Community and Social Development Journal

Community and Social Development Journal : CSDJ

Formerly known as Rajabhat Chiang Mai Research Journal

Vol 26 No 1 January – April 2025

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The Impact of Consumer Confusion on Chinese Consumers' Delayed Choices in Online Shopping: The Mediating Role of Negative Emotions

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Abstract

This study investigates the impact of consumer confusion factors, including overload confusion, ambiguity confusion, and conflict confusion, on consumers' delayed choice within online shopping environments. Utilizing a convenience sampling method, data were gathered via online surveys from 451 Chinese participants who had engaged in online shopping and experienced decision delays during the past year. The analysis, conducted through structural equation modeling (SEM), aims to test hypotheses and develop a comprehensive model that captures complex relationships among variables. The result reveals that the consumer confusion factors including overload confusion ($\beta=0.349$), ambiguity confusion ($\beta=0.333$), and conflict confusion ($\beta=0.248$) significantly contribute to the consumers' delayed choice. In addition, these factors also influence the generation of negative emotions during the online shopping search process (overload confusion: $\beta=0.334$; ambiguity confusion: $\beta=0.308$; conflict confusion: $\beta=0.276$). Furthermore, it was found that negative emotions ($\beta=0.295$) have a direct positive effect on the delay in purchasing decisions. Additionally, negative emotions serve as a mediating factor between consumer confusion and consumers' delayed choice (delayed choice: $\beta=0.245$; ambiguity confusion: $\beta=0.192$; and conflict confusion: $\beta=0.188$). This research offers valuable insights for the management of online shopping platforms and vendors, suggesting that addressing conflicting messages and reducing consumer confusion are critical strategies for achieving success in the competitive online retail market.

Keywords: Chinses consumer, Consumer confusion, Consumer delayed choice, Negative emotion, Online shopping

Introduction

As of June 2023, China's online shopping population has surged to 884 million, as reported by Statista in 2024. According to Custom Market Insights (CMI), the China online shopping market was estimated at USD 1400 billion in 2022 and is anticipated to reach around USD 2300 billion by 2030, growing at a CAGR of roughly 9% between 2023 and 2030. This rapid growth is driven by the increasing adoption of e‒commerce platforms, the expanding middle‒class population, and the rising penetration of mobile internet (CMI, 2023). The progressive integration of e‒commerce across urban and rural areas, coupled with the ramifications of the COVID-19 pandemic, has positioned online shopping as a pivotal element of consumer spending in China. In this digital ecosystem, the consumer decision‒making process is increasingly centered around the analysis of information, with search outcomes becoming a crucial determinant of purchasing decisions. However, the exponential growth of e‒commerce platforms has led to an information overload that does not necessarily enhance consumer satisfaction. Currently, most popular e‒commerce platforms in China where many Chinese customers shop are Taobao, Tmall, JD.com, Pinduoduo and Little Red Book, etc. These platforms cover a wide array of consumer needs and preferences, making them highly popular among Chinese shoppers. The expansion of platform vendors, product offerings, and customer reviews has escalated the conflict between quantity and quality, complicating consumers' ability to evaluate information and raising the costs associated with information search. This abundance of choices does not guarantee increased consumer satisfaction. Theories of cognitive load and cognitive dissonance highlight the limitations of an individual's capacity to process information. When short-term memory is overwhelmed or when conflicting information triggers cognitive dissonance, individuals strive to mitigate this discomfort. The mounting volume of information, along with its ambiguous and contradictory nature, may induce consumer confusion, adversely impacting the online shopping experience and prompting consumers to defer decisions to evade the discomfort associated with cognitive overload and dissonance.

The current scholarly interest centers on elucidating the reasons behind consumers' tendencies to postpone their purchasing decisions within the realm of online shopping. Prior investigations into the behavior of choice deferral have categorized the influencing factors into three primary dimensions: attributes of the decision task (for instance, the size of the selection set, as discussed by Liu et al., 2017), personal attributes of the decision‒maker (such as the extent of decision‒making authority, according to Li & Jiang, 2019), and the environmental aspects of decision‒making (including time constraints, as explored by Lu & Wang, 2018). Particularly regarding environmental factors, some researchers posit that consumer confusion— exacerbated by the rapid expansion of digital platforms providing an overwhelming variety of information—serves as a pivotal driver behind the delay in decision-making. In contemporary shopping contexts, the phenomenon of consumer confusion is intensifying, marked by an unprecedented influx of decision‒relevant information (as highlighted in studies by Friedman, 1966; Mitchell & Papavassiliou, 1999; Schweizer et al., 2006; Walsh et al., 2007). Yet, the exploration of the nexus between consumer confusion and purchasing decision dynamics (such as the postponement or abandonment of purchases) has been scarcely addressed by Chinese scholars. Moreover, the intricate internal mechanisms that mediate the impact of consumer confusion on consumers' propensity to defer decisions remain largely unexplored. Recognizing consumer confusion as a precursor to delayed decision-making, this research endeavors to dissect the mediating role of negative emotions, thereby shedding light on the nuanced relationship between consumer confusion and procrastination in purchasing behaviors in the digital marketplace.

There are several reasons for choosing Chinese consumers as the subject of this study. First, China boasts one of the world's fastest-growing e-commerce markets. The rapid expansion presents a unique opportunity to study consumer behavior in a dynamic and evolving environment. Moreover, Chinese consumers represent a broad and diverse demographic, including different age groups, income levels, and regional backgrounds. This diversity provides a rich dataset for understanding how consumer confusion affects various segments of the population. Furthermore, the Chinese e-commerce market is characterized by intense competition and a vast array of products and platforms. This complexity can lead to higher levels of consumer confusion, making it an ideal context for studying its effects on purchasing decisions. Therefore, by focusing on Chinese consumers, the study aims to uncover nuanced insights into how consumer confusion influences online shopping behavior in a major and rapidly evolving market. It seeks to augment the existing corpus of knowledge on consumer behavior in e-commerce, offering valuable insights for marketers and online retailers to alleviate the implications of consumer confusion on purchasing decisions.

There are four objectives in the study, first, to test how consumer confusion (overloaded confusion, ambiguity confusion and conflict confusion) influence consumers' delayed choice; second, to test how consumer confusion (overloaded confusion, ambiguity confusion and conflict confusion) influence consumers' negative emotions; third, to test how negative emotions influence consumers' delayed choice; and lastly, to test whether negative emotions play a mediating role in the effect of consumer confusion on consumers' delayed choice.

Consequently, this paper positions consumer confusion as the independent variable and negative emotion as the mediating variable to scrutinize the effect of consumer confusion on the postponement of purchase decisions, aspiring to unveil the psychological dynamics underlying such consumer behavior. This endeavor seeks to furnish actionable recommendations for businesses and digital platforms, aimed at enhancing consumer satisfaction and fostering mutual success.

