and economic status inequalities appear legitimate and acceptable by people in dominant and subservience positions, described as hegemony. The differences in power and status between the lower and higher classes eventually emerged as legitimacy and propriety by using fashion and clothing. Additionally, clothing and fashion show a person's social value or status. People judge social status and roles based on what a person is wearing. Society uses clothing and fashion to show or define a person's social role. For instance, the community expects local government officials to behave in a certain way and not in conflicting behavior. This means that clothing and fashion worn by an official is a sign for certain people with specific roles and expected to behave in certain ways (Barnard, 2013).

Meaning in fashion and clothing intersects with semiology, the science of signs consisting of two Greek words, *semeion*, and *logos*. *Semeion* means sign, while *logos* denotes story, account, science, or knowledge. Saussure defined semiology as a science that studies social signs, their composition, and the laws governing or regulating them (De Saussure, 2011). According to Saussure, human communication involves dividing signs into the signifier and the signified. Although two parts form a sign, a signifier represents the signified (Barnard et al., 2011).

Roland Barthes developed Saussure's semiotic study by creating a systematic model to analyze the meaning of signs and add signification levels. Barthes focused on the opinion of the two-level significance into denotation or primary signification and connotation or secondary signification. The first significance level is the relationship between the signifier and the signified within a sign to an external reality known as denotation (Rahmawati, 2020). In this case, denotation is the first, simple, basic, factual, descriptive level of meaning with a broad consensus agreeable to most people (Hall, 1997).

Connotation is the second signification level describing the interaction when the sign meets the reader's feelings or emotions (Rahmawati, 2020). It is a word or image that makes people think, feel, or associate with the meaning of a word or image. Semiotically, fashion is a sign system formed by the relationship between the signifier or the clothes and the signified meaning emanating from the clothes. Therefore, denotation and connotation are two signification levels or types of meaning (Rahmawati, 2020). Connotation has a second, broader meaning that is not a clear, descriptive, or interpretation level. In this case, a person interprets signs closely related to the cultural, knowledge, and historical influences they experience

in their social environment (Hall, 1997). Barnard et al. (2011) stated that denotation and connotation are analytical concepts used to analyze and explain instead of finding experiences.

Barthes in Trisnawati (2011) stated that words, images, and objects function as signifiers in producing meaning in a semiotic system. This indicates that clothing covers the body and functions as signs, because they form meaning and convey a message. For instance, an evening dress signifies elegance, a batik shirt signifies formality, and a t-shirt with jeans is considered a casual dress. These signs allow clothing to convey meaning and function as a language. However, gender, age, class, and race differences make people read fashion differently. Those sharing the same fashion code interpret the signs relatively the same (Hall, 1997). Therefore, meanings result from social negotiations and agreement among the community.

4.2 Theory of Taste by Bourdieu

Huang (2019) showed that Bourdieu claimed that making choices reflects one's tastes mapped on a person's social status. Taste establishes distance and creates differences between upper and lower social classes. According to Bourdieu, taste develops during the early years of life. This development makes a person look for an appropriate social status equivalent to their educational background. It guides them to behave elegantly and politely and differentiate themselves from others.

Lukman (2016) stated that taste is an attribute found in humans that must be understood concerning social class, subculture, and lifestyle. This is because it results from struggles in art relations and power strategies to monopolize art appreciation (Martini, 2003). Moreover, the taste is always based on standard recognition of perfection or a legitimate model within a particular concept. As long as there is a social practice, a person's aesthetic choices are influenced by symbolic interests (Bourdieu, 1998). Society inserts symbolic items, especially those considered primacy attributes, in differentiation. For this reason, people used taste differences as cultural capital to signify the variations between social classes (Bourdieu, 1987).

According to Sturken and Cartwright (as cited in Aziz, & Hashim, 2021), Bourdieu argues that taste is informed by experiences related to a person's class, cultural background, education, and other aspects of identity. Understanding taste is always connected with social identity and class status. Furthermore, taste can be trained and displayed through consumption and display patterns, a point that is in line with the idea of class and hierarchy. Bourdieu believed that differences in class and taste arising from social agent dispositions would determine aesthetic preferences. Each social class has its tastes learned from the beginning of life in the family environment. This taste distinguishes social classes, especially in aesthetic choices.

4.3 Tiga Negeri Batik (Three Countries batik)

In the late 19th century, the Chinese Peranakans along the north coast of Central Java and Surakarta-Yogyakarta developed Tiga Negeri batik, which undergoes dyeing processes in three centers. The processes involve using natural red dyes in Lasem, blue in Pekalongan, and soda brown in Solo or Yogyakarta. This creates a beautiful and unique piece of batik featuring red *getih pithik* (chicken blood), indigo blue, and soda brown. Also, the products have motifs resulting from the hybridity of *Vorstenlanden* (Solo and Yogyakarta batik) and *Pesisir* (Coastal) batik motifs originating from each center. Many experts believe that completing one piece of Tiga Negeri batik takes approximately 650 km to travel, also known as the Tiga Negeri batik triangle route (Malagina, 2018).



Figure 1 Map of Priangan Area, West Java: Cianjur, Sukabumi, Bandung, Sumedang, Tasikmalaya, Garut, Ciamis and Tiga Negeri Batik Triangle Route, Central Java. Source: Author

Roojen (2001) stated that:

Deliberate efforts to combine the best style elements, one locality with another, involved producing one batik cloth in two different centers, each applying motifs of its specialization. The result became known as *Dua Negeri* batik, meaning two countries. This development was later taken further, with typical designs from two north coast centers. Also, a third classical design was added in either Surakarta or Yogyakarta. This latter variety was called *Tiga Negeri*, meaning Three Countries.

Tiga Negeri Batik results from the collaboration of batikers in three centers. It features red, blue, and soja brown colors and three different motifs in one piece of batik cloth. This batik proves the mixing of cultures and ethnicities on the island of Java. The red represents Chinese culture and ethnicity, the blue represents the Dutch influence, while the Soja brown represents Javanese culture. According to Laksmi (2010), each batik center area has unique natural and socio-cultural conditions, causing variations in visual styles. Therefore, the batik motif is a medium for expressing feelings visually inseparable from environmental influence.



Figure 2 Sarong Batik Tiga Negeri 1900-1910. Source: Fabric of Enchantment, Heringa, and Veldhuisen (1996)

The *badan* or body section in Figure 2 has the primary motif of two sets of flowering trees in Lasem red and Kudus blue. The secondary central Javanese *semen*, the group name of batik patterns representing organic motifs, comprises large double wings (*sawat*), winding vines, and tiny tendrils (*ukel*). The *Kepala Gigi Balang* design in *Peranakan* style on the head section is dominated by red on brown, with blue and white accents and *ukel* background. The *pinggiran* or batik borders were decorated in the typical Kudus style, with

white accents sparkling against bright blues. This batik shows the difficulty in working on one Tiga Negeri batik in three different centers (Heringa, & Veldhuisen, 1996).

Batik Tiga Negeri is one of Javanese's most expensive premium batiks ever created due to its high quality and elaborated motifs drawn on both sides in almost perfect precision. Other reasons are the number of *isen* or intricate patterning in the batik motif and the transportation cost (Veldhuisen, Setiadi, & Laksono, 2007). Tiga Negeri batik's production technique, colors, and motifs are unique, depicting a beautiful cultural blend that appears harmonious with *Bhinneka Tunggal Ika*, an Indonesian motto that means Unity in Diversity.

4.4 Batik 3 Negeri Solo Tjoa Family

In 1910, Tjoa Giok Tjiam, a Chinese *Peranakan* from Rembang, Central Java, started a batik business in Solo along with his wife Liem Netty. The Tjoa family has a special place in Indonesian history for producing batik Tiga Negeri for three generations from 1910 to 2014. Mrs. Tjo Giok Thiam taught her sons' wives the batik technique because they would be directly involved in its production. The husbands mixed the color because the parents only passed the family secret of color mixing recipes onto sons (Gratha, 2018). The Tjoa family branded their products as Batik 3 Negeri Solo and later immortalized their brand with a logo. Their brand name was inspired by a legendary story from China entitled Sam Kok, meaning Three Kingdoms (Alisjahbana, 2018). The first generation ordered *blangko* batiks waxed and dyed red on the edges and head of the sarong, leaving the body plain white from Lasem. Also, they ordered a *buketan* or flower bouquet motif and red borders, and later added other motifs and dyed them in blue and soda brown at their workshop in Solo. The family applied the classic Batik Tiga Negeri creation concept using three colors, but the process was carried out only in Lasem and Solo.

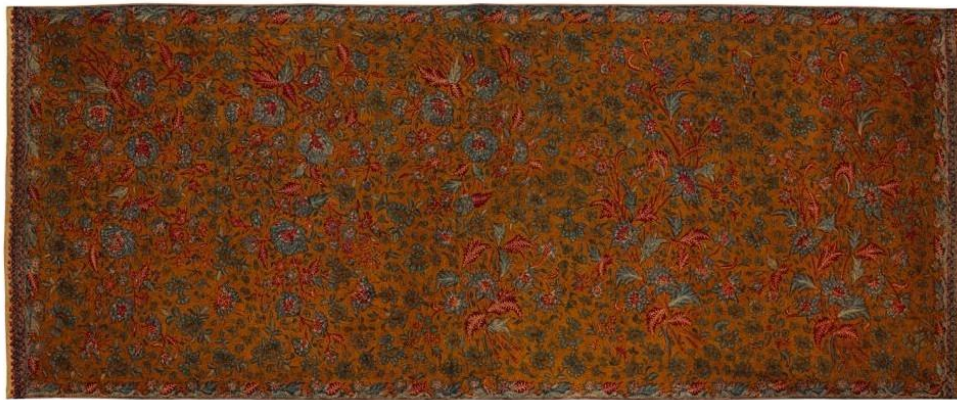


Figure 3 Tiga Negeri Batik by Tjoa Tjoen Tiang (Second Generation). Source: Kusumahhani Collection 2019

The first generation always signed their batik with Mevrouw Tjoa Giok Tjiam's signature. The signature was waxed and dyed by a *cap* (stamped) or *tulis* (hand-drawn), and usually located in the *Kepala* or head of a sarong or the corner of a *kain panjang* (long cloth). Sometimes, it was framed as a label by a border of contrasting color (Elliott, 2010). Mevrouw referred to batik produced during the Dutch colonial era. Probably, they followed a trend of the Pekalongan's Indo-Dutch entrepreneurs that also put their signature on their batik. This aimed to state the authenticity of each batik produced, which symbolized status and high quality.

The prominent motif of Tiga Negeri batik is *buketan* motif because the Dutch authority decreed the Dutch Nationality Law, *We top Het Nederlandsch Onderdaanschap* in 1910. According to the law, every newborn in the East Indies of Chinese parents would be considered a Dutch subject (Lee, 2016). This caused the Chinese Peranakan to legally wear and produce European-style *buketan* batik sarongs and the lace *kebaya* (Lee, 2016). As a result, the Chinese Peranakan adopted the *buketan* style to express their position as legally equal to the Dutch. Additionally, European designs on batik became a symbol of rank (Heringa, & Veldhuisen, 1996).

Buketan style became a popular motif, but the choice of flowers changed, where European flowers were replaced or melded with peonies, chrysanthemums, or combinations. For instance, the Dutch tulip was transformed into the Chinese lotus (Elliott, 2010), while peonies, chrysanthemums, or their combination replaced European flowers. Various types of flowers were used in a bouquet, such as chrysanthemums, lotuses, orchids, and others. Chrysanthemum flowers were prevalent and familiar as decorative motifs on coastal batik produced by Peranakan entrepreneurs in Java. Probably, this practice referred to the Chinese community's belief that chrysanthemums symbolized longevity, strength, and loyalty.

4.5 The *Ménak*

The local rulers known as the *Ménak* governed the Priangan West Jawa since the fall of the Sunda Kingdom in the 16th century, throughout the 19th century, until Indonesian independence. The *Ménak*, the ruling class or lords, were the Sundanese Regents' descendants that emerged after the Sunda Kingdom ended and eventually came under the Mataram Kingdom's influence from Central Java. Although these Regents were not kings, they had the position of local kings. The Sultan of Mataram initially appointed the Regents when Priangan was still under Mataram Kingdom's influence. Furthermore, the Governor-General appointed the Regents in Batavia after the *Vereenigde Oostindische Compagnie* (VOC) and the Dutch East Indies period. Regardless of their origin, their descendants were all classified as *Ménak*.

C. van Vollenhoven explained that the term *Ménak* from the Javanese tradition was also used in the Priangan region to refer to aristocrats and high-ranking officials. There was also a lower aristocratic group called *Santana*, the descendants of previous kings in the Sunda region. The terms *Ménak*, *Santana*, and *Cacah* are found in the list published by *Adatrechtbundel VIII* by *De Commissie voor het Adatrecht* (Customary Law Committee). In the glossary, the *Ménak*, *Ménak Gede*, or *Ménak Pangluhurna*, which means mayor, is the highest class of society. Also, it refers to high nobility eligible for the *Radén* title, the group with the highest rank, and a ruling class. In contrast, the *Santana* or *Ménak Leutik* (Mayor assistant) is a small aristocratic group descended from a marriage between a Raden and a lower class. The *Santana* group falls between the *Ménak* and the *Cacah* or *Somah*, comprising commoners or ordinary people. *Cacah* or *Somah* are the lowest class in the traditional status hierarchy (Lubis, 1998).