Cognitive Load Theory

In 1988, the cognitive psychologist John Sweller introduced the Cognitive Load Theory, extending the concept of mental workload, initially examined within educational psychology, to the broader field of cognitive psychology. Sweller posited that human cognition fundamentally entails the consumption of resources. During the processes of acquiring knowledge and solving problems, individuals engage in numerous cognitive operations, depleting their cognitive resources and thus generating cognitive load. According to Sweller (1988), this cognitive architecture comprises both a limited capacity working memory and an expansive long-term memory. Further research indicated that the burden on working memory stems not only from the inherent complexity of the material being learned but also from the influence of external instructional methodologies. Consequently, cognitive load has been categorized into three distinct types: intrinsic, extrinsic, and germane cognitive load (Sweller, 2010). Intrinsic cognitive load is related to the essential aspects of the subject matter that requires understanding. It is determined by the complexity of the content and the learner's prior knowledge and cannot be altered by instructional design. Extrinsic cognitive load, on the other hand, is associated with the manner in which information is presented and the instructional methods used, which can unnecessarily burden working memory. Germane cognitive load, previously referred to as associative cognitive load, facilitates the processing of intrinsic cognitive load by utilizing working memory resources to integrate new information with existing knowledge. This delineation suggests that an excessive extrinsic load can detract from the resources available for processing intrinsic load, thereby hindering effective learning. In the context of online shopping, consumers often face a substantial extrinsic cognitive load as they navigate through product pages, reviews, and other information. This not only consumes

significant working memory resources but also detracts from their ability to focus on the core aspects of their needs, potentially leading to postponed decision- making or even the abandonment of the purchase altogether.

The Theory of Experiential Marketing

The concept of the "experience economy" was initially introduced by Pine and Gilmore in the late 1980s, and they further elaborated on this emerging economic paradigm in their book titled *The Experience Economy*, published in 1999. This new economy is similar to the service economy but it focuses on the consumer's emotions rather than the product itself. Experience marketing has become increasingly important in the context of the experience economy, which focuses on providing a positive experience for consumers. Hauser (2011) defines experiential marketing as the actual customer experiences with a brand, product, or service that have the potential to drive sales and enhance brand image and awareness. Similarly, You- Ming (2010) emphasizes that experiential marketing is a face-to-face communication approach that aims to evoke customers' physical and emotional sensations. It involves creating experiences that are relevant, interactive, and immersive, allowing customers to feel and engage with a brand on a deeper level. In addition, Tynan and McKechnie (2009) assert that experience marketing can deliver sensory, emotional, cognitive, behavioral and relational value to customers, to which social and informational based value can be added. With changing consumer preferences, the satisfaction of the consumption process is no longer based solely on the functional attributes of the product, but also on intangible factors such as culture and values. The keys to experiential marketing are understanding what consumers desire and providing relevant products and services that foster positive consumer emotions (Schmitt, 2010). Therefore, this study applies the theory of experiential marketing to focus on consumer emotions across various dimensions. This includes capturing consumers' sensory experiences, such as visual, olfactory, and gustatory perceptions of products, as well as addressing the cognitive aspect of consumer identity, which involves establishing a fit between consumers and products during the consumption process, thereby influencing and shaping consumer behavior.

Cognitive Dissonance Theory

The proliferation of information in the digital age not only leads to information overload but also precipitates conflicts between differing viewpoints, thereby exerting an unseen pressure on consumers. This conflict of perspectives acts as a barrier to decision- making, a phenomenon well-explained by Cognitive Dissonance Theory. Developed by American social psychologist Leon Festinger in 1957, Cognitive Dissonance Theory explores the discomfort individuals experience when they hold two or more conflicting cognitions, or when their actions contradict their beliefs or attitudes. According to Festinger, human cognitions can exhibit three types of relationships: consonance, dissonance, and irrelevance, with consonance and dissonance being the primary focus due to their significant impact on psychological equilibrium (Morvan & O'Connor, 2017).

The theory posits that individuals naturally prefer their beliefs, attitudes, and behaviors to align harmoniously. However, inconsistencies among these elements frequently occur, leading to cognitive dissonance. This dissonance can arise from new situations or information that contradicts existing beliefs, or from inherent contradictions in an individual's daily experiences (Festinger, 1957) . The presence of cognitive dissonance is inherently uncomfortable, prompting efforts to alleviate this discomfort, a concept supported by Croyle & Cooper (1983) who highlighted the negative emotional responses and strong motivational drive to resolve dissonance.

Cognitive dissonance is prevalent in various scenarios, including decision-making processes and post-purchase reflections, making it a significant area of study within marketing. In the context of online shopping, the diversity of information, including product descriptions, evaluations, and conflicting viewpoints, can lead to consumer confusion. This confusion hampers the ability to form clear judgments, thereby inducing cognitive dissonance. As online shopping continues to evolve, understanding the triggers and implications of cognitive dissonance in this realm becomes crucial for both consumers navigating the digital marketplace and marketers aiming to create more cohesive and satisfying online shopping experiences.

Consumer Confusion and Consumer Delayed Choice

The process of information search plays a crucial role in consumer purchasing decisions. It is widely recognized among scholars that information can lead to various forms of consumer confusion, including similarity confusion, fuzzy confusion, and overload confusion (Yu et al., 2019). However, the impact of product similarity confusion on consumers' decision to delay purchases may not always be significant due to personal experiences and other factors (Sun et al., 2019). In recent times, some researchers have pointed out the presence of contradictions and conflicts in online shopping information, such as discrepancies in online reviews and offers across different channels (Wang et al., 2020), which can induce consumer confusion and subsequently affect purchasing behavior, sometimes leading to deferred decision-making.

This study identifies overload confusion, ambiguity confusion, and conflict confusion as three distinct dimensions of consumer confusion. Overload confusion arises from an information-rich environment that overwhelms consumers, often exacerbated by the sheer volume of information and product choices presented by an increasing number of merchants on online platforms. This information overload can impose a cognitive burden on consumers, making decision-making more challenging and potentially leading to postponement or avoidance of purchases (Kim, & Lee, 2019).

Ambiguity confusion relates to a consumer's capacity to deal with unclear, misleading, complex, or ambiguous product-related information or advertisements (Walsh et al., 2007; Wang, & Shukla, 2013). Such ambiguity may compel consumers to reassess their perceptions or assumptions about a product or purchasing scenario, inducing cognitive dissonance, heightening perceived risk, and causing confusion that delays decision-making (Kim, & Lee, 2019).

Conflict confusion stems from the discomfort experienced due to contradictory information from various sources (Leek, & Kun, 2006). Research indicates that conflicting information, especially from online reviews, prompts consumers to seek additional data to aid in their decision-making process and mitigate the discomfort associated with cognitive dissonance. In such scenarios, consumers may doubt the accuracy of initial reviews, leading to postponed decisions (Wang, et al., 2020).

In summary, the influx of information from platforms, merchants, and products leads to overload confusion, fuzzy confusion, and conflict confusion among consumers during the online purchasing search. These types of confusion, as integral aspects of the decision-making process, significantly influence online purchasing behavior, where the negative stimuli associated with these confusions can cause consumers to delay their decisions. Therefore, this paper proposes the following hypotheses:

H1: Consumer Confusion (Overloaded confusion, Ambiguity confusion, Conflict confusion) positively influence consumers' delayed choice.

Consumer Confusion and Negative Emotions

Emotion represents a fluctuating subjective psychological state that varies according to time, location, and situational context. Initially, the surge in digital information surpasses consumers' cognitive capacities, leading to stress and negative emotional responses when the volume of information exceeds an individual's ability to effectively manage it (Ragu-Nathan et al., 2008). In the context of online shopping, the overwhelming influx of information facilitated by the internet and big data technologies results in overload confusion, necessitating continuous processing of diverse information. This constant demand on cognitive resources can trigger a range of negative emotions, including nervousness, irritability, unease, and fear.

Furthermore, the ambiguity and confusion stemming from merchants' information can induce cognitive dissonance in consumers, eliciting negative emotions during the online purchasing process (Mishra et al., 2021). The lack of transparency in the safety information regarding consumer food purchases, coupled with the presence of adulterated, fraudulent, and misleading information, heightens the uncertainty of consumer choices. This ambiguity in product information can amplify consumer confusion, leading to the emergence of negative emotions such as annoyance and anxiety (Jin et la., 2020).

Lastly, conflict confusion, arising from the receipt of conflicting information, also significantly impacts consumers' emotional states. Conflicting online review information and varying price data from different merchants and channels can lead to emotional turmoil, especially at the point of making a purchase decision, such as during the checkout process in a shopping cart (Wang et al., 2023).

In summary, the stimuli of information overload, ambiguity, and conflict are likely to provoke negative emotions such as irritation and anxiety during online shopping experiences. The intensity of these negative emotions correlates with the strength of the stimuli encountered; hence, this paper proposes the following hypotheses:

H2: Consumer Confusion (Overloaded confusion, Ambiguity confusion, Conflict confusion) positively influence negative emotions.

Negative Emotions and Consumer Delayed Choice

Emotions play a pivotal role in shaping human behavior, exerting a substantial influence on the actions of individuals. Within the spectrum of human emotions, both positive and negative feelings coexist, each influencing behavior in distinct ways. In the realm of consumer behavior research, Pappas et al. (2018) discovered that an uptick in negative emotions significantly dampens consumers' purchasing intentions, especially when positive emotions fail to reach a high intensity (Pappas et al., 2018). This finding underscores the potent impact of negative emotions on the decision-making process in shopping contexts. Kim & Lee (2019) further elucidated this phenomenon in their examination of online shopping behaviors, noting that consumers often navigate through a plethora of merchant and product information to make a purchase decision. The resultant confusion from such information stimuli can foster negative emotions, leading to adverse purchasing behaviors, including postponed decision-making. Similarly et al. (2021) investigated the behavior of shopping cart abandonment and observed that consumers' efforts to dismiss incongruent information not only fail to alleviate but sometimes even exacerbate negative emotions such as anxiety. This emotional response can prompt consumers to defer their purchasing decisions. The tendency to delay decision-making escalates in direct proportion to the intensity of negative emotions experienced. These insights into the interplay between emotions and consumer behavior provide a foundation for the following hypotheses:

H3: Negative emotions generated in the context of online shopping search positively influence consumers' delayed choice.

Combined with the above analysis, emotion is also often used as a mediating variable to play a mediating role in the study of consumer purchase behavior. Based on this, the following hypotheses are proposed:

H4: Negative emotions play a mediating role in the effect of consumer confusion (Overloaded confusion, Ambiguity confusion, Conflict confusion) on consumers' elayed choice.
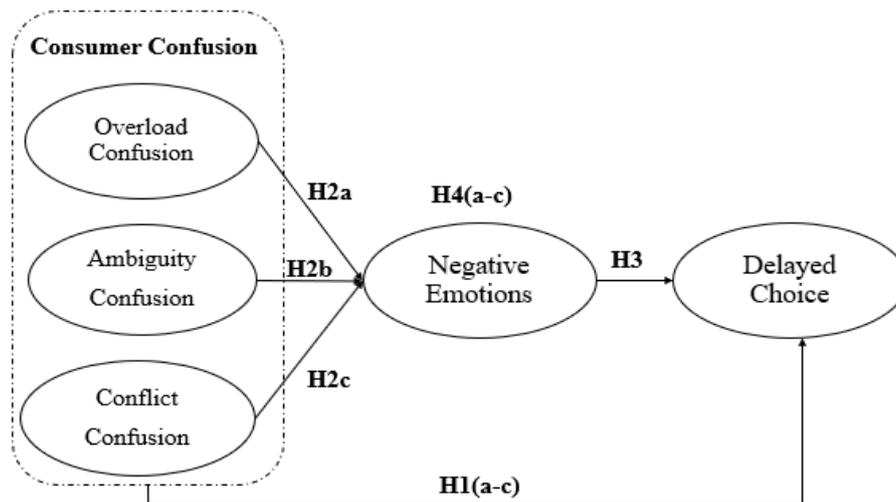
Figure 1 Conceptual Framework (Researcher, 2024)

Methodology

Participants and Procedure

This study employs a quantitative research design, utilizing an online questionnaire to collect data from Chinese users who have both engaged in online purchasing and experienced delays in making decisions on an online shopping platform within the past year. Given the challenge of accurately determining the actual size of the target population, this research will apply Cochran's (1977) formula to estimate the required sample size for the quantitative analysis. Aiming for a confidence level of 95%, the calculated sample size was determined to be 385. The survey garnered 473 responses. However, after excluding invalid responses (those that provided uniform ratings across all items), a total of 451 valid samples were secured for data analysis purposes.

Measurement

The questionnaire consisted of 3 main sections. the first of which consisted of a screen question designed to ensure that respondents had experienced delays in making decisions on an online shopping platform in past 1 year. The second part solicited demographic data from the participants, encompassing variables such as gender, age, educational background, length of experience with online shopping, and their preferred online shopping platform. The subsequent section was dedicated to assessing the five constructs outlined in the conceptual framework of this study. To construct measurement, items that had been pretested and validated in prior studies were incorporated, ensuring the robustness and relevance of the questionnaire. The development of the questionnaire adhered to the multiple-item method, with each question being rated on a five-point Likert scale that ranged from "1=strongly disagree" to "5=strongly agree". To provide clarity on the sourcing of these measures, Table 1 delineates the adaptation

of measurements from various scholars, showcasing the interdisciplinary effort in crafting a comprehensive tool for data collection.

Table 1 Source of Measurement Item in Questionnaire

Variable	Measurement Items	Source
Overload confusion (OC)	I do not always know exactly which product meet my needs best. There are so many brands to choose from that I sometimes feel confused. With so many stores, it's sometimes hard to decide where to buy.	Walsh, et al. (2007)
Ambiguity Confusion (AC)	The information I get from advertising often is so vague that it is hard to know what the product can actually perform. When purchasing a product, I need the help of customer service to understand the differences between the products. When purchasing a product, I feel uncertain about which product features that is particularly important for me.	Walsh, et al. (2007)
Conflict Confusion (CC)	Online shops provide inconsistent information on different platforms. There is conflicting information in the descriptions of the brand in the reviews (e.g. big/small color difference; good/bad fit, etc.). There are inconsistencies between the reviews in the shopping platform and the opinions of purchases recommended by the Q&A.	Walsh, et al. (2007)
Negative Emotions (NE)	This kind of shopping experience makes me tired. I am disappointed with this shopping experience. This shopping experience irritates me. This kind of shopping experience wears me out.	Babin & Attaway (2000)
Delayed Choice (DC)	Sometimes it is difficult to for me to make buying choices. Sometimes I choose to postpone my purchases. Sometimes there are so many choices in online stores that it takes me longer to make a choice.	Walsh, et al. (2007)

Data Analysis Methods

The data analysis was performed using Structural Equation Modeling (SEM) via AMOS 28.0 software, selected for its proficiency in evaluating the impacts of numerous variables within a multifaceted model concurrently (Hair et al., 2013). The utilization of SEM, which employs multivariate regression analysis throughout the model, is deemed particularly effective for the investigation of complex, layered conceptual frameworks. This methodological choice is due to SEM's ability to intricately map and accurately represent the interrelations and interactions among variables (Urbach & Ahlemann, 2010). Such a comprehensive analytical approach facilitates a thorough investigation of the proposed hypotheses, thereby elucidating the intricate dynamics inherent in the study's conceptual framework.