The *Ménak* did not lead a court life in the regency but sometimes imitated the court life of the Surakarta and Yogyakarta kings. However, they occupied the highest Priangan community social class status because they were considered descendants of the regent, a descendant of the Sunda king. In this case, the *Ménak* fashion and clothing also referred to the Mataram Kingdom dress code. A source written by D.K. Ardiwinata in 1908 stated that the clothes usually worn by the *Ménak* consisted of *Gede* and *Jajawaan* costumes. Ardiwinata obtained information from Radén Sumodirejo that the *Jajawaan* outfit had the following provisions (Lubis, 1998).

In Table 1, the elements or items of fashion worn by a *Ménak* are analyzed as signifiers because they represent something else. For instance, Javanese style hat (*bendo*) signifies authority and formality. Similarly with the batik worn, the *parang rusak* motif represents the social status and role of the *Ménak*'s authority in society. The role of authority to become a community leader is represented by batik with a *parang rusak* motif, a *larangan* or prohibited motif in the palace vicinity in Solo and Yogyakarta. The composition of clothing in Table 1 communicates a nonverbal sentence representing the status and social role of the *Ménak* in the Sundanese community. In the second meaning or connotation level, the dress code of the *Ménak* means they are the chosen people descended from the ancient Sundanese kings. Therefore, they were appointed leaders or regents that owned the land with its contents. The meaning formed has become a mutual agreement or consensus accepted legally in the Sundanese community in West Java.

Ménak's official attire is a dress code worn since the time of the Mataram Kingdom as their representative in the West Java region. The Dutch colonial government continued this tradition until the Indonesian independence period in 1945. The clothing composition is worn to express the *Ménak*'s hegemony, making them leaders with particular social roles that dominate and govern the ordinary people. The Sundanese community knows that batik, as an element of clothing with a specific motif, is only worn by the *Ménak* and their families. The *Ménak* wear the signifier or a form of clothing, while its meaning is the signified or members of the *Ménak* community. Therefore, the dress code serves as a social identity, meaning formal clothes show *Ménak*'s authority and power.

Table 1 Jajawaan Costume

1. Javanese style hat (bendo).
2. Black short-cap coat called sikepan, with rows of buttons totaling 7, 9, 11, or 13 pieces.
In Sunda, there are only nine buttons at most.
3. A white shirt worn underneath a coat. The cut is the same as the suit.
4. Kain kebat/kain panjang (long cloth); This cloth is about 1 or 2 inches from the ankle and tied with a belt. For the Ménak Gede, their batik motifs are special: kawung besar and kawung ece; lereng: parang rusak barong, parang rusak sedang, parang tejo, parang kusuma, parang kembang, parang centung, curiga and udan liris. Other lowly Ménak are prohibited from wearing batik with these motifs.
5. Belt
6. Keris (small sword with a wavy blade)
7. Sandals
8. Pants
9. Coat



Source: Kehidupan Kaum Ménak Priangan 1800-1942. Lubis, 1998



Figure 4 Ménak Sunda, Late 19th and Early 20th Century. Lubis, 1998

In traditional Javanese, the relationship between men as local rulers and their people in the 19th to the 20th centuries is a close interdependence between two distinct but inseparable elements because it is a king-servant relationship. Javanese traditions rooted in the Mataram Kingdom heavily influenced the *Ménak's* way of life, which controlled the Priangan region in the past. Mataram's cultural influence is found in many aspects oriented towards Javanese tradition during the two centuries after the end of the Mataram Kingdom. One of these traditions is a symbol of power shown in the clothes and accessories worn (Karmila, & Widiaty, 2016).

The clothes and accessories worn by the *Ménak* express or reflect their social status. They signify practices and ways of generating meanings, producing and reproducing those cultural groups and their positions of relative power. In this case, clothes and accessories are artifacts, practices, and institutions that shape people's beliefs, values, ideas, and experiences. Clothing is how people communicate about their social groups' feelings, moods, values, expectations, and beliefs. Therefore, they differentiate one group from another, ensuring that identities remain separate and distinct. This means that clothing and accessories are

defenses used by different groups to form social order and hierarchy in achieving, challenging, or maintaining domination and supremacy (Barnard, 2002).

The batik with motifs only worn by the *Ménak* maintains the hegemony and justifies their identity differences and social status. It cannot be given as gifts to the social classes below the *Ménak* or even worn by them. Furthermore, the *Ménak*'s high social status determines a particular lifestyle that must be owned and lived to maintain prestige or authority. Their position as bureaucratic elite brings political power and social influence. In this case, the *Ménak* culture or lifestyle is a role model for other social classes and an example to be emulated because it represents a status symbol.

The Sundanese understand the *Tritangtu* philosophy as a concept, standard, or book of cultural values (*Kitab Ahlak Budaya*) as a reference for social behavior. In *Nagara*, *Tritangtu* is an insight into the norms that govern each individual's life and group within a territory of power or state administration (Saavreda, 2016). The Sundanese society manifests the relationship between the community and the state life in the philosophy of the *Resi* (teacher/*ulama*), the *Ratu* (regent/leader), and *Rama* (both parents) (Rusmana, 2017). Based on this philosophy, they respect teachers or scholars, leaders, and parents as role models for social behavior. Therefore, the regents or leaders (*Ménak*) must be respected, obeyed, and followed, meaning their lifestyle and aesthetic choices become a reference for the Sundanese people.

This study explored how Batik 3 Negeri produced by the Tjoa family obtained a high-status symbol in West Java. According to A. D. Mulyana (personal communication, May 4, 2020), the Regents in Priangan West Java started wearing Batik 3 Negeri, favoring it as a gift of appreciation for the commoners. For instance, the *Ménak* often gave Batik 3 Negeri to their subjects that went on a pilgrimage to Mecca. As a result, the community considered those owning and wearing have received blood, tears, and prayers from the batik makers. They inherited *pamor*, a word translated as fragrance, prestige, and strength, from the batik (Gratha, 2018). According to Gratha (2018), in the past, Batik 3 Negeri by the Tjoa family was in great demand by Sundanese in Bandung, Tasikmalaya, Garut, Majalengka, Priangan, West Java because it reflected the *Ménak*'s taste.

Based on Bordieu's theory of taste, *Ménak*'s taste became a guide and benchmark for people with lower social status. When the taste became a symbol of legitimacy for *Ménak*'s social status, lower-status classes were limited in wearing batik motifs. However, the Batik 3 Negeri made by the Tjoa family was usually worn by the *Ménak* and often became their choice as a gift for their people. Therefore, Tiga Negeri batik could be owned and worn by the general public, and finally became the legitimacy for the Sundanese to achieve a status similar to the *Ménak*. Batik Tiga Negeri, with the signature of the Tjoa family, signifies prestige, high social status, and *Ménak*'s taste, which are the signified.

What happens in the Sundanese lives is unique because the taste education from the *Ménak* to their subjects affects the aesthetic choices, particularly the Tiga Negeri Batik. The batik worn by the *Ménak* carries the *Vorstenlanden* motifs, which people outside the royal family circle cannot wear according to restrictions that apply to Sundanese society. That is why the Regents or the *Ménak* could not give batik with specific motifs reserved only for them as a gift. Therefore, the Tjoa family's Batik 3 Negeri became the favorable choice because it was an expensive premium batik of high quality. The *Ménak* choices represented their taste, ultimately making the Tjoa family's Batik 3 Negeri very popular among the Sundanese in Priangan. For the Sundanese, owning and wearing the Batik 3 Negeri by the Tjoa family is a high-status symbol.

The *Ménak*'s golden age of becoming government officials in the Sundanese community ended with Indonesia's independence. The regent position previously confirmed and given by the Dutch colonial government and became hereditary in the *Ménak* family ended. However, the *Ménak* status as descendants of the previous Sundanese leaders is still respected.

5. Conclusion

Batik has been a communication medium among Indonesian people on Java Island since the ancient Mataram Kingdom. Its motif's function as a sign to show the legitimacy and hegemony of power. In *Ménak*'s dress code, the clothing composition and batik symbolize their leadership and authority to lead the Sundanese people in West Java. Therefore, batik motifs contain implied and explicit meanings that have become part of the community's life cycle. The meanings generated by the motifs on batik are arranged together with other clothing elements, similar to assembling sentences as nonverbal communication. The

resulting meanings have become a mutual agreement or consensus recognized and passed down through generations.

In Surakarta and Yogyakarta, court and folk arts live together for different purposes. Court arts support special ceremonies and rituals, glorifying the past for the spiritual identity and unity of the Javanese world. Furthermore, the artworks preserve and sustain cultural values in court pride and cultural heritage. In contrast, folk arts live and maintain Javanese culture's philosophy of life and are understood as the commoners' artworks. They preserve, sustain, and develop Javanese culture and tradition and facilitate innovation and improvisation without following traditional and religious patterns. Batik *Vorstendlanden* is considered court arts, while batik *Pesisir* is folks arts. This consideration might explain why Batik Tiga Negeri and Batik 3 Negeri by the Tjoa family are more in demand outside the *Vorstenlanden* community that prefers court arts batik (Wiryomartono, 2016).

One of the famous Pesisir batik in the Priangan area of West Java is the Batik 3 Negeri Solo. It is a Tiga Negeri Batik masterpiece, immortalized with a signature from the Tjoa family. This batik has a special place in the community because it represents the taste of the Sundanese *Ménak*. Moreover, the motif's beauty and complexity, with high production quality, make the batik premium and expensive. Therefore, Batik 3 Negeri by the Tjoa family represents a high social class's taste and lifestyle for the Sundanese.

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An Analysis of the Clothing Culture of Wumesiben Mama, a Manchu Epic

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Abstract

Wumesiben Mama, a Manchu epic book, was released in 2007 and garnered interest from scholarly circles both domestically and internationally. This book should be considered an encyclopedia of North Chinese ethnic minorities due to its scholarly significance in epic, history, religion, mythology, art, folklore, and semiotics. This article investigates Wumesiben Mama's clothing culture. This area is almost entirely unknown, as there are almost no materials available to examine the clothing worn by the Donghai Nuzhen people hundreds of years ago. However, this Donghai epic recorded a wealth of information regarding the clothing and decorative culture of the ancient Donghai Nuzhen people, providing vivid, valuable, and instructive details about the clothing's uses, shapes, materials, manufacture, and colors. The clothing of the ancient Donghai Nuzhen people can collectively express their lifestyle, living standards, ideology, and aesthetic notions and serve as excellent resources for researching their culture.

Keywords: *Clothing culture; Donghai Nuzhen people; Clothing heritage based on Wumesiben Mama; Manchu epic*

1. Introduction

"Wumesiben Mama" is renowned among the Donghai Nuzhen people in Northeast China. Wubuxiben means the utmost wisdom, capability and skills. Mama means grandma in the Manchu language. Donghai Neuzhen: the name of a tribe, one of the three major Neuzhen tribes in Northeast China in Ming Dynasty, is a general name for the Neuzhen people living in the middle reaches of Songhua River, up to the Heilongjiang River valley and east coast, including Sakhalin Island. This epic originated in China during the Jin and Yuan dynasties (1115-1271) and was widely disseminated among the Donghai Jurchen and their descendants in the region of Sichote-Alin. China and Russia signed the "Beijing Treaty" in 1860, pursuant to which Russia gained more than 400,000 square kilometers of Chinese territory east of the Ussuri River to the Sea of Japan. By the end of the twentieth century, Manchu's traditional customs and primitive cultures had rapidly declined, and the Manchu oral ballad (Minjie, 2008) was on the verge of extinction due to the passing of its inheritors. Fortunately, Mr. Fu Yuguang was able to recover Wumesiben Mama, a classic work of Manchu oral ballads that had been completely lost to history, and bring worldwide notice to this wonderful work via decades of hard struggle. Wumesiben Mama is one of the finest Manchu ballads and merits inclusion in an encyclopedia of North China's ethnic minorities due to its academic worth in the areas of epic, history, religion, mythology, art, folklore, and semiotics.

In the historical documents, there are nearly no records about the religion and beliefs of the ancient Manchu from the Sushen People to the Mohe People and even less information on shaman clothing. Sushen is the name of an ethnic group of the pre-Qin period in ancient northeast China, Manchu ancestors. It was the first northeast ancestor to establish tribute relationship with the Central Plains Dynasty. Mohe, the name of the northeast ethnic group in ancient China, whose ethnic origins are Sushen in the pre-Qin dynasty, Hulu in the Han and Jin dynasties and Buji in the Southern and Northern Dynasties. It was called this name in Sui and Tang Dynasties. However, Wumesiben Mama is abundant in the records about clothing culture in Wumesiben Mama, which provides vivid and detailed materials for us to learn the uses, shapes, materials, production, and colors of the clothes of ancient Donghai Nuzhen people. Donghai Nuzhen people's cloths

can collectively reflect their lifestyle, living standards, ideology and aesthetic concepts in that remote age; this book provides precious materials for us to study the culture of ancient Donghai Nuzhen people.