Results

Descriptive Statistics

Among the 451 valid responses, 66.2% are female, and 73.5% are aged 18-40. Most respondents (59.8%) work in private enterprises, with over 60% earning above 4,000 yuan. A significant 82.1% hold at least a bachelor's degree. All participants have experienced delayed online purchasing decisions, enhancing the questionnaire's reliability and relevance to studying online shopping behaviors.

Measurement Model

The analysis demonstrated high reliability for the survey instrument, with each construct's Cronbach's α exceeding the 0.7 threshold, indicative of strong internal consistency (Nunnally, 1978). Additionally, factor loadings for all constructs surpassed 0.5, confirming item reliability (Hair et al., 1995). Construct reliability was further established through composite reliabilities (CR) significantly above 0.7, and average variance extracted (AVE) from each construct was over 0.5, evidencing convergent validity (Fornell & Larcker, 1981). These results are summarized in Table 2, showing that Cronbach's α, CR, and AVE for each construct meet the established criteria, ensuring the survey's reliability and validity. The assessment of discriminant validity, following Fornell & Larcker's (1981) guidelines, revealed that the square root of AVE for each variable exceeded its correlation coefficients with other variables, affirming sufficient discriminant validity (Table 3).

Table 2 Results of Validity and Reliability Analysis

Construct	Indicators	Factor Loadings	CR	AVE	Cronbach's Alpha
Overload confusion (OC)	OC1	0.850	0.890	0.730	0.889
	OC2	0.864			
	OC3	0.849			
Ambiguity Confusion (AC)	AC1	0.812	0.845	0.646	0.844
	AC2	0.835			
	AC3	0.762			
Conflict Confusion (CC)	CC1	0.921	0.895	0.741	0.894
	CC2	0.751			
	CC3	0.901			
Negative Emotions (NE)	NE1	0.876	0.923	0.751	0.922
	NE2	0.863			
	NE3	0.838			
	NE4	0.888			
Delayed Choice (DC)	DC1	0.876	0.896	0.743	0.896
	DC2	0.850			
	DC3	0.859			

Table 3 Discriminant Validity

	(1)	(2)	(3)	(4)	(5)
(1) OC	**0.854**				
(2) AC	0.312	**0.804**			
(3) CC	0.369	0.388	**0.861**		
(4) NE	0.428	0.474	0.477	**0.867**	
(5) DC	0.369	0.337	0.399	0.439	**0.862**

Structural Model

Utilizing AMOS 28.0 software for structural equation modeling (SEM) based on the proposed conceptual model, the model's fit was initially evaluated using six key indices. The outcomes, presented in Table 4, demonstrate that all indices meet their respective threshold values, indicating a good fit for the model.

Table 4 Fit Indices of Measurement and structural models

Fit indices	χ^2/df	GFI	AGFI	IFI	TFI	CFI	RMSEA
Recommended	<3	>0.9	>0.8	>0.9	>0.9	>0.9	<0.05
Structural Model	2.811	0.903	0.878	0.952	0.945	0.952	0.046

Hypothesis Testing

The testing of hypotheses yielded significant results, as detailed in Table 5. Overload confusion ($\beta=0.349$, $p < 0.001$), ambiguity confusion ($\beta=0.333$, $p < 0.001$), and conflict confusion ($\beta=0.248$, $p < 0.01$) all significantly positively influenced delayed choice, confirming hypotheses H1a to H1c. Additionally, overload confusion ($\beta=0.334$, $p < 0.001$), ambiguity confusion ($\beta=0.308$, $p < 0.001$), and conflict confusion ($\beta=0.276$, $p < 0.01$) were found to significantly positively affect consumers' negative emotions, thereby verifying hypotheses H2a to H2c. In line with expectations, negative emotion ($\beta=0.295$, $p < 0.001$) also significantly positively affected delayed choice, thus confirming hypothesis H3.

Table 5 Result of hypothesis test

Hypothesis	Path	β	Ustd.	S.E.	C.R.	p	Result
H1a	OC→DC	0.349	0.370	0.057	6.551	***	Accepted
H1b	AC→DC	0.333	0.362	0.058	6.249	***	Accepted
H1c	CC→DC	0.248	0.253	0.052	4.903	***	Accepted
H2a	OC→NE	0.334	0.357	0.050	7.112	***	Accepted
H2b	AC→NE	0.308	0.308	0.051	6.029	***	Accepted
H2c	CC→NE	0.276	0.301	0.051	5.905	***	Accepted
H3	NE→DC	0.295	0.342	0.058	5.887	***	Accepted

*P< 0.05; **P<0.01; ***P<0.001*

Mediation Effect

This study applied the SPSS PROCESS tool with a Bootstrap sampling of 5,000 and a 95% confidence interval to examine the mediating role of negative emotions between consumer confusion and delayed choice. The mediating effect of negative emotions on the relationship between overload confusion and delayed choice (effect = 0.245) is significant, as the 95% confidence interval excludes 0, confirming H4a. Similarly, for ambiguity confusion (effect = 0.192) and conflict confusion (effect = 0.188), the confidence intervals do not contain 0, validating H4b and H4c, respectively.

Table 6 Analysis of Mediating Effect

Paths	Effect	Bias-corrected 95% CI		Degree of Mediation
		Lower	Upper	
Indirect Effect				
H4a: OC→NE→CD	0.245	0.051	0.094	partially mediating
H4b: AC→NE→CD	0.192	0.042	0.116	partially mediating
H4c: CC→NE→CD	0.188	0.040	0.115	partially mediating

Discussions

This study delineates the various facets of consumer confusion encountered during online shopping—specifically overload, ambiguity, and conflict confusions—and investigates their impact on delayed choice, yielding several key findings:

Firstly, it was established that overload confusion, ambiguity confusion, and conflict confusion significantly contribute to the postponement of purchasing decisions by consumers. This aligns with prior research by Kim & Lee (2019), Leek & Kun (2006), and Wang et al. (2020), confirming the direct relationship between these types of consumer confusion and delayed choice behaviors. Secondly, the study further corroborates that consumer confusion elevates negative emotions among consumers, consistent with findings from Mishra et al. (2021), Jin et al. (2020), and Wang et al. (2023). The intensification of information overload, ambiguity, and conflict triggers adverse emotions such as irritation and anxiety, with the severity of these emotions escalating in direct proportion to the stimulus strength. Thirdly, negative emotions were found to have a positive influence on the propensity of consumers to delay decisions, resonating with the insights from Pappas et al. (2018) and Mishra et al. (2021). This underscores the role of negative emotions as a pivotal factor motivating consumers to defer choices, particularly as these emotions intensify. Lastly, the study elucidates that negative emotions serve as a mediator between consumer confusion and delayed choice. The entanglement of consumers in a web of ambiguous, conflicting, and contradictory product information induces negative emotions such as disappointment and irritation. This emotional state diminishes patience with the online shopping process, leading to delayed decision-making. Overall, this investigation enriches the understanding of how different types of consumer confusion and the ensuing negative emotional responses contribute to delayed purchasing behaviors, offering a nuanced perspective on the dynamics of online shopping decisions.

Conclusion and suggestions

This study investigates the impact of consumer confusion factors, including overload confusion, ambiguity confusion, and conflict confusion, on consumers' delayed choice within online shopping environments. The findings contribute significantly to the realm of online shopping behavior, particularly in the context of delayed purchasing decisions. While existing literature predominantly centers on impulsive buying, live shopping, and purchase intent, there's a notable gap in understanding negative buying behaviors such as decision postponement. This research addresses this gap, enhancing the body of knowledge on delayed choice behaviors. Furthermore, it elucidates the underlying mechanisms of consumer delayed choice within online shopping, investigating the impact of consumer confusion and resultant negative emotions on decision postponement. Through the development and analysis of a theoretical model, this paper offers insights into the 'black box' of consumer behavior, rendering the process of delayed choice more transparent and comprehensible.

This study also has some managerial insights and suggestions. First, to alleviate overload confusion, platforms should refine product recommendation algorithms. This involves adjusting the volume and precision of recommendations by incorporating user preferences more accurately and allowing users to filter out unwanted product categories. Enhancing product labeling for precise filtering can also significantly reduce the overwhelming effect of excessive choices, thereby diminishing negative emotions such as irritation. Second, merchants can mitigate ambiguity confusion by ensuring the accuracy and clarity of product information. Utilizing customer service feedback, online Q&As, and community interactions can help identify and address areas of confusion. Effective communication, including straightforward language and transparency about product features, can prevent the exacerbation of consumer uncertainty. Third, to address conflict confusion, merchants should develop efficient mechanisms for resolving discrepancies and responding to consumer grievances promptly. Post- resolution, a thorough analysis to identify and rectify the root causes of conflicts, such as misleading product descriptions or discrepancies in product quality, is essential. By implementing these strategies, online platforms and merchants can enhance the shopping experience, reduce consumer confusion, and, consequently, decrease the likelihood of delayed purchasing decisions.

This research, while contributing valuable insights into the phenomenon of consumer delayed choice in online shopping, has certain limitations that warrant mention. Firstly, the research primarily investigates the impact of specific types of consumer confusion—overload, ambiguity, and conflict—on delayed purchasing decisions. This focus does not encapsulate the entire spectrum of potential confusion sources, suggesting that future studies could broaden the scope to include additional dimensions of consumer confusion and enrich the understanding of its effects. Secondly, the methodology employed is exclusively quantitative. Future research could benefit from incorporating qualitative methods, such as in- depth interviews, to garner more nuanced insights into consumer perceptions and decision- making processes. Lastly, the current analysis centers on the relationship between consumer confusion and delayed choice, without considering other possible factors influencing postponement behaviors. Subsequent investigations are encouraged to explore a wider range of influences on delayed choice, further expanding the literature in this field.

New knowledge and the effects on society and communities

In the context of online shopping, consumers often face a substantial extrinsic cognitive load as they navigate through product pages, reviews, and other information. This not only consumes significant working memory resources but also detracts from their ability to focus on the core aspects of their needs, potentially leading to postponed decision-making or even the abandonment of the purchase altogether. Moreover, as online shopping continues to evolve, understanding the triggers and implications of cognitive dissonance in this realm becomes crucial for both consumers navigating the digital marketplace and marketers aiming to create more cohesive and satisfying online shopping experiences. This research findings confirmed that the positive relationship between consumer confusion and purchase decision delays through negative emotions, it revealed the underlying mechanisms of consumer delayed choice within online shopping. It helps us to predict the outcomes of negative factors that influence online behavior. Moreover, it offers practical implications for addressing and mitigating consumer confusion issues within the realm of online retail services. Online retailers should keep their information base on consumer changes up to date. The findings provide valuable insights for marketers and online retailers, guiding them in efforts to alleviate consumer confusion, mitigate negative emotional responses, and ultimately reduce the incidence of delayed purchasing decisions.

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02

Strategies for Enhancing Production and Marketing of Dried Freshwater Algae Sheets in Luang Prabang Province, Lao PDR

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Abstract

This study was conducted to investigate: 1) socio-economic attributes of farmers producing dried fresh water algae sheets in Luang Prabang province, Lao P. D. R.; 2) current conditions of production and marketing of the farmers; and 3) guidelines for promoting production and marketing of the farmers. A set of questionnaires was used for data collection administered with a sample group of 92 farmers producing dried fresh water algae sheets. Obtained data were analyzed by using descriptive statistics. Results of the study revelated that most of the respondents were female, 41-50 years old, elementary school graduates and they had 3-5 family members on average. A monthly income of the respondents was less than 5,000,000 Kips. The respondents had 5-10 years of experience in dried fresh water algae sheets production. Most of them (96.7%) had never reared cattle. They searched raw materials from nature in their area (92.4%). Most of the respondents (83.7%) used their own capital for dried fresh algae sheets production. Environmental conditions and capital were key factors effecting production process of the respondents. Distribution market was the main problem encountered which might be due to a stiff competition and difficult market access.

Keywords: Dried fresh algae sheets, Production, Marketing, Producers, Promotion guidelines,
Lao PDR

Introduction

Fresh water algae is a local food in Luang Prabang that shows an interesting local wisdom. This is in terms of cost-effective use of a natural resource and adaptation to geographic and cultural conditions. Dried fresh water algae sheets are an example of long-inherited food culture in northern Lao P.D.R. (Chantajon, 2008). It comprises 20% protein, 21% fiber, 31% carbohydrate, and vitamin B. Besides, dried fresh water algae has antioxidants and many medicinal properties (Peerapornpisal, 2019). Nowadays, Lao P.D.R. has an Economic Development Plan and strategies on agricultural product promotion and development. The said plan has been implemented for two years up to the present. The National Council has a resolution to assess and select skillful entrepreneurs in quality product manufacturing. This includes systematic monitoring to raise international standards and increase competitiveness. In addition, the one district-one product policy is promoted to strengthen the community to be self-reliant. This is under the utilization of natural resources and local wisdoms for quality product development (National, 2021).

However, product manufacturing in Lao P.D.R. still has many problems which cannot be solved. This includes quality of food that is not consistent with standards. Also; there are difficulties in product transportation due to limited topographic conditions. In fact, various agencies in the country try to promote and develop quality of production and distribution for growth stability, and sustainability (Chaiyawong et al., 2020). At present, dried fresh water algae sheet production faces various challenges such as lack of supporting funds, inadequate production equipment and needs of customers. Also, there are overlapping production and no perception of new technology and innovation. Moreover, marketing is still unable to properly track and analyze sales results. Communication with customers is ineffective due to lack of confidence in income development. Also, there are changes in the market and products are different based on price and quality (Seanwilai, 2018).

Objectives of the Study

Specifically, this study aimed to investigate:

1. Socio-economic attributes of farmers producing dried fresh water algae sheets in Luang Prabang province, Lao P.D.R;

2. Current conditions of production and marketing of the farmers; and

3. Guidelines for promoting production and marketing of the farmers.

Methodology

Population and sample group

The population consisted of 120 households producing dried fresh water algae sheets in Luang Prabang province, Lao P.D.R. In other words, there were 42 households from Muang Nambak, 30 households from Muang Viangkham, 28 households from Muang Chomphat, and 20 households from Muang Pak-Ou. The sample group consisted of 92 persons (households) obtained by a method of (Krejcie & Morgan., 1970). with 95%. of the reliability. By using the formula for calculating the size of (Punthai, 2011).

Research instrument

A set of questionnaires passing inspection was used for data collection (Close-ended and open-ended questions). It consisted of 3 parts :) 1) socio-economic attributes of the respondents; 2) current conditions of production and marketing; and 3) guidelines for promoting production and marketing of the respondents.