Literature review: According to CNKI (China National Knowledge Infrastructure) data, between 2007 when *Wumesiben Mama* was published and the end of 2022, a total of 76 articles on shaman clothing, including 46 academic journals and 15 master's theses, were published. Among the 76 papers, one paper and one journal are devoted to clothing study in *Wumesiben Mama*. Both pieces were written by Professor Man Yi's pupils at the Luxun Academy of Fine Arts. In addition to receiving detailed directions from Professor Man Yi, the researcher conducted further research based on her research framework.

2. Objectives

The research is carried out to analyze the clothing culture in *Wumesiben Mama* and interpret and systematically study the purposes, shapes, materials, production technologies and colors of the clothes in *Wumesiben Mama* through literature studying, experts interviewing, and field survey so that a comprehensive clothing culture outline of that time will be drawn to form a clear description on the clothes in that time and provide important basis for further learning the living mode, ideology, and aesthetic concept of Donghai Nuzhen people.

The disciplines of ethnology, folklore, shaman costume research, fashion design, film and television production, cultural and creative product design, as well as others, would benefit immensely from the clothing research detailed in *Wumesiben Mama*. To re-present the visuals, the researcher used an interdisciplinary approach to create representations of the images based on the words describing the attire in the epic.

3. Materials and Methods

The researcher collected data and materials through literature studying, experts interviewing, and field survey to study the clothing culture stated in *Wumesiben Mama*, including uses of clothing, styles of clothing, materials of clothing, manufacturing process, and color of clothing.

Interviews with three experts:

Professor Manyi of the Luxun Academy of Fine Arts is the first expert to be interviewed. She is an expert on Manchu dress and has conducted extensive research on *Wumesiben Mama*'s clothing. She stated that the clothing culture is rich and colorful and may be evaluated methodically in five fields: functions, styles, materials, technology, and color. This paper was based on these five disciplines.

Professor Guo Shuyun of Dalian Nationalities University is the second individual. She was among the earliest epic scholars, and she authored *Study on Wumesiben Mama*. She believed, as did the academics, that painting the clothing imagery in the epic would make up for the lack of images. In order to replicate the epic's original clothing culture to the greatest extent feasible, she also advised that the design be strictly based on the epic's text. Following this approach, the researchers endeavored to reconstruct the original garment imagery from the epic.

Mr. Wang Honggang, a researcher at the Shanghai Academy of Social Sciences, is the third person. He is also one of the earliest researchers of the epic. In 2000, he and Dr. James traveled to Primorsky Krai, Russia, the source of the epic, to conduct an inquiry. He advised that the scholars examine the shaman attire of the indigenous on display in the Primorsky Krai museum and do comparative research on the appropriate shaman attire. Consequently, the study relied on a significant number of literature about the shaman attire of many tribes, which served as the theoretical foundation for the paper and its production.

After the researchers painted and created six costume paintings based on the original epic, three experts (Professor Man Yi from the Lu Xun Academy of Fine Arts, Professor Guo Shuyun from Dalian Nationalities University, and Mr. Wang Honggang from the Shanghai Academy of Social Sciences) confirmed the authenticity of the costume paintings. They believed that the shaman attire described in the

epic was no longer visible and only existed in words. The outfits constructed by the scholars are essentially recreations of the descriptions of costumes in the epic, but also alluding to shaman attire of comparable nationalities from around the world. The six produced costumes serve as a point of reference.

3.1 Uses of clothing

Based on my study, the clothing in Wumesiben Mama includes divine costume, funeral outfit, diving suit, tribe chief suit, and daily clothes. I carry out my study based on the above five uses and situations, which can be seen in the use statistics schedule of clothing in Wumesiben Mama.

Table 1: Use Statistics Schedule of Clothing in Wumesiben Mama

I	II	III	IV	V
Divine costumes	Funeral outfits	Diving suit	Daily clothing of Donghai People and the tribes	Tribe chief suit
Wumesiben shaman suit	Funeral coat (soul seeking suit)	Diving suit	Donghai people's clothing	(Huangzhangzi Tribe) Faji Chief Suit
Wumesiben's suit for sea ritual	Wumesiben's funeral outfit		Suits of the sirens island	(Wubusun Tribe) Nanluojin Chief Suit (female)
The suit worn by Wumesiben during fighting sirens	The suit worn by the mourners		Zhuluhan Tribe	(Wubusun Tribe) Gude Chief Suit (male)
The suit worn by Wumesiben during the voyage to search for the sun.			Huangzhangzi Tribe	(Wubusun Tribe) Wumesiben Chief Suit (female)
Suits for the junior shamans			Huihan Tribe	
			Bubusun Tribe	
			Funi Tribe	

3.1.1 Divine costumes

The divine costumes are of the most academic value. The divine costumes, based on my study include shaman suits, suits for sea ritual, dancing suits and war suits, which are related to religious belief.

It can be inferred from the name that divine costumes are used by shamans for ritual activities and are the symbols of gods. Shamans are the media between human beings and supernatural powers and their appearances were different from ordinary people so that their mysterious power of communicating with gods can be protruded. Wumesiben Mama shows the particular divine costumes at that time vividly (Yuguang, 2017)

3.1.1.1 Shaman suits

It's unfortunate that we can no longer view the real divine costumes of that time; all we have are only the records in historical archives. Wumesiben Mama provides vivid and detailed descriptions of the suits Wumesiben wore during shaman rituals: "she hangs the white mouse skins all over her body; she hangs the grey mouse skins all over her body; she hangs the white fox skins all over her body; she hangs the black otter skins all over her body; she makes colorful stones into headdresses; she makes bird bones into headdresses; she makes fish bones into headdress. This description reveals that divine costumes are made from the skins

and bones of animals and plants from the sky, the ground, and the sea, as well as some shells, plants, uncommon birds, beasts, and precious stones. Shamans believed that the objects they wore would allow them to speak with gods and repel evil. As the most distinguished chief shaman, the descriptions may also imply that she possessed remarkable abilities and bravery. The suit can be seen in the figure below.



Figure 1. The Shaman Suit of Wumesiben Mama

Note: the picture is drawn by the researcher based on the contents in page 66 in *Wumesiben Mama* (narrated by Lu Liankun, annotated by Fu Yuguang and published by Jilin People's Press in 2007)

3.1.1.2 Sea divine costume

Sea ritual was a grand ritual of Shamanism held by Donghai Nuzhen people, the ancestors of Manchu, on the sea. Donghai Nuzhen people lived in the coastal area for generations by boating and fishing, so they worshiped the mysterious ocean and made up the fairy tale of Donghai Goddess. The sea ritual was held mainly to pray for a successful and safe voyage and express gratefulness to the blessing from Donghai Goddess. Based on the text of the epic, the sea ritual of the Donghai Nuzhen people includes two main types: expedition rituals and sea burial funerals. Wumesiben launched five voyages to explore the ocean and chase the trace of the sun, for four of which the grand voyage rituals were held before setoff. The ritual for the second voyage, which was led by Wumesiben personally, was the grandest and most formal. The magnificent and grand ritual lasted for more than ten days (Shuyun, 2013). As described in *Wumesiben Mama*, “Wumesiben, the wisest and greatest chief, put on the precious divine costume – sea divine costume which was made of skins of the tiger, leopard, eagle, whale, roe deer, wolf and python, held up the percussion instrument made of one hundred silver bells and the ritual divination bones made of one hundred marine fish teeth and wore the decoration with one hundred embedded whale eyes and the ritual streamers made of the colored feathers from one hundred birds. This is Wumesiben’s messenger.” The sea divine costume on Wumesiben was made of the skins of 8 types of animals and decorated with silver bells, marine fish teeth, whale eyes, and colored bird feathers. The unbelievable luxury of the suit suggests the sincere worship of Donghai Nuzhen people to the sea and the important status of the Great Shaman. The suit is shown in the figure below.



Figure 2. The Sea Devine Suit of Wumesiben Mama

Note: the picture is drawn by the researcher based on the contents in page 106-107 in *Wumesiben Mama* (narrated by Lu Liankun, annotated by Fu Yuguang and published by Jilin People's Press in 2007)

3.1.1.3 Dance costume

According to my research and statistics, there are as many as 35 known dance names in Wumesiben. In section of “Wumesiben’s dance costume was described in “Fight Dance Against Sirens”: “Wumesiben is wearing a shawl made of Oriental pearl, a cloak carved with silver, a long white velvet dress, golden sleeves made of flying squirrel skin, a waist knitted with golden pheasant velvet, and ribbons embroidered with the backs of whales, sharks, bears, leopards, badgers, wolves and snakes. The ribbons are embedded with bone whistles and reflect silver light. The beak beads were accompanied by Wumesiben’s rushing drums and dancing steps, and she wore a hundred braided hats fashioned with the feathers of nine-striped birds.” The dancing costume is comprised of shawls, capes, long skirts, colorful sleeves, waistcoats, ribbons, colorful boots, and braided hats, and is constructed from as many as 22 different types of materials using embroidery, inlay, and weaving techniques. Wumesiben stunned the Sirens with this dance outfit, and she defeated the hostile sirens with her heavenly goddess-like dance. Wumesiben utilizes dance as a weapon instead of battle to combat the Sirens. Islanders were eager to follow her, thus the Donghai people were no longer at peril. This dance costume’s contribution is irreplaceable.



Figure 3. Dance Costume of Wumesiben Mama

Note: the picture is drawn by the researcher based on the contents in page 94-95 in *Wumesiben Mama* (narrated by Lu Liankun, annotated by Fu Yuguang and published by Jilin People's Press in 2007)

3.1.1.4 Voyage rope

After Wumesiben became the Ubusun Chief and Great Shaman, she embarked on a total of five voyages to find the palace of the sun and provide permanent happiness and brilliance to the Donghai Tribe. On the second voyage, she led the fleet herself while wearing a costume described in *Wumesiben* as: “Wumesiben wore her favorite voyage outfit when she embarked on the journey. This garment was painstakingly crafted by the servants and Wubule’en, her favorite apprentice. The suit was exquisite, colorful, and brilliant; it had a cape made of nine hundred and ninety-nine pieces of ground Donghai colored stone, ribbons inlaid with nine hundred and ninety-nine colored shells, bands with a pattern of clouds, waters, and stars woven with nine hundred and ninety-nine whale whiskers, a loincloth made with carefully shaped anemones and water hyacinth leaves” This priceless voyage outfit consists of a cape, colored ribbons, bands, a loincloth, a hat, a pair of boots, and a pouch; the manufacturing methods include grinding, embedding, weaving, cutting, pasting, sewing, painting, soaking, and steaming, among others.



Figure 4. The Voyage Rope of Wumesiben Mama

Note: the picture is drawn by the researcher based on the contents in page 139-140 in *Wumesiben Mama* (narrated by Lu Liankun, annotated by Fu Yuguang and published by Jilin People's Press in 2007)

3.1.2 Funeral outfits

The funeral outfits recorded in *Wumesiben Mama* include the suits worn by Wumesiben for holding the soul-seeking ritual on the funeral and the suit on her in her funeral.

The text indicated that “Fifty pairs of funeral ladies in black bird suits spread their arms like flying birds, while thirty pairs of funeral men in black bear skins wept bitterly with their feet stamping the ground; nineteen pairs of white-haired old men in black fish skins waved and roared to the melancholy sea, and nineteen pairs of old ladies in black sheep skins looked up, shook their bodies, and wept like sheep. Wumesiben sang and danced while wearing a cape made of white swan feathers over her shoulder, a silver saint helmet woven with sea fish bones on her head, a silver shelter woven with whale bone pieces on her body, short and light boots made of carved whale bones, and back martens socks on her feet. The white swans circled the sky and called out in anguish.” It implies that feathers, bear skins, fish skins, and sheep skins are used to create the burial attire used during funeral rituals. In addition, it may be concluded from the text that their manufacturing procedure is extremely straightforward and that the color black is utilized throughout. To hold the soul-seeking ceremony, Wumesiben's funeral consists of a robe, a helmet, a shelter, and a pair of boots. The materials consist of feathers, fish bones, mink cashmere quality white and silver materials. It demonstrates that classes had emerged and suits might indicate a person's social standing.

The aged Wumesiben passed away on her fifth voyage and all the tribes in Donghai came to the coast to greet the coffin of Wumesiben. They “have white flowers, white furs and, white feathers over their shoulders and linens on their bodies”. It can be inferred that the clothing of tribe masses are simple and most of them put cloths over the shoulder and the materials are mostly plants, feathers and furs and the main color

is white, which can show the respects and worship to Wumesiben, the great Shaman and the chief of their tribe.

Sea burial is generated from the concept of Donghai ancestors, who believed that the life comes from and ends in the sea. The sea burial for Wumesiben was especially grand and extravagant.. The funeral outfit of Wumesiben was made of walrus skin, sea python skin, fish eye beads and whale skin. The materials were precious and full of beliefs about shamanism. The original text describes: “The body of Wumesiben was laid on the funeral boat and covered with walrus skin to keep her warm while moving in the sea, with sea python skin to help her move fast in the sea, with one hundred fish eye beads to brighten the dark sea and sea far, with whale skin to guard her from the ghosts and evils in the sea.”

The suit is shown in the figure below.



Figure 5. The Funeral outfit of Wumesiben Mama

Note: the picture is drawn by the researcher based on the contents in page 85 in Wumesiben Mama (narrated by Lu Liankun, annotated by Fu Yuguang and published by Jilin People’s Press in 2007)

3.1.3 Diving Suit

The ocean, a vast and mysterious blue field, has been deeply attracting and inspiring human’s desire for exploration. In order to prevent the possible danger of sailing at sea, human beings have been exploring a kind of clothing for diving. The ancestors of Donghai Nuzhen people lived in the coastal area by generations and they invented one of the earliest diving suits in the world. As described in “Fight Song of Sirens” in Wumesiben Mama: “Ubusun people gathers on the winding coast; the marine soldiers wear the crystal clear scale suits processed by means of oil soaking and webs on the feet; they wear the waterproof air bag made of animal skins on the head and dive into the blue sea and become a part of the sea.” It’s learned from the text that this special diving suit has three parts: coat, web and head air bag. The coat is made of fish skin and soaked in oil to resist water. The webs are bound on the feet. The creation inspiration is from the diving animals. The waterproof air bag is like the oxygen mask we use for diving today. Generally, it’s close to the

modern diving suit. The protective diving suit recorded in the epic can dramatically improve the safety and display the wisdom and impressive creativity of the ancestors of Donghai Nuzhen people. The suit is shown in the figure below.

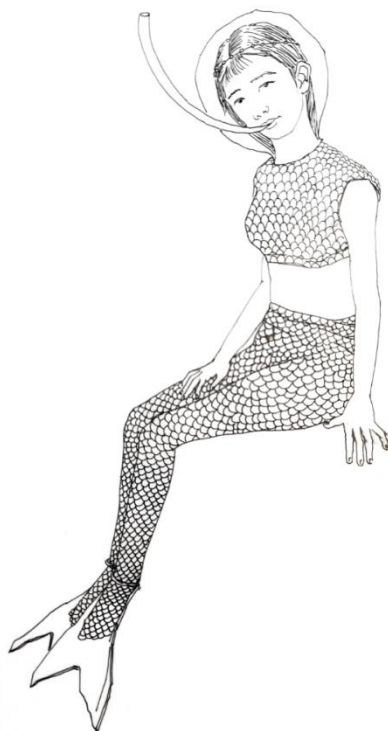


Figure 6. Diving Suit of Wumesiben Mama

Note: the picture is drawn by the researcher based on the contents in page 85 in *Wumesiben Mama* (narrated by Lu Liankun, annotated by Fu Yuguang and published by Jilin People's Press in 2007)

3.1.4 Chief Suit

It's shown in my statistics that ten of the eleven tribes in *Wumesiben Mama* mentioned chiefs and a total of twenty nine chiefs are mentioned and the suits of four chiefs were described, including *Wumesiben* (a woman), *Gude Chief* (a man), *Ubuxun Nanluojin Chief* (a woman), and *Fajiling Mama* (a woman).

The *Huangzhangzi Tribe's* woman chief wore a shining crown with ringing bells; the crown was adorned with three thousand pearls and colored jades; a pair of silver rings with patterns of whistling birds hung on the ears; her coat was silver colored and adorned with whale eyes, dragon bones, and cloud patterns made of goose down. She was like a fairy lady from heaven to earth. It suggests that the *Faji Chief* wore a crown, earrings, and a coat. The coat was made of whale eyes, dragon bones, and goose down.

Nanluojin Chief (a woman) of the *Ubusun Tribe* wore a dress. *Gude Chief* (a man) of the *Ubusun Tribe* wore a short leather culotte with no more description was provided but the book only mentioned that it's a valuable chief suit. More details were given to the crown. The book said that "his crown has the patterns of five eagles and the sun and the moon and has been passed down by five generations for over two hundred years."

It's inferred that the coats of chiefs were not described in detail but the crowns were highlighted significantly, from which we can learn that the crown enjoys a more important position in the chief suit.

3.1.5 The daily apparels of Donghai Nuzhen people and the tribes around

Guo Shuyun, a famous scholar, supposed that Wumesiben Mama recorded many Donghai Nuzhen people tribes and it claimed “there are seven hundred towns”; however, only nine tribes have specific names, including Ubusun Tribe, Zhuluhan Tribe, Huihan Tribe, Qiemuken Tribe, Kingdom of Women, 13 reefs of the two islands, Funi, and Woerhun. The names of the other two tribes are not provided but only the island names are given, Green Island and Anban Island.

For the clothing of the Donghai Nuzhen people, the text records that “they put straw rain capes with feathers and furs over the shoulders in winter and wear leaves around the waist with the remaining body naked and walk with naked feet. The women weave linens and use small pieces of fur to cover the private parts.” “Donghai Nuzhen people use animal skins as coats and don’t know how to sew;” “Wumesiben takes out three coats: a straw cape, a cape weaved with leather bands and a cape weaved with velvet for the savages.” We can learn that Donghai Nuzhen people put the coat over their shoulders and the materials include plants, feathers and leather. The production processes are simple and mainly include hanging, binding and weaving. What’s the clothing of sirens like? It’s described in the book that “they have tattoos on their bodies and naked feet and wear waist-length hair. They wear sea leaves underarm and fish skin arm coats; the tattoos are painted with the colored muds with nine colors; the sirens use grass and vines to protect their bodies and wear fish coats; they put on vine leaves and vanillas and insert colorful feathers into hair.” The clothing of Zhuluhan Tribe and Huangzhangzi Tribe are made of deer and doesn’t cover the haunch. The women in the Funi Tribe wear feathers and the men tie belts.

In short, the daily apparels of Donghai Nuzhen people and the tribes around are simple and made by process of putting over, tying and weaving and the materials are from the local animals and plants.

3.2 Clothing styles

In the clothing of ancestors of Donghai Nuzhen people, a shaman suit can represent the highest clothing culture and art. The shaman suits are subject to the fixed form and consist of coat and decorations; the coat includes ritual coat, ritual skirt, loincloth, crap and wraps.

3.2.1 Shaman divine costume

Shaman divine costume is also called a magic suit as it is an important part of a shaman, so it’s also directly referred to as “shaman divine costume”. It’s mainly made of fish skins, animal skins, and furs. Many silver bells will be hung on the divine costume and will ring when the shaman dances. The bell sounds will correspond to the ritual drum beats. It’s said that the bell sounds can activate gods and frighten away evils. The suits have ritual stones, bones, and feathers sewed as decoration, standing for the worshiped gods and requesting blessing from the gods. The epic describes a sea divine costume collected by Wumesiben: “The bells are installed as the percussion instruments, many fish teeth are used to sew the divination of the suit, one hundred fur seal furs are used to make soul stones, one hundred whale eyes are made into spikes of the suit, and the colored feathers of one hundred birds are made into ribbons of the suit.” The suit can be seen in the figure below.

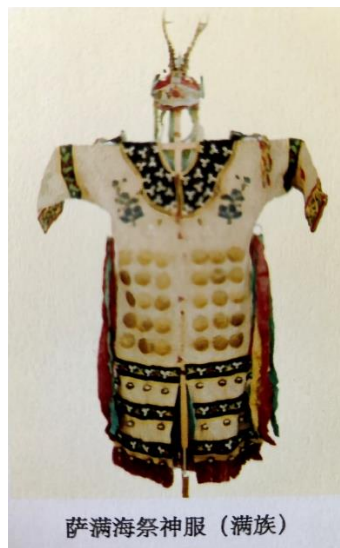


Figure 7. Shaman Clothing- Divine costume
Source: Yuguang, Shaman Art, Xueyuan Press, 2009, p.4

3.2.2 Cloak

The cloak is the most typical form; collar, cap-less, sleeveless, usually with slits at the back, and the whole person is covered in a cage. It's used against freezing weather and cold winds. In the epic, Wumesiben has the cloaks made of various materials by weaving, such as "straw weaved cloak", "leather ribbons weaved cloak" "velvet weaved cloak" and "silver eagle cloak". It suggests that the technologies of cloak making vary based on materials and weaving is used. Grass and other plants are used to make cloths. The materials of clothing expanded. However, the cloak can hardly be found in today's shaman clothing. The figure of a cloak can be seen in the figure below.



Figure 8. A picture of Empress Dowager Cixi in her cloak
Source: <https://www.zhihu.com/question/41812582>



Figure 9. A cloak in the Palace Museum
Source: <https://www.zhihu.com/question/41812582>

3.2.3 Loincloth

Loincloth is the cloth around the belly. The loincloth of shamanism is unpractical. In shaman suits, loincloth is special for hanging percussion instruments, several of dozens of layers of metal instruments. The instruments are the cone shaped tubes rolled by metal and sound by crashing each other during shamans' dancing. Wumesiben has the loincloths made of various materials and some are made directly of a part of the animals. For example, the leopard tail loincloth, bear claw loincloth, or lynx tail loincloth. The loincloth can be seen in the figures below.



Figure 10. A part of shaman clothing – Loincloth
Source: Taken by Yan Xu (the author of the Thesis) in Jilin Manchu Museum on October 31, 2020



Figure 11. Waist Bells

Source: Taken by Yan Xu (the author of the Thesis) in Liaoning Manchu Museum on April 5, 2021

3.2.4 Apron

Aprons were the first thing our forefathers put on their bodies during the wild times. In a long historical period, apron has protected the most important part of people's reproduction from animals and thorns, made great contributions, and had a great impact on national psychology. [3] It is rumored that shaman activities began as early as the matriarchal clan society. At that time, women were engaged in shaman activities, and shaman wearing God's skirt started at this time (Zhang, 2015).

Shaman's ritual dress is the lower part of the divine costume, which represents clouds. Some dresses are connected with divine costumes, so the dress is an important part of Shaman's clothes. In the chapter "Sirens Dance Songs" of Wumesiben Mama, Wumesiben wears a very gorgeous white velvet dress. It must be very light, elegant and eye-catching when dancing.

Shaman costumes have a strict hierarchy, and the little shamans wear sacred skirts made of ordinary animal skins and fish skins, such as "sudden willingness in tiger skirts, sudden spring in leopard skirts, and sudden rush in carved skirts and sudden gold in fish skirts". These little shamans are in sharp contrast with the long white velvet dresses of Wumesiben, the great shaman, and their status and rank are very different. The figures below show the apron types.



Figure 12. A part of shaman clothing – apron

Source: Yu Guang, Shamanism Arts, Xueyuan Press, 2009, p.8



Figure 13. A part of shaman clothing – apron

Source: taken by Yan Xu (the author of the Thesis) in Jilin Manchu Museum on October 31, 2020

3.2.5 Shawl

Cloud shoulder is the earliest shape of shawl, and the earliest record of cloud shoulder can be found in *Jin Yu Fu Zhi* (A book about clothing in the Jin Dynasty). The earliest shape of cloud shoulder originated from the western regions, and its origin is related to the west. In Peking Opera costumes, cloud shoulder is mostly used for fairy characters, which just has the ability to communicate with gods together with shaman witches. There is a cloud shoulder made of animal bones and used for shaman activities on display in Jinshangjing Museum in Acheng, Heilongjiang Province. Judging from the animal patterns made of animal bones, it should belong to the early shaman religious dress (Yi, 2013).

Shaman's divine costumes not only have symbols communicating with gods, showing identity and intimidating demons, but also show off the power and wealth of the clan. This is concentrated on the shaman's special and striking shawl. The shawl is just the face of the divine body, and it is a very dazzling part. Therefore, shamans are extremely concerned about the decorations in the front and back parts of the shawl, which can not only deter evil spirits, but also be beautiful and attract the love of the gods. It can also show the extraordinary strength and wealth of the clan. Therefore, shawls are made of the strangest and richest materials. God's clothes are hard to do, and shawls are especially hard to do. These hard-to-find treasures are used in making God's clothes and noodles. Wumesiben Shaman's dance costume is a shawl made of East Pearl. The shawls are shown in the figure below.



Figure 14. A part of shaman clothing – wrap (front view)

Source: Taken by Yan Xu (the author of the Thesis) in Jilin Manchu Museum on October 31, 2020



Figure 15. A part of shaman clothing – wrap (back view)

Source: Taken by Yan Xu (the author of the Thesis) in Jilin Manchu Museum on October 31, 2020

3.2.6 Divine hat

The shaman's divine hat is an important symbol to distinguish between the shaman's divine system, the shaman's level, and divine skill. Hat horns can increase with the shaman's grade; generally there are three to nine corners. The older a shaman is, the more corners there will be on the hat. The hat of Wumesiben in the epic is different from the normal one and is made and provided by the Ubusun people to express the honor and worship of Wumesiben. During dancing against the siren, Wumesiben wore a hat with "bird features and one hundred braids; there are three wood-carved golden birds stretching out wings. Wumesiben was beating the Divine drum. The "feather type divine hat" is a symbol for worshipping the birds, and the odd number of birds will be carved on the hat because the odd number is Yang and stands for the Sun Bird soaring in the universe with freedom and communication between the universe and human beings. It's an important sign of sunbird worship by the Manchu ancestors.