Data analyses

Obtained data were analyzed by using the SPSS program (Descriptive statistics - frequency, percentage, minimum, maximum and standard deviation) (Rovinelli & Hambleton, (1977).

Results

Results of the study revealed that most of the respondents were female (92.4), 41-50 years old, married, elementary school graduates and they had 3-5 family members. About one-third of the respondents (34.8%) had 5-10 years of experience in dried fresh water algae sheet production. Most of the respondents (92.2%) had a monthly income of less than 5,000,000 Kips.

Regarding current conditions of dried fresh water algae sheet production in Luang Phrabang, almost all of the respondents (96.7%) had never reared algae. Most of them (77.2%) usually harvested fresh water algae during January - March, 9:00 am. -12:00 am. (68.5%) and they used bare hands for the harvest (94.6%) and washing (85.9%). The respondents were promoted and supported on the production by international organizations found at a highest level (63.0%). Mostly, the respondents used the traditional method of processing (64.1%). They mostly used 7-8 kinds of raw materials for the production (52.2%). Most of them (88.0%) used household cooking recipes (80.4%) and used their hands in arrangement (70.7%). Most of the respondents (90.0%) used 1-2 ways of seasoning. All of them (100%) dried the fresh water algae sheets in the sunlight. Most of the respondents (67.4%) screened quality fresh water algae sheets based on no breakage. All of them (100%) used plastic bags to be the container. Most of them (83.7%) used their own capital for the production and gained knowledge about dried fresh water algae production (69.6%) and through experts/educational trips (50.0%). For problems encountered in the production, it involved environmental conditions, capital, and inadequate raw material sources (68.5%).

With regards to current conditions of marketing and distribution, the respondents directly sold the product to consumers (88.0%) and they used a motorcycle for the product distribution (64.1%). Most of the target customers (73.9%) were external ones (Different towns and provinces). The respondents mostly sold their product in the community market (71.7%). More than one-half of them (60.9%) gave suggestions about their products to customers. Less than one-half of them (43.5%) held activities to promote their product. Almost all of the respondents (96.7%) produced semi-finished products. Most of them (80.4%) had problems in distribution market, product shelf life and lack of the experience in marketing techniques.

The following were guidelines for promoting production and marketing of the respondents:

1) Budgetary support for the dried fresh water algae sheet producers (A highest level, μ = 4.22). Based on its details, support of private agencies and international aid organizations was needed at a highest level (μ = 4.53).

2) Production support for the dried fresh water algae sheet producers (A high level, μ = 4.19). Based on its detail, knowledge development on food safety by concerned government agencies (A highest level, μ = 4.33).

3) Development of the dried fresh water algae sheet producers (A highest level, μ = 4.31). Based on its detail, promotion of use of new technology to reduce production costs (A highest level, μ = 4.38).

4) Machine/ equipment support for the dried fresh water algae sheet producers (A highest level, μ = 4.41). Based on its details, funding for machine/ equipment support was needed most (A highest level, μ = 4.57).

Table 1 Results of an analysis on guidelines for promoting dried fresh water algae sheet production

Support	μ	S.D.	Skewness	Kurtosis	level
1. Budgets	4.22	0.58	-.534	-.527	Highest
2. Production	4.19	0.49	-.118	-.427	High
3. Labor or producer development	4.31	0.52	-.347	-.878	Highes
4. Machines/Equipment	4.41	0.58	-.964	.156	Highes
Total	**4.28**	**0.46**	**-1.10**	**.224**	**Highes**

Remark: 4.21-5.00 = Highest, 3.41-4.20 = High, 2.61-3.40 = Moderate, 1.81-2.60 = Low,
1.00-1.80 = Lowest

Promotion of dried fresh water algae sheet marketing of the producers the following were found:

1) As a whole, product advertisement of the producers was found at a highest level (μ = 4.25). Based on its detail, the advertisements through online media, internet and various websites were in the first place (μ = 4.54).

2) Product distribution of the dried fresh water algae sheet producers was found at a high level (μ = 4,17). Based on its detail, promotion of the preparation of documents disseminating product attractiveness was in the first place (μ = 4.28).

3) Public relations of the dried fresh water algae sheet producers were found at a high level (μ=4.13). Based on its detail, public relations through television media were found in the first place (μ=4.47).

4) Salespersons of dried fresh water algae sheet was found at a highest level (μ=4.48). Based on its detail, before and after-sales services to customers (Listening to customer opinions about taste and shelf life of the product) was found at the first place (μ=4.68).

Table 2 Results of an analysis on marketing promotion strategies for dried fresh water algae sheet product

Marketing Promotion strategies	μ	S.D.	Skewness	Kurtosis	level
1. Product advertisement	4.25	0.51	-.324	-.883	Highest
2. Product distribution	4.17	0.46	.140	-.706	High
3. Public relations	4.13	0.44	.325	-.520	High
4. Salesperson	4.48	0.51	-.800	-.301	Highest
Total	**4.26**	**0.39**	**-.708**	**-.527**	**Highest**

Remark: 4.21-5.00 = Highest, 3.41-4.20 = High, 2.61-3.40 = Moderate, 1.81-2.60 = Low,
1.00-1.80 = Lowest

Discussions

Socio-economic attributes of the respondents

Most of the respondents (92.4%) were female. This implied that women played roles in processing or producing dried fresh water algae sheets better than men. This involved finding raw materials, harvest, management process, and selling. It was an increase in woman participation in income generating. Their age range was 41-50 years on average. Most of the respondents were married and they had 3-5 family members. They were elementary school graduates and had 5-10 years of experience in dried fresh water algae sheet production. They had an income earned from it for about 5,000,000 Kips per month. This conformed to a study of (Boonchuay, 2017) which found that most of her respondents are female and their age range was 50-50 years. Most of them (70%) were elementary school graduates. It also conformed to a study of (Kayavongsa et al., 2023) which were found that more than one-half of their respondents (60%) were female and their age range was 41-50 years. They had been running the business (coconut product) for 6-10 years with a monthly income of about 1,000,000-5,000,000 Kips on average (42-86%).

Current conditions of dried fresh water algae sheet production and distribution of the respondents

It was found that all of the respondents had never domesticated cattle. Most of them (92.4%) looked for raw materials in their own areas. They mostly harvested fresh water algae during January- March and washed it using bare hands. Promotion and support on dried fresh water algae sheet production was mostly done by international aid organizations (63%). It mostly involved processing even though it was the traditional one. The respondents usually used 7-8 kinds of raw materials and 1-2 kinds of seasoning to produce dried fresh water algae sheets. After that, the dried fresh water algae sheets were dried in the sunlight or open areas. Perfect dried fresh water algae sheets were selected and put into plastic bags. Most of the respondents used their own capital for the production and gained more knowledge through specialists and educational trips. Key factors having an effect on production process included environmental conditions and capital. This conformed to a study of (Jedsadachaiyut & Sermcheep, 2021) which showed that the folk wisdom in cooking and preserving was an important factor on the creation of occupational stability for local people. (Pimonsri et al., 2022) revealed that farmers needed for food production at a high level ($\mu=4.03$) and they formed a group to purchase production factors (Inputs).

Current conditions of dried fresh water algae sheet distribution and marketing.