According to the investigation of Japanese scholar Akihabara in 1930s, the ceremonial robes used by Oroqen shamans have many magical and incantative functions, with metal antlers on their caps and a bird shape in the middle. They are considered to be the spiritual bird Guo Gong, and Guo Gong's bird is regarded as a sacred spiritual bird. Its voice can attract good spirits, and it is put on the shoulders only because the good spirits it attracts drill into the body through the ear holes (Shouwuwu, 1944). It can be seen that the image and cultural connotation of birds used in Wumesiben's dancing hat is extremely rich.

The following figure shows the divine hat.



Figure 16. A part of shaman clothing – divine hat

Source: Jilin Manchu Museum, photographed by the researcher on October 31, 2020

3.2.7 Divine boots

The magic shoes worn by shamans used to be made of fish skin, but later they were made of wild boar skin or cowhide. The style is the same as that of shaman, which is wear-resistant and warm. A bell is tied on the toe, and frogs, snakes and other patterns are sewn on the shoes. The colorful boots of Wumesiben

in the epic are woven from mink wool, and the dragon-rolling boots are used in “The Song of Looking for the Sun God”. The exquisite production process shows that Wumesiben attaches great importance to the material and decoration of her shoes.

The following figures show the divine boots.

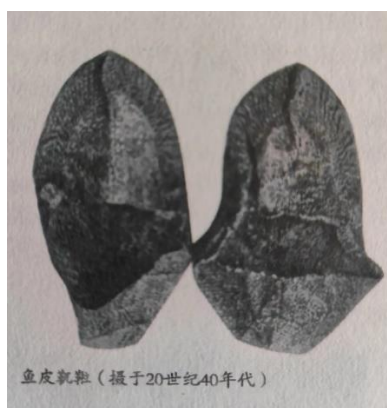


Figure 17. The Fish Skin Boots of Heze People

Source: Xuebin, Xuekun, Heze People’s Fishing and Hunting Life, Heilongjiang Art Press, 2006, p.87



Figure 18. Leather books of Elunchun people

Source: Xuebin, Elunchun People’s Hunting Life, Heilongjiang Art Press, 2003, p.88

3.3 Materials

It’s shown in my study that the materials used in the costumes of the ancestors of the Nuzhen in Donghai in Wumesiben Mama are subject to original characteristics. There are five categories: leather feathers (Figure 19), bone and teeth (Figure 20), shellfish (Figure 21), metal pieces (Figure 22) and plants. The divine costumes used a lot of precious animal and plant materials, which reflected the pious faith and extraordinary creativity of the ancestors of Jurchen in Donghai.



Figure 19. Leather as clothing material

Source: Northeast China Fur Market, photographed by the researcher



Figure 20. Teeth and bones as clothing materials

Source: photographed by the researcher



Figure 21. Cowrie shells

Source: <https://www.ancient-origins.net/history-ancient-traditions/shell-money-0011793>



Figure 22. Metal pieces

Source: <https://www.duitang.com/blog/?id=78741488>

The materials utilized to create shaman outfits are of the highest quality and are dictated by the clan's living location; natural materials are often used. After the leather is selected, it is boiled and dried by a special person. Wumesiben used to be an excellent fur processing woman at young age. Apart from shaman's self-making, after shaman and clan allow and select, God can also entrust some decent, noble-minded and skillful elderly mothers in clan, most of whom have in-laws or friendly ties with shaman. In the chapter "Looking for, Looking for the Song of the Sun God" in Wumesiben Mama, Wumesiben's robe was made by her maids and Ubule'en, one of her favorite apprentices.

In ancient times, the some strange prototype ornaments were used on the divine costumes, which were processed by shamans. Later, simple carved ornaments were gradually added as worshippers. With the progress of society, the influence of shaman's theocracy had elevated and the form of divine clothes became growingly exquisite. The stranger and more difficult materials and rare treasures were used to make suits; the production time, working procedure, taboo and process were also extremely difficult. The figures below were two shaman costumes with a history of 200 to 300 years donated by Mr. Fu Yuguang in Jilin Manchu Museum. They were well-made and dazzling. (Figure 23 and Figure 24)



Figure 23 The overall image of divine costumes

Source: Northeast China Fur Market, photographed by the researcher



Figure 24 The overall image of divine costumes

Source: Northeast China Fur Market, photographed by the researcher

Lots of clothing materials are recorded in Wumesiben Mama. My analysis is carried out according to the types, uses and material categories of clothing. The clothing materials analysis tables (1) and (2) in the epic Wumesiben Mama show the detailed contents of my study.

Table 2. Analysis of the Types and Uses of Clothing Materials in Manchu Epic Wumesiben Mama (1)

No.	Suit type	Purpose	Materials
1	Divine costumes	Shaman suit of Wumesiben	Furs, stones, bones, teeth, tails, claws
2		Sea ritual suit of Wumesiben	Skin, silver bell, teeth, fish eyes and hair
3		Dancing suit of Wumesiben	Oriental pearl, velvet, skin, bone, fish scale, snail, feather, wood
4		Sea voyage rope of Wumesiben	Pear, seashell, whale beard, anemone, water hyacinth leaf, turtle board, deciduous green branches of spruce.
5	Funeral outfit	Funeral outfit (soul seeking suit)	Feather, skin, bone, down,
6		Wumesiben's funeral outfit	Skin, fish eye beads,
7		Funeral outfit in the tribe people's funeral	White flowers, bark, feather and hemp
8	Diving suit	Diving suit	Fish scales and skins
9	Donghai people's daily apparel	Donghai people's suit	Maomao, feather, bark, branches and leaves, silk hemp
10	Clothing of people around	Sirens suit	Sea leaf, bark, grass, vine, fragrant flowers and feathers

Table 3. Analysis of the Types and Uses of Clothing Materials in Manchu Epic Wumesiben Mama (2)

No.	Material type	Detailed materials
1	Skin Class	White mouse skin, chinchilla skin, silver fox skin, black otter skin, tiger skin, leopard skin, eagle skin, whale skin, roe skin, wolf skin, python skin, sea bear skin, flying squirrel skin, shark skin, bear skin, badger skin, fox skin, raccoon's back skin, fish scale skin, etc.
2	Bone Class	Bird bone, fish bone, sea fish bone, whale bone,
3	Stone Class	Colored stone, Donghai colored stone,
4	Shellfish	Snails, seashells,
5	Tooth Class	Teeth, sea fish teeth
6	Feather Class	Colorful feather, silver carved feather, white velvet, golden pheasant feather, nine-striped bird feather, swan feather.
7	Plant Class	Trees, anemones, sea anemones, deciduous green branches of spruce, white flowers, mangroves, branches and leaves, silk hemp, sea hyacinth leaves, grass vines and fragrant flowers.
8	Animal Tail	Leopard tail
9	Animal Claw	Bear claws
10	Baleen	Whale moustache
11	Metal	silver bell
12	Fish Eyes	Whale eyes, fish eye beads,

According to the statistics of the percentage of materials used in clothing, leather and feathers account for the most, reaching 53.3%. Other materials, such as bone and teeth, shellfish, metals and plants, accounted for 46.7%, among which plants accounted for the most, reaching 18.3%. Dental materials account for the same proportion as other materials, accounting for 10%; Stones and shellfish account for 6.7%; Metal material is the least, accounting for only 1.7%. The statistics can be seen in Figure 21 below.

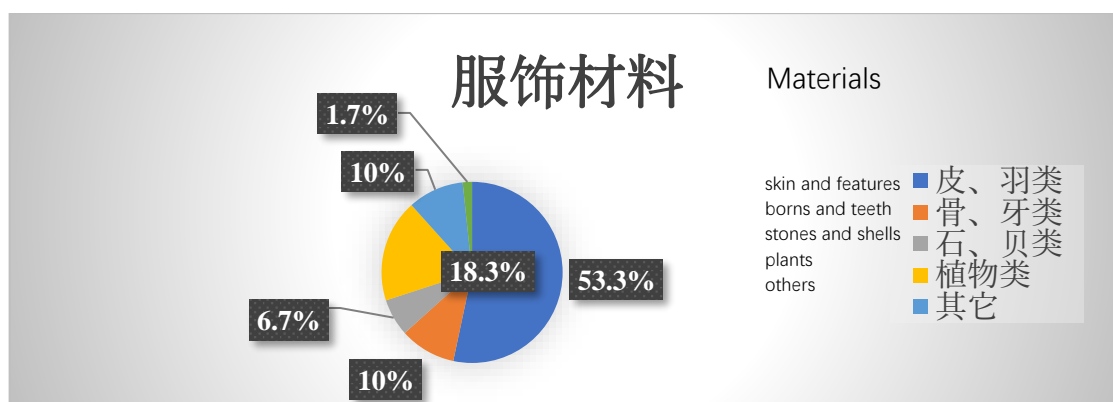


Figure 25 Material statistics in the epic
Source: Compiled and processed by the researchers

3.4 Manufacturing process

Through the study of the costumes and utensils mentioned in the epic Wumesiben Mama, I summarized seven representative processes: dyeing, sewing, polishing, inlaying, weaving, embroidery and shearing.

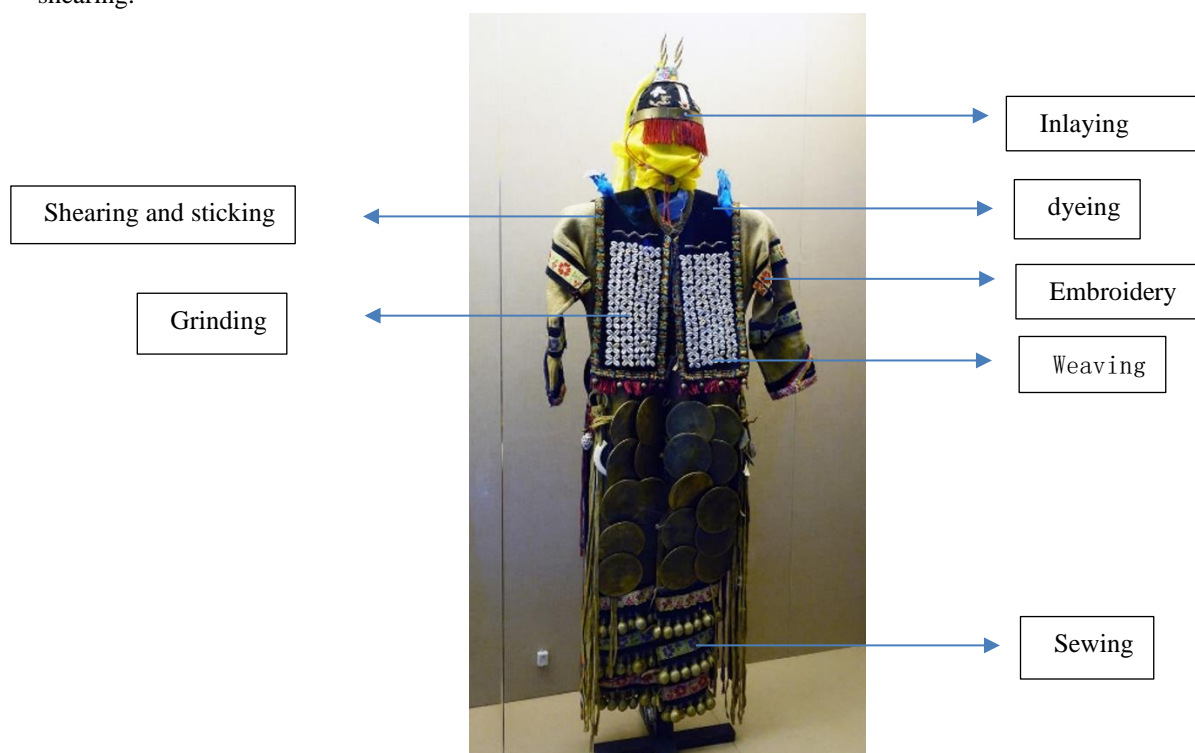


Figure 26. Shaman costume of Oroqen people
Source: https://sucai.redocn.com/yishuwenhua_7028555.html

3.4.1 Dyeing

The dyeing procedures described in the epic are essentially plant dyeing; that is, natural plant dyes are employed to smear and color textiles, and the roots, stems, leaves, and skins of plant blooms and fruits

can be boiled to extract the dying liquid for dipping and smearing.’ The sacred boots that Wumesiben Mama wears with her robe are dragon-rolling boots painted with spruce leaves and twigs. Sadly, this dying practice has been lost in China, however it is reported that certain Nanai people in Russia still employ it.

3.4.2 Sewing

When people in the Donghai dive into the sea, they wear water-proof air bags hand-sewn with animal skins; A golden eagle sun hat with wings sewn from the skin of a sea turtle for ten thousand years; Shaman drums sewn on both sides with animal skins, such as whale skin drum, fish skin duck egg drum, bear skin oval drum, etc. All these indicate that sewing technology has emerged, revealing the sewing technology and materials of that era from one side.

3.4.3 Grinding

In Wumesiben Mama, it is stated that Wumesiben's trip robe is composed of "nine hundred ninety-nine ground Donghai color stones." It is created by grinding rough-surfaced Donghai color stones into spherical beads, which were linked to make bead spikes and hung from the robe. The entire robe appeared vivid, brilliant, and expensive. This document may reflect the Donghai people's sophisticated grinding technology.