It was found that the distribution channel used by the respondents most was selling directly to customers (88.0%). They rode a motorcycle to deliver the product to customers because it was convenient and fast. Most of their customers are those living in other towns or provinces. Normally, dried fresh water algae sheets were sold in the community market. There were suggestions about the product to customers or interested persons. Also, product tasting could attract and satisfy customers. Aside from advertisement, activity holding like exhibition was an effective method of getting to know and purchase the product. Most of the dried fresh water algae sheets were semi-finished products which were ready to be cooked or eaten immediately after purchasing. There were two main problems in the product distribution: difficulties to access markets and short shelf life of the product. This conformed to a study of Muangcham (1999) which found that middlemen set the price for purchasing mangosteen most (95.5%). (Pimonsri et al., 2022) claimed that 78.1% of farmers selected the distribution channel based on convenience and short distance. In addition, the respondents needed for potential development in terms of product improvement, processing, packaging, distribution, and promotion strategies.

Guidelines for promoting production and marketing of dried fresh water algae sheets among producers in Luang Phrabang

Promotion of dried fresh water algae sheet production included 4 aspects as follows:

1) Budgetary support which, as a whole, was found at a highest level (μ=4.22). Based on its detail, supported by private agencies and international aid organizations were found in the first place. Besides, the respondents put the importance on it at a highest level.

2) Production knowledge support which, as a whole, was four found at a high level (μ=4.19). Based on its details, government agencies helped develop knowledge about food safety to reduce product damage. The respondents put the importance on it at a high level.

3) Workforce development which, as a whole, was found at a highest level (μ=4.31). Based on its detail, it focused on use of new technology to reduce production costs. The respondents put the importance on it at a highest level.

4) Machine/equipment support which, as a whole, found. at highest level (μ=4.41). The respondents put the importance on it at a highest level.

This conformed to a study of Maifoei (2018) which revealed that farmers needed for the promotion of durian production most and at a highest level (μ=4.56). This was followed by the promotion of input support (μ=4.52), marketing (μ=4.21) and agricultural extension methods (μ=3.70) respectively.

Promotion of dried fresh water algae sheet marketing included 4 aspects as follows:

1) Product advertisement which, as a whole, was found at a highest level (μ=4.25). The respondents put the importance on it at a highest level.

2) Product distribution which, as a whole, was found at a highest level (μ= 4.17). The respondents put the importance on it at a high level.

3) Public relations, which, as a whole, was found at a high level (4.13). The respondents put the importance on it at a high level.

4) Salesperson which, as a whole, was found at a highest level (μ= 4.48). The respondents put the importance on it at a highest level.

This conformed to a study of Nonraksanukul (2017) which confirmed that the respondents put the importance on satisfaction with the product at a high level (μ=3.53). This was followed by revisit to 7-eleven (μ=3.41) and words-of-mouth (μ=3.33).

Criticism

This study is interesting and beneficial to local economic development. According to the survey of 92 farmer respondents in Luang Prabang, most of them were female using natural raw materials for processing. It points out that they participate in the production process and local economy development. However, the traditional dried fresh water algae sheet production maintains identity and cultural value which needs to be improved in terms of technology, quality, budgets, workforce and production. (Jedsadachaiyut & Sermcheep, 2021) claimed that direct sales to customers in the community market is an effective channel but still lacks of public relations and systematic distribution.

Proactive marketing promotion through advertisement and public relations helps enrich customer perception about the product. Support of academics and specialists helps create effective product distribution. Furthermore, seeking. more distribution channels that meets needs of customers helps increase marketing opportunities and incomes. (Nonraksanukul, 2017) believed that results of her study can be possible guidelines for increasing the capability in the development of product, processing, packaging, and long-term sales promotion. Nevertheless, clear presentation of development plans and continual monitoring are needed for successful and effective production.

As a whole, this study can be an appropriate guideline for developing production and marketing of dried fresh water algae sheets for producers in Luang Prabang. Production

networks and marketing development can be created among producers and interested persons there and neighboring areas. Holding a training on production technology is essential for producing and developing quality of the product. In other words, this will be beneficial to both of the producer and the consumer.

Conclusion and suggestions

According to results of the study, it showed the production process and marketing of dried fresh water algae sheets that the traditional method was mostly used (64.1%). Meanwhile, there was a challenge of environmental conditions and capital limitations. It was found that budgetary support as well as machines/equipment were needed at high level (x=4.22). Besides, there were need for the development of knowledge about food safety and use of modern technology for effective production. Thus, it needed for improvement and the additional support by government or private sector. Findings showed that the dried fresh water algae sheets were mostly sold directly to customers (88%) . Its sales promotion included advertisement, activity holding (exhibition), tasting, etc. Processing of semi-finished products from fresh water algae implied the importance of online media (X=45.4). In other words, the following were important factors for the development of the product to meet need of the market:

1) Preparation of published documents to promote sales;
2) Use of television media for public relations;
3) Good services of salespersons; and
4) Putting the importance on opinions of customers;

Meanwhile, there were problems encountered which were needed to be solved. Thus, strategies must be developed to overcome the problems for effective production and marketing sustainability.

Recommendations : Regarding the study on guidelines for promoting production and marketing of the farmer group producing dried fresh water algae sheets, the researcher would like to recommend its advantage to concerned agencies in agricultural extension: the central and the local agricultural extension offices, City Chamber of Commerce and dried fresh water algae sheet producers in 4 towns-Muang Nambak, Muang Viangkham, Muang Chomphet, and Muang Pak Ou (Figure 1).
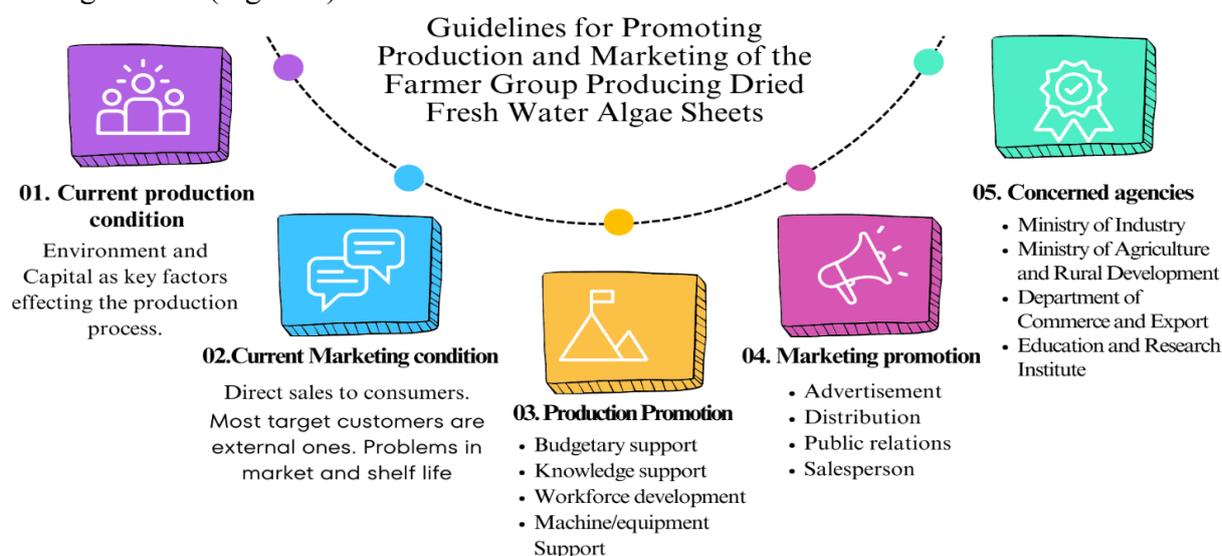
Figure 1 Needs of the farmers for guidelines for promoting production and marketing of dried fresh water algae sheets in Luang Prabang (Research, 2024)

1) According to results of the study, the production still lacks of modern machines/equipment to help increase quality and amount of the product. Thus, the government sector should provide budgetary support or modern machines/equipment to the producers such as dryers and washers. In addition, a training project should be prepared so that the producers can use modern machines/ equipment effectively. Good and safe product is beneficial to both of the producer and the consumer.