3.4.4 Inlaying

The application of inlaying technology makes it possible to integrate various materials to add the visual feeling of matching different materials and achieve the decorative effect and symbolic meaning of clothing more colorful. For example, Wumesiben's sea-worshipping God's clothes are inlaid with hundreds of whale eyes. Wumesiben's dance dress is inlaid with bone whistle at the tip; Wu Xi ran out of the sea to search for the sun's robe and used 999 colorful sashes inlaid with nine colored seashells; Faji women in Huangzhangzi department wear dazzling crowns, ring tones, and 3,000 sea beads inlaid with nine-color Dragon Baoyu. These costumes and crowns are made of mosaic technology, and the materials used are whale eyes, bone whistles, seashells, Haizhu and other rare treasures to decorate the costumes, symbolizing the supreme status of shamans and rare kings.

3.4.5 Weaving

Weaving is one of the oldest handicrafts of mankind. About before the invention of the original textile technology, there was a stage of making clothes by hand knitting. Weaving techniques are widely used in Wumesiben Mama. For example, in the chapter "Siren Fight Dance", Wumesiben's dancing dress is knitted with golden pheasant velvet, her colorful boots are knitted with mink velvet, and her hundred braided hats are knitted with nine-striped bird down. It can be seen that people at that time have mastered the superb technology of knitting with animal down. Wumesiben's sea voyage rope used 999 sea whalebone to weave the cloud, water and starlight stripes. The silver helmet worn in mourning clothes (soul-searching clothes) is made of sea fish bones, and the silver armor worn is made of whale bones. From the above three pieces of clothing, we can see that the waistcoat, boots, hats and armor are all knitted, and the materials are precious materials such as fluff, fishbone and whalebone.

3.4.6 Embroidery is a general term for all kinds of decorative patterns embroidered on fabrics by needlework. Embroidery is one of the traditional Chinese folk crafts, with a history of at least two or three thousand years in China. The embroidery materials described in Wumesiben Mama are mostly animal skins and tendons. For example, Wumesiben's mop skirt ribbon is embroidered with the backs of whales, sharks, tigers, bears, leopards, badgers, wolves, pigs, foxes, pythons and raccoons.

3.4.7 Shearing and sticking

Clipping technology has been around for a very long time. Some scholars think that it can be traced back to the Neolithic Age, when it was used as a sacrifice and a totem. We can guess what it is by looking at primitive sites, rock paintings, and painted pottery. From this, we can figure out that the beginnings of clipping technology were tied to primitive religious activities. Before the Han Dynasty, when “paper” was invented, people had been using similar methods for a long time to cut silk, felt, gold foil, silver foil, and copper foil, as well as leaf, bark, animal skin, fish skin, and other sheet materials found in nature. For example, Records of the Historian tells the story of Zhou Wuwang cutting and sealing his brother. Wumesiben’s robe for her sea voyage to look for the sun is decorated at the waist by cutting and pasting pieces. The original text says, “Cut out thousands of flowers from anemone and sea hyacinth leaves and glue them into a Batulu embroidered belt with a waist circumference.”

Table 4 The handcraft processes used for clothing in Wumesiben Mama:

No.	Suit type	Purpose	Processes
1	Divine costume	Shaman suit of Wumesiben	
2		Sea ritual suit of Wumesiben	Sewing and inlaying
3		Dancing suit of Wumesiben	Weaving, embroidery, inlaying,
4		Sea voyage rope of Wumesiben	Grinding, inlaying, knitting, shearing and gluing, sewing and dyeing.
5	Funeral outfit	Funeral outfit (soul seeking suit)	Weaving and engraving
6		Wumesiben’s funeral outfit	
7		Funeral outfit in the tribe people’s funeral	
8	Diving suit	Diving suit	Sewing
9	Donghai people’s daily apparel	Donghai people’s suit	
10	Clothing of people around	Sirens suit	

3.5 Color of clothing

Manchu people have a white tradition. In the Manchu concept, white is the most sacred color. It is a symbol of light, happiness, peace and innocence. Shamanism believes that white is the color of the sun, and sunlight is the source of life, so white is the color of life and auspicious (Honggang, 2011). There are many descriptions of white sacred clothes and rare clothes in Wumesiben Mama. Sacred white clothes are the symbol of holiness and magic. Shaman’s upper body is dazzling with white light. It is whether feather clothes woven from feathers or light clothes woven with East Pearl strings. They represent the light, and flying depends on the sun’s rays, and the sky is full of colors.

Except white, the dress colors in Wumesiben Mama are colorful. Because the dress materials come from nature, the inherent colors of these natural materials exude unique charm, such as stone, shellfish, feathers, metal, fish eyes and other materials are good at reflecting light, while leather, plants and other materials are good at absorbing light. Rich natural precious materials are matched with each other and set off against each other, which shows the worship and ideas of Donghai Nuzhen people on color.

I have studied the color of various clothing types in Wumesiben Mama. See the following table for details.

Table 5 Colors of various clothing types

No.	Suit type	Purpose	Color
1	Divine costume	Shaman suit of Wumesiben	White, gray, silver, black, colored stone, natural animal fur (leopard’s tail, owl’s tail) and tan.

No.	Suit type	Purpose	Color
2		Sea ritual suit of Wumesiben	Silver, white, colorful, natural animal fur color (tiger, leopard, eagle, whale, roe deer, wolf, python, sea bear skin, colorful swallow hair)
3		Dancing suit of Wumesiben	Natural fur color (golden pheasant, whale, shark, tiger, bear, leopard, badger, wolf, snake, fox, python, raccoon's back skin, silver carving, flying squirrel, snail) color, silver, gold and white.
4		Sea voyage rope of Wumesiben	Whale beard, anemone, sea hyacinth leaf, turtle skin, gold, green, blue, color,
5	Funeral outfit	Funeral outfit (soul seeking suit)	Black, white
6		Wumesiben's funeral outfit	Natural colors (marine skin, fish eye beads) are similar to black and white.
7		Funeral outfit in the tribe people's funeral	White
8	Diving suit	Diving suit	Blue
9	Donghai people's daily apparel	Donghai people's suit	Brown, natural color (skin, feathers) color, green
10	Clothing of people around	Sirens suit	Color, natural color (skin, feathers) color,

In conclusion, most Donghai Nuzhen people wear clothes that are white, black, silver, gray, gold, green, blue, brown, and other colors. Color also reveals a person's social class. For example, Wumesiben and Faji women in the Huangzhangzi department wear mostly white clothes, while ordinary maids and Donghai people wear mostly black and colors that come from animals and plants.

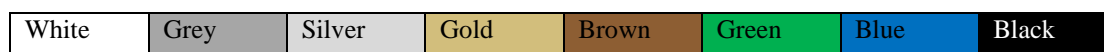


Figure 27. Common colors used in the clothing of Manchu epic Wumesiben Mama

Source: Compiled and processed by the researchers

4. Results

Through the research and interpretation of five aspects: clothing use, clothing style, production materials, production technology, and clothing color in Manchu epic Wumesiben Mama. We can draw a comprehensive outline of the costumes of that era. Although the overall level of the costumes of the Donghai Nuzhen people is still in the primitive stage of costumes, the costumes of God are particularly prominent, representing the highest level of costumes in that era, and are quite mature. The materials used in costumes are extremely rich. Apart from using local natural materials, they also travel far and wide to obtain precious materials. These materials are more used in the clothing of God and the clothing of rare people, which shows that the class and the polarization between rich and poor have already appeared at that time, and ordinary people could not just use any precious materials that they wanted. The costume making technology of the Donghai Nuzhen people is diverse and mature. In the long-term social practice, people have formed the concept of color. Apart from advocating white, they also like rich colors, and make use of the characteristics of precious materials to reflect and absorb light to create a dazzling costume. All these reflect the wisdom and belief of the ancestors of Donghai Nuzhen people.

5. Discussion

The origin, growth, and evolution of costumes are profoundly influenced by numerous variables, such as culture and society, but they are also strongly tied to the natural environment in which humans live. The creation, development, and evolution of costumes are significantly influenced by a range of factors, such as society and culture, but they are also closely related to the natural environment in which humans exist.

According to my research, the diving suit referenced in the text indicates that the Donghai Nuzhen people did research at least 200 years before Europeans. In China, the historic clothing-dyeing technique has been lost, however it is thought that certain Nanai people in Russia still use it. During the Qing Dynasty, this cloak was made. Prior to the Qing Dynasty, no cultural relics, relevant documents, or conclusive photographs were discovered. Future research must study in further detail how to add shawls and apply them to God's clothes, etc.

6. Conclusion

Extremely rich in connotation, the costume culture of Wumesiben Mama forms a costume culture with distinctive regional traits. It beautifully illustrates the various costume traits of their era and restores this obscure costume history. Among them, the divine costume is not only the carrier of the cultural beliefs of the Donghai Nuzhen people, but also an important source for the succeeding generations' growth of the Donghai Nuzhen people's costume, which displays the historic and inherited qualities of costumes. It fills in the gaps of unknown historical and cultural records of the Donghai from previous dynasties and provides essential reference materials for our in-depth research of this historical and cultural period.

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APPENDIX A

JOURNAL OF CONTEMPORARY SOCIAL SCIENCES AND HUMANITIES

(Formerly RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES)

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Pongjan Yooapat, *Rangsit University, Thailand*
Ponn Virulrak, *Chulalongkorn University, Thailand*
Pornchai Tarkulwaranont, *Thammasat University, Thailand*
Pornsook Tantrarungroj, *Chulalongkorn University, Thailand*
Phaituraya Dassé, *Thammasat University, Thailand*
Prapaporn Chukumnerd, *Prince of Songkla University, Thailand*
Prapon Sahapattana, *National Institute of Development Administration, Thailand*
Praveen Nahar, *National Institute of Design, India*
Prayoon Tosanguan, *Rangsit University, Thailand*
Ponn Virulrak, *Chulalongkorn University, Thailand*
Pornchai Tarkulwaranont, *Thammasat University, Thailand*
Rattaphong Sonsuphap, *Rangsit University, Thailand*
Raymond Andrew Zepp, *Dewey International University, Cambodia*
Romyen Kosaikanont, *Mae Fah Luang University, Thailand*
Ruja Pholsward, *Rangsit University, Thailand*
Rujira Sa-ngasang, *Eastern Asia University, Thailand*
Sakon Varanyuwatana, *Thammasat University, Thailand*
Sillapaporn Srijunpetch, *Thammasat University, Thailand*
Siridech Kumsuprom, *Dhurakij Pundit University, Thailand*
Sitanon Jesdapipat, *Rangsit University, Thailand*
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Sompong Sanguanbun, *Rangsit University, Thailand*
Sompong Sucharitkul, *Rangsit University, Thailand*
Somsak Tambunlertchai, *Thammasat University, Thailand*
Srisombat Chokprajakchat, *Mahidol University, Thailand*
Sukanya Buranadechachai, *Burapha University, Thailand*
Sumaman Pankham, *Rangsit University, Thailand*
Sunee Kanyajit, *Mahidol University, Thailand*
Suphat Sukamolson, *Maejo University, Thailand*
Supachai Kunaratanapruk, *Rangsit University, Thailand*
Supasawad Chardchawarn, *Thammasat University, Thailand*

Supawadee Sukeechep Moss, *Rajamangala University of Technology, Suvarnabhumi, Thailand*
Suppakorn Poonyarith, *Mahidol University, Thailand*
Surachai Sirikrai, *Thammasat University, Thailand*
Surachart Bumrungsuk, *Chulalongkorn University, Thailand*
Suraphol Srivithaya, *Rangsit University, Thailand*
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Surasit Thanadtang, *National Research Council of Thailand, Thailand*
Sureeshine Phollawan, *Sripatum University, Thailand*
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Teerawat Wongkaew, *Ministry of Foreign Affairs, Thailand*
Thanit Chindavanig, *Chulalongkorn University, Thailand*
Thawatthai Suvanpanich, *Sukhothai Thammathirat, Thailand*
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Vilawan Mangklatanakul, *Ministry of Foreign Affairs, Thailand*
Visanu Vongsinsirikul, *Dhurakij Pundit University, Thailand*
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Vorachai Sirikulchayanon, *Rangsit University, Thailand*
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Wanpadej Hongthong, *Mahidol University, Thailand*
Wararak Chalermputusak, *Sukhothai Thammathirat, Thailand*
Wasan Luangprapat, *Thammasat University, Thailand*
Wichit Srisa-An, *Suranaree University of Technology, Thailand*
Witsanuphong Suksakhon, *Rangsit University, Thailand*
Worachat Churdchomjan, *Rangsit University, Thailand*
Yunlin Yang, *Rangsit University, Thailand*



APPENDIX B

JOURNAL OF CONTEMPORARY SOCIAL SCIENCES AND HUMANITIES

(Formerly RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES)

NOTE FOR AUTHORS

1. Aims and Scope

Journal of Contemporary Social Sciences and Humanities (JCSH) aims to provide a high profile vehicle for publication of various new issues in different academic areas in Humanities and Social Sciences. *JCSH* invites scholars, researchers, professionals and academicians to publish their manuscripts in the journal. The scope of the Journal encompasses, the author(s) can submit their manuscript covering, but not limited to Interdisciplinary Studies in Humanities and Social Sciences, any of the following areas:

Social Science

Anthropology
Criminology & Criminal Justice
Economics
Political Science
Sociology

Humanity

History
Linguistics
Philosophy (inc. Arts & Design)

2. Submission Deadline

Submissions are to be permanently open. A manuscript submitted between July 1st and December 31st will be considered for publication in the January-June Issue of the subsequent year whereas a manuscript submitted between January 1st and June 30th will be considered for publication in the July-December Issue.

3. Categories of Articles

The *Journal* accepts the following types of articles:

1. **Research Articles:** A research article is a regular quantitative or qualitative article which aims to present new findings or interpretations.
2. **Review Articles:** A review article or survey articles, also called a literature review, is an article that survey of previously published research on a topic and summarizes the current state of understanding on a topic. It should give an overview of current thinking on the theme and, unlike an original research article, won't present new experimental results. By analyzing a large body of data from existing studies, some systematic reviews can come to new conclusions. Review articles can also provide recommendations for potential research areas to explore next. Moreover, a review article surveys and summarizes previously published studies, rather than reporting new facts or analysis.
3. **Innovations:** An innovation is an article that aims to present creative arts and designs, procedures or devices.

Research articles, review articles, and innovations should not exceed 15 pages of standard A4 paper using *JCSH* format. The manuscript template is available at <https://JCSH.rsu.ac.th>. All categories of articles must coincide with manuscript preparation instruction (see Manuscript Preparation Section).

4. Editorial Policies

JCSH accepts only the original work that has not been previously published, nor is it a dual submission. The submission also implies that the authors have already obtained all necessary permissions for the inclusion of copyrighted materials, such as figures and tables from other publications. Submitting a copied piece of writing as one's own original work is considered plagiarism. The *Journal* is published by Rangsit University Press, Thailand. Contributions are in English. Copyright is by the publisher and the authors.

Authorship: *JCSH* expects that all of the authors listed on a manuscript have contributed substantially to the submitted paper. By submission of the manuscript, cover letter, and Copyright Transfer Agreement (CTA), the corresponding author affirms that all named authors have agreed to be listed as authors of the paper. Furthermore, by their signatures on the CTA, all authors affirm that they have both read and approved the manuscript, and that they take full responsibility for the content of the article.

Review Process: *JCSH* assumes responsibility for insuring that submitted manuscripts receive expert and unbiased reviews. *JCSH* strives to complete a peer review of all submitted papers and the publication of accepted manuscripts in a timely manner and to keep the authors informed of any problems with their manuscript. All submitted manuscripts are initially evaluated by the Editor-in-Chief in consultation with members of the Editorial Board before being sent for double-blind review. *JCSH* is under no obligation to submit every manuscript to formal peer review. Manuscripts that are judged by the editors to be inferior or inappropriate for publication in the *Journal* may, at the discretion of the Editor-in-Chief, be rejected without formal written reviews by referees. *JCSH* attempts to obtain at least two written reviews for each manuscript that is entered into the peer review process, although the Editor-in-Chief has the discretion to make final decisions about the disposition of a manuscript with fewer than two reviews. The reviewers' evaluations will be used by the editors to decide whether the paper should be accepted, revised or rejected. A copy of the referees' comments will be sent to the corresponding authors whose paper needs revision. All reviewers serve anonymously and their identities are protected by the confidentiality policy of *JCSH*.

Confidentiality: As is customary for the peer review process, *JCSH* holds the identity of authors and the contents of all submitted manuscripts in confidence until such time as the papers are published. This confidentiality extends to the comments of editors and reviewers that have evaluated the paper; these comments and reviews are released only to the corresponding author. Co-authors may have access to these documents either by obtaining them directly from the corresponding author or by submitting to *JCSH* a letter of request that has been signed by the corresponding author. Similarly, *JCSH* expects that editors and reviewers will maintain strict confidentiality of the authors' identities and the contents of manuscripts that they examine during the review process, and furthermore, will never disclose the contents (either orally or in writing) of documents related to the peer review of a manuscript. A violation of this policy is considered a serious breach of trust.

Research Involving Animals or Humans: Authors must state in the manuscript that the work was approved by, at least, their institutional ethical review board for any research involving human and animal subjects. These approvals are required for publication in *JCSH*.

5. Manuscript Preparation

General Instruction: Submit your manuscript in both PDF and MS word formats. Manuscripts are acceptable in both US and UK English, but the use of either must be consistent throughout the manuscript. Please note that the editors reserve the right to adjust style to certain standards of uniformity.

Format: Unless specified, type text with 10-point Times New Roman font on 12-point line spacing, with a 1.25 inch left margin, 1 inch bottom and right margin, 2 inch top margin, 1.2 inch header, and 0.6 inch footer. Main text is set in single column. First lines of paragraphs are indented 0.5 inch. For hard copy, use standard A4 paper, one side only. Use ordinary upper- and lower-case letters throughout, except where italics are required. For titles, section headings and subheadings, tables, figure captions, and authors' names in the text and reference list: use ordinary upper- and lower-case letters throughout. Start headings at the left margin. If you wish, you may indicate ranking of complicated section headings and subheadings with numerals (1, 1.1, 1.1.1). Try not to exceed three ranks. All pages must be numbered in the top right-hand corner.

Title: Use 11-point bold font on 12-point line spacing. The length of the title of the article must not exceed 2 lines. A title should be concise and informative. The alignment of the title is centered.

Author Names: Use 10-point font on 11-point line spacing. Centered alignment and leave one line space below the title of the article. Begin with the first name of the author followed by the last name. For more than one author, separate each name by a comma (,), and identify each author's affiliation by superscript numbers at the end of the author's last name.

Author Affiliations: Use 9-point font on 10-point line spacing. Centered alignment and leave one line space below the author names. Include institutional and e-mail addresses for all authors. Place superscript numbers at the beginning of each affiliation accordingly.

Abstract: Use 10-point font on 11-point line spacing for heading and 9-point font on 11-point line spacing for abstract content. An abstract of up to 250 words must be included as and when appropriate. For research papers; the purpose and setting of the research, the principal findings and major conclusions, and the paper's contribution to knowledge should be briefly stated. For empirical papers the locations of the study should be clearly stated, as should the methods and nature of the sample, and a summary of the findings and conclusion. Please note that excessive statistical details should be avoided, abbreviations/acronyms used only if essential or firmly established.

Keywords: List up to 6 keywords and separate each keyword by a comma (,). The keywords should accurately reflect the content of the article. The keywords will be used for indexing purposes.

Main Text: Use 10-point font on 12-point line spacing. In the main body of the submitted manuscript the following order should be adhered to: introduction, methodology, results (if any), discussion (if any), conclusion, acknowledgements, and references. Please note that some article categories may not contain all components above. Tables or figures must be included in the text for the reviewing process. In addition, tables and figures must also be submitted individually in separate files. Refer in the text to each table or illustration included, and cite them in numerical order, checking before submission that all are cited and in correct sequence.

References in the Text: To insert a citation in the text use the author-year system, i.e., the author's last name and year of publication. Examples are as follows: "Since Johnson (2008) has shown that..." or "This is in agreement with results obtained later (Benjamin, 2010)". For 2-3 authors; all authors are to be listed, with "and" separating the last two authors, for more than three authors, list the first author followed by et al. The list of references should be arranged alphabetically by authors' names. All in-text citation must be appeared in the reference list. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are exactly the same in the text as in the reference list. Responsibility for the accuracy of bibliographic citations lies entirely with the author(s). Citation of a reference as "in press" implies that the item has been accepted for publication. Authors are responsible for the accuracy of the content of the references.

List of References: JCSH uses the American Psychological Association (APA) referencing style, details of which can be found at <http://www.apastyle.org/>. References should be listed at the end of article, arranged alphabetically according to the last names of the authors and then chronologically. The following are examples of the APA referencing style. All in-text citation must be appeared in the reference list and all publications in the reference list must correspond to the in-text citation. Please delete the listed publications which are not appeared in the context.

Abstracts

Author./ (Year of publication)./Title of Abstract (abstract)./Journal Title,/Volume(Issue),/Page number.

Example:

Clark, D. V., Hausen, P. H., & Mammen, M. P. (2002). Impact of dengue in Thailand at the family and population levels (abstract). *Am J Trop Med Hyg*, 67(2 Suppl), 239.

Books

Author./ (Year of publication)./ *Book Title*:/ *Capital letter also for subtitle*./ Edition (if any)./ Location./ Country :/ Publisher.

Example:

Cochrane, A. (2007). *Understanding urban policy: A critical approach*. Malden, MA: Blackwell Publishing.

Palmer, G. R., & Short, S. D. (2010). *Health care and public policy: An Australian analysis* (4th ed.). South Yarra, VIC: Palgrave Macmillan.

Bulliet, R. W., Crossley, P. K., Headrick, D. R., Hirsch, S. W., Johnson, L. L., & Northrup, D. (2011). *The earth and its peoples: A global history* (5th ed.). Boston, MA: Wadsworth.

Chapter in edited book

Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

Article or Chapter in an Edited Book

Author./ (Year of publication)./ Title of chapter./ In/ Editor/ (Ed.),/ *Book Title*/(pages of chapter)./ Location:/ Publisher.

Example:

O'Neil, J. M., & Egan, J. (1992). Men's and women's gender role journeys: A metaphor for healing, transition, and transformation. In B. R. Wainrib (Ed.), *Gender issues across the life cycle* (pp. 107-123). New York, NY: Springer.

Conference and Seminar Proceedings

To cite proceedings that are published regularly, use the same format as for a journal article. To cite proceedings that are published in book form, use the same format as for an article in a book.

Example:

Tester, J. W. (2008). The future of geothermal energy as a major global energy supplier. *Proceedings of the Sir Mark Oliphant International Frontiers of Science and Technology Australian Geothermal Energy Conference*, Canberra, Australia: Geoscience Australia. Retrieved from http://www.ga.gov.au/image_cache/GA11825.pdf

Dissertation or Thesis

Author./ (Year of publication)./ *Title of dissertation or thesis* /(Doctoral dissertation or Master's thesis)./ Awarding Institution.

Example:

Norasingha, A. (2009). *Expression and distribution of mucorinic receptors in hepatic composite of the cirrhotic rat* (Master's thesis). Rangsit University, Pathum Thani.

Editorials

Author./ (Year of publication)./ Title of Editorial (editorial)./ *Journal Title*,/ Volume(Issue),/ Page numbers.

Example:

Fisher, R. I. (2003). Immunotherapy in Non-Hodgkin's lymphoma: Treatment advances (editorial). *Semin Oncol*, 30(2Suppl 4), 1-2.

Journal Articles

Author./ (Year of publication)./ Article Title./ *Journal Title*,/ Volume(Issue),/ Page numbers.

Example:

Leelawat, S., Leelawat, K., Narong, S., & Matangkasombut, O. (2010). The dual effects of delta 9-tetrahydrocannabinol on cholangiocarcinoma cells: Anti-invasion activity at low concentration and apoptosis induction at high concentration. *Cancer Investigation*, 28(4), 357-363.

- Polk, A., Amsden, B., Scarrrt, D., Gonzal, A., Oknamefe, O., & Goosen, M. (1994). Oral delivery in aquaculture. *Aquacult. Eng*, 13, 311-323.
- Seals, D. R., & Tanaka, H. (2000). Manuscript peer review: A helpful checklist for students and novice referees. *Advances in Physiology Education*, 23(1), 52-58.
- Srichandum, S. & Rujiranyong, T. (2010). Production scheduling for dispatching ready mixed concrete trucks using bee colony optimization. *American J. of Engineering and Applied Sciences*, 3(1), 823-830.

Letters

Author./ (Year of publication)/ Title of Letter./ *Journal Title*./ Volume(Issue)/ Page number.

Example:

Enzensberger, W., & Fisher, P. A. (1996). Metronome in Parkinson's disease (letter). *Lancet*, 347, 1337.

Notes

Author./ (Year of publication)/ Title of Note./ *Journal Title*./ Volume(Issue)/ Page number.

Example:

Haier, R. J., Schroeder, D. H., Tang, C., Head, K., & Colom, R. (2010). Gray matter correlates of cognitive ability tests used for vocational guidance. *Biomed Central*, 3, 206.

Unpublished/In Press Articles

Author./ (In press Year)/ Article Title./ *Journal Title*./ (in press).

Example:

Veena, B. (2004). Economic pursuits and strategies of survival among Damor of Rajasthan. *J Hum Ecol.* (in press).

Internet periodicals

Author./ (Year of publication)/ Article Title./ *Journal Title*./ Volume(issue)/ page numbers./ Retrieved mm dd, year, from the full URL of the web page

Example:

Adams, P. J. (2000). Australian economic history. *Journal of Australian Economics*, 5(2), 117-132.
Retrieved June 12, 2001, from <http://jae.org/articles.html>

Internet non-periodicals

Author./ (Year of publication)/ Article Title./ Retrieved mm dd, year, from the full URL of the web page

Example:

Lemire, D. (n.d.). *Write good papers*. Retrieved July 1, 2010, from <http://www.daniel-lemire.com/blog/rules-to-write-a-good-research-paper>

Newspaper retrieved from a database

Article – with an author

Author./ (mm dd, Year)/ Article Title./ *News agency*./ Retrieved from the full URL of the web page

Example:

Darby, A. (August 20, 2002). Rarest tiger skin a rugged survivor. *Sydney Morning Herald*. Retrieved from <http://www.smh.com.au>

Article – without an author

Article Title./ (mm dd, Year)/ *News agency*./ Retrieved from the full URL of the web page

Example:

Rarest tiger skin a rugged survivor. (August 20, 2002). *Sydney Morning Herald*. Retrieved from <http://www.smh.com.au>

Illustrations and Figures: All illustrations should be provided in a file format and resolution suitable for reproduction, e.g., EPS, JPEG or TIFF formats, without retouching. Photographs, charts and diagrams should be referred to as "Figure(s)" and should be numbered consecutively in the order to which they are referred. In addition to placing figures with figure captions into the main text, **submit each figure individually as a separate file.**

Line Drawings: All lettering, graph lines and points on graphs should be sufficiently large and bold to permit reproduction when the diagram has been reduced to a size suitable for inclusion in the journal. Do not use any type of shading on computer-generated illustrations.

Figure Captions: Type figure captions using 9-point font on 10-point line spacing. Insert figures with figure captions into the main text (see *Illustrations and figures* Section). Type as follows: Figure 1 Caption

Color: Where printed color figures are required, the author will be charged at the current color printing costs. All color illustrations will appear in color online, at no cost. Please note that because of technical complications which can arise when converting color figures to grayscale, for the printed version should authors not opt for color in print, please submit in addition usable black and white versions of all the color illustrations.

Tables: Tables must be cell-based without vertical lines. They should be produced in a spreadsheet program such as Microsoft Excel or in Microsoft Word. Type all text in tables using 9-point font or less. Type the caption above the table to the same width as the table. Insert tables and table captions into the main text. Tables should be numbered consecutively. Footnotes to tables should be typed below the table and should be referred to by superscript numbers. Submit separate files of tables in their original file format and not as graphic files in addition to incorporating in the main text. Tables should not duplicate results presented elsewhere in the manuscript (e.g., in graphs).

Proofs: Proofs will be sent to the corresponding author by PDF wherever possible and should be returned within 1 week of receipt, preferably by e-mail. Corrections must be restricted to typesetting errors. It is important to ensure that all of your corrections are returned to us in one all-inclusive e-mail or fax. Proofreading is solely the responsibility of the author(s). Note that *JCSH* may proceed with the publication of your article if no response is received in time.

Reprints: Authors will receive free copy of the journal in which their work appears.

English Language Editing before Submission: Authors for whom English is a second language may choose to have their manuscript professionally edited before submission.

6. Manuscript Submission

Manuscripts should be submitted electronically to the Editor-in-Chief as an attachment via the *JCSH* submission system, in word processing format. The *JCSH* submission form must be completed. Included in the submission form are (a) the title and authors, (b) complete contact information for the corresponding author (mailing address, e-mail address, and telephone and fax numbers), (c) confirmation of the originality of the reported work, (d) approval of the submitted version of the manuscript by all authors, and (e) the authors' consent for publication in *JCSH*, if accepted. The submission form is available at <https://JCSH.rsu.ac.th>.

7. Manuscript Revision and Re-submission

There are four editorial decisions: Accept, Accept with Minor Revision, Resubmit with Major Revision, and Reject. A Reject decision is definitive and authors may not submit a new version of the manuscript to the *JCSH*. A Resubmit with Major Revision requires a major re-write of the manuscript and/or inclusion of significant new data, and thus the creation of a new manuscript, which will thus be assigned a new submission date. An Accept with Minor Revision decision implies that the paper can, in principle, attain the required

standard of the *Journal* without major change. Editors may or may not have a revised manuscript reviewed (generally, by the original reviewers), in order to ascertain whether changes to the original manuscript adequately responded to the criticisms. If changes made do not result in a paper of the required standard, the revised manuscript will be definitively rejected. If a revised manuscript of "Accept with Minor Revision" is accepted, the original submission date will be retained.

8. Copyright Agreement

Once a manuscript is accepted for publication, authors will be required to sign a Copyright Transfer Agreement form (CTA). CTA is available at <https://JCSH.rsu.ac.th>. Signature of the CTA is a condition of publication and papers will not be passed for production unless a signed form has been received. Please note that signature of the Copyright Transfer Agreement does not affect ownership of copyright in the material. Please submit the completed form with the final version of the manuscript back to the *JCSH* submission system.

9. Further Reading

The following resources will provide valuable guidelines for the preparation of manuscripts.

Anonymous. (n.d.). How to write abstract. Retrieved January 17, 2011, from

http://www.journal.au.edu/au techno/2006/jan06/vol9num3_howto.pdf

Anonymous. (n.d.). How to write an abstract: Links and tips. Retrieved January 17, 2011, from

<http://research.berkeley.edu/ucday/abstract.html>

Koopman, P. (n.d.). How to write an abstract. Retrieved January 17, 2011, from

<http://www.ece.cmu.edu/~koopman/essays/abstract.html>

Lemire, D. (n.d.). Write good papers. Retrieved January 17, 2011, from <http://lemire.me/blog/rules-to-write-a-good-research-paper/>

Plonsky, M. (n.d.). Psychology with style: A hypertext writing guide. Retrieved January 17, 2011, from <http://www.uwsp.edu/psych/apa4b.htm>

Seals, D. R., & Tanaka, H. (2000). Manuscript peer review: A helpful checklist for students and novice referees. *Advances in Physiology Education*, 23(1), 52-58.

Jones, A., & Pham, H. (n.d.). Basic Referencing using the APA System, Teaching and learning unit, Faculty of Economics and Commerce, The University of Melbourne. Retrieved February 15, 2011, from <http://www.scribd.com/doc/57603066/A-Pa-Style>



APPENDIX C

JOURNAL OF CONTEMPORARY SOCIAL SCIENCES AND HUMANITIES

Research Article Single-Column Template

Please note that the paper size is standard A4 size (approx 8.27 x 11.69 in)

**Type your title here using 11-point Times New Roman bold font on 12-point line spacing.
The length of the title of the article must not exceed 2 lines.**

Author Names (Use 10-point Times New Roman font on 11-point line spacing.

Begin with the first name of the author followed by the last name. For more than one author, type 'and' before the last author's name. For more than two authors, also separate each name by a comma (,).

Identify each author's affiliation by superscript numbers at the end of the author's last name.)

Author Affiliations (Use 9-point Times New Roman font on 10-point line spacing.

Include institutional and e-mail addresses for all authors. Place superscript number in front of author's affiliation corresponding to author's name.)

Received date month year / Revised date month year / Accepted date month year / Publish Online date month year

Abstract (10-point bold font on 11-point line spacing)

For abstract content, use 9-point Times New Roman font on 11-point line spacing. First line is indented 0.5 inch. An abstract of up to 250 words must be included. Include your major findings in a useful and concise manner. Include a problem statement, objectives, brief methods, results, and the significance of your findings.

Keywords: List up to 6 keywords and separate each keyword by a comma (,). The keywords should accurately reflect the content of the article. The keywords will be used for indexing purposes.

1. Introduction

The actual manuscript will be published in a single-column style in the JCSH journal. This single column template is adopted as a user friendly format. Thus, with this template, the main text is set in a single column. Type text with 10 point Times New Roman font on 12 point line spacing, with a 1.25 inch left margin, 1 inch bottom and right margin, 2 inch top margin, 1.2 inch header, and 0.6 inch footer. First lines of paragraphs are indented 0.5 inch. Please note that the paper size is standard A4 size (approx 8.27 x 11.69 in). In MS Word, select "Page Layout" from the menu bar, and under Paper Size select A4 Size.

The introduction should put the focus of the manuscript into a broader context. As you compose the introduction, think of readers who are not experts in this field. Include a brief review of the key literature. If there are relevant controversies or disagreements in the field, they should be mentioned so that a non-expert reader can find out about these issues further. The introduction should conclude with a brief statement of the overall aim of the experiments.

To insert a citation in the text use the author-year system, i.e., the author's last name and year of publication. Examples are as follows: "Since Johnson (2008) has shown that..." or "This is in agreement with results obtained later (Benjamin, 2010)". For 2-3 authors; all authors are to be listed, with "and" separating the last two authors, for more than three authors, list the first author followed by et al. The list of references should be arranged alphabetically by authors' names. All publications cited in the text should be presented in a list of references following the text of the manuscript. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are exactly the same in the text as in the reference list. Responsibility for the accuracy of bibliographic citations lies entirely with the author(s). Citation of a reference as "in press" implies that the item has been accepted for publication. Authors are responsible for the accuracy of the content of the references.

2. Objectives

The objectives of the study should be specified explicitly.

3. Materials and Methods

This section should provide enough detail to allow full replication of the study by suitably skilled investigators. Protocols for new methods should be included, but well-established protocols may simply be referenced.

4. Results

The results section should provide details of all of the experiments that are required to support the conclusions of the paper. There is no specific word limit for this section. The section may be divided into subsections, each with a concise subheading. The results section should be written in past tense.

Tables must be cell-based without vertical lines. They should be produced in a spreadsheet program such as Microsoft Excel or in Microsoft Word. Type all text in tables using 9-point font on 10-points line spacing. Type the caption above the table to the same width as the table.

Tables should be numbered consecutively. Footnotes to tables should be typed below the table and should be referred to by superscript numbers. Submit separate files of tables in their original file format and not as graphic files in addition to incorporating in the main text. Tables should not duplicate results presented elsewhere in the manuscript (e.g., in graphs).

Table 1 Table caption

C1	C2	C3	C4
R1			
R2			
R3			
R4			
R5			
R6			

If figures are inserted into the main text, type figure captions below the figure. In addition, submit each figure individually as a separate file. Figures should be provided in a file format and resolution suitable for reproduction, e.g., EPS, JPEG or TIFF formats, without retouching. Photographs, charts and diagrams should be referred to as "Figure(s)" and should be numbered consecutively in the order to which they are referred

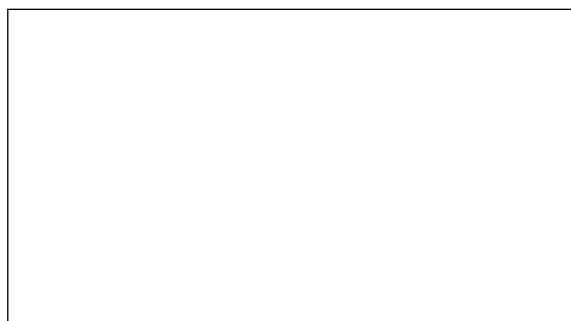
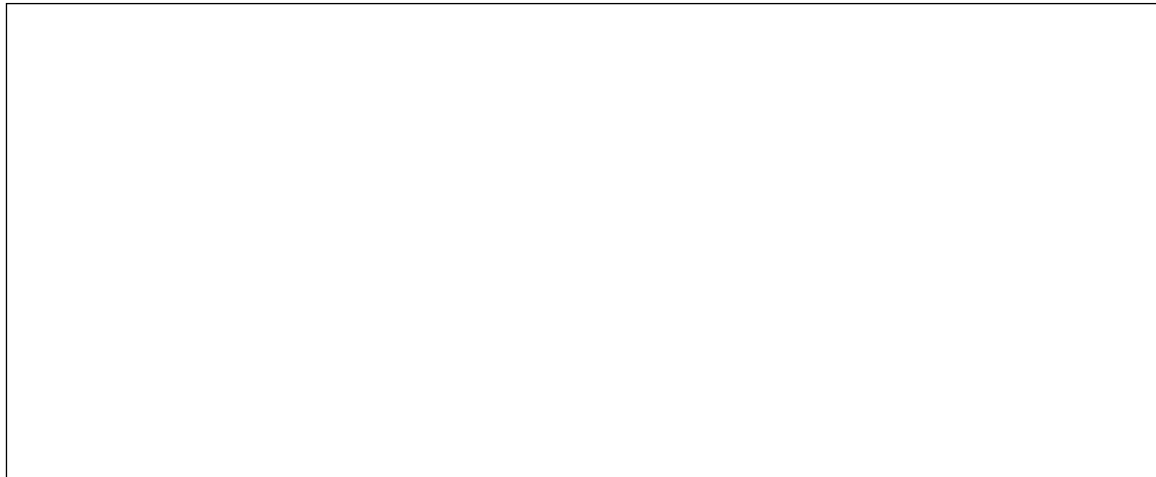


Figure 1 Figure caption

Table 2 Table caption

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**Figure 2** Figure caption

5. Discussion

The discussion should spell out the major conclusions of the work along with some explanation or speculation on the significance of these conclusions. How do the conclusions affect the existing assumptions and models in the field? How can future research build on these observations? What are the key experiments that must be done? The discussion should be concise and tightly argued. Conclusions firmly established by the presented data, hypotheses supported by the presented data, and speculations suggested by the presented data should be clearly identified as such. The results and discussion may be combined into one section, if desired.

6. Conclusion

The Conclusion section restates the major findings and suggests further research.

7. Acknowledgements

People who contributed to the work but do not fit criteria for authorship should be listed in the Acknowledgments, along with their contributions. It is the authors' responsibility to ensure that anyone named in the acknowledgments agrees to being so named. The funding sources that have supported the work should be included in the acknowledgments.

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APPENDIX D

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