2) Nowadays, the producers still lack of capital to build various structures for production. Thus, the production process is inconvenient and not fully effective. The government sector or concerned agencies should provide budgetary support. Besides, it should have marketing promotion to increase sales opportunities and incomes for the producers.

3) The producers still lack of support from academics or concerned agencies in terms of product distribution and new distribution channels. Hence, some customers still have difficulties to access the product. Besides, use of technology and platforms online can help increase distribute in channels and marketing. support of academies and concerned agencies will be beneficial to both of the producer and the customer and results in progress/sustainability.

4) The producers still lack of knowledge and skills in production, distribution and marketing of dried fresh water algae sheets. Besides, preservation of product quality is not enough. Hence, the government sector on concerned agencies should set a training project and am educational trip for the producers. In addition, new methods and technology should be introduced to increase product quality and its shelf life.

5) The farmers still lack of knowledge support from government officials like agricultural extension personnel and academics. This makes the production process is not so effective. as it should be. Therefore, these government officials should plan a home/field visit to the producers to observe and give suggestions about dried fresh water algae sheets production.

All of these can be guidelines for supporting the production process and marketing of dried fresh water algae sheets of the producers. However, all concerned parties should collectively set a plan for assisting and promoting the production process. This must be consistent with the national strategies and development plan (One town, one product) under use of local wisdoms and natural resources.

New knowledge and the effects on society and communities

According to results of the study, it can help support the policy development related to potential promotion and development of dried fresh water algae sheet producers. This truly creates strength, stability and sustainability for these people to run the business. In addition, it widens knowledge scope about strategies for enhancing production and marketing of dried fresh water algae sheets of producers, academics, and interested persons. This will be beneficial to policy making for promoting production and distribution of dried fresh water algae sheets in Lao PDR in terms of quality and sustainability.

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03

Integrating Wisdom Management Models in Community Weaving Groups of Luang Prabang Province, Lao PDR

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Abstract

This qualitative research aims to study the knowledge management practices and the mode of weaving knowledge management among weaving group members in Luang Prabang province, Lao PDR. The study's sample for weaving knowledge management includes 326 members from weaving groups across 15 villages. Additionally, the sample group for examining the knowledge management model comprises 20 individuals, including leaders of the weaving groups and cultural officials at the district and provincial levels. Data collection was conducted through in-depth interviews with the sample and group discussions using predefined discussion points.

The results indicate that weaving has become the primary occupation and a significant income source for families and communities by integrating traditional wisdom with new knowledge acquired from weaving operations, development, and distribution. Although the members of the weaving group in Luang Prabang province have not yet formalized the documentation of weaving knowledge and wisdom, they exhibit an effective weaving process through various stages. These stages include knowledge searching, creation, systematic processing, filtering, accessing, and sharing among members. The researchers identified these seven steps as crucial in the knowledge management practices of the weaving group members in Luang Prabang, Lao People's Democratic Republic.

The model of weaving knowledge management reveals that the government sector plays a crucial role in supporting these practices by formulating policies that promote weaving, providing expert support, and allocating budgets to establish scholars and learning corners within the community, as well as for marketing initiatives. Additionally, the business sector is instrumental in funding equipment, training, and promoting weaving activities. The membership, comprising weaving group members and their leaders, is fundamental to the weaving production line. These individuals are pivotal in driving change and achieving community goals. Creating learning spaces and exchange opportunities for local people to trade their products at fair prices can help preserve local weaving sustainability.

Keywords: Weaving wisdom, Knowledge management model, Lao PDR

Introduction

Local wisdom has been a longstanding phenomenon in human society, persisting from ancient times to the present day. It embodies significant social concepts that endure over time. Local wisdom is characterized by its interconnectedness across various domains such as professions, livelihoods, economies, and cultures. It encompasses all aspects of life, including management, adaptation, and learning for the survival and advancement of individuals, communities, and societies. Somakasetrin, (2008). Local wisdom embodies the accumulated knowledge derived from the experience of knowledgeable individuals within a community. This knowledge is often inherited from ancestors who possessed the ingenuity to innovate and utilize natural resources to solve local challenges, transforming raw materials into crafts and practical tools. Weaving, as a branch of handicraft, exemplifies this wisdom and has served humanity for millennia. It is a skill‒intensive activity that demands precision, expertise, and regular training by practitioners. Weaving also requires considerable patience to produce intricate and aesthetically pleasing fabrics. Presently, the craft is predominantly practiced by elderly women who possess extensive weaving experience meanwhile the number of new generations to learn on it are decreasing in a single day. Na-Klang (2003)

Lao PDR is a country were homed to many ethnic groups whom coward with their own local wisdom particularly the weaving, every province has its own textile and patterns but the most interested that show case their product in the tourism marketing is the weaving product in Luang Prabang province the location of UNESCO world heritage city; which is represents a cornerstone of community culture, particularly significant amid the prevailing capitalist social context which risks eroding invaluable traditional wisdom. Preserving handicraft wisdom hinges crucially on effective knowledge management, enabling the preservation, development, and practical application of transmitted knowledge for household and community advancement. Examining the knowledge management model of local weaving wisdom entails establishing guidelines for systematically managing and preserving this knowledge. Local weaving wisdom encompasses experiential knowledge, beliefs, and cultural practices deeply embedded within each community member. While rooted in local thought and innovation, this wisdom currently lacks systematic organization and remains inaccessible to the broader public's knowledge. Ministry of Planning and Investment (2017)

LuangPrabang is a province in the northern of Lao PDR were homed to many ethnic groups especially the ethnic of Tai Leu who has a long history and experience with weaving wisdom, The province has promoted the added value of local handicrafts such as cloth weaving, production of goldware, silverware, wood carving and souvenirs by opening a market for villagers to bring local handicrafts to sell at tourist attractions in Luang Prabang Province. This is to solve the problems of suffering and improve the quality of life of the people (Department of Industry and Handicraft, 2019). However, due to its family model of production they are lacking of systematic organization of their knowledge wisdom and facing a difficulty to transmit that knowledge to their children or other generation.

According to the mentioned context of weaving knowledge in Luang Prabang province Lao PDR, I am motivated to explore the Integrating Wisdom Management Models in Community Weaving Groups. The outcomes of this study will provide valuable insights that can effectively guide interested parties in studying and implementing strategies aimed at enhancing the quality of life and cultural resilience within the community, ensuring its strength and sustainability. This study is object to:

     1. To investigate the weaving wisdom knowledge organizational among weavers in weaving groups in Luang Prabang province, Lao PDR.

     2. To identify the existing of weaving wisdom management model among weaving groups that transmit to the next generation in a sustainable manner in Luang Prabang province, Lao PDR.

Methodology

Population and sample

     The study on the integrating wisdom management models includes a population and calculate a sample from members of a weaving group in Luang Prabang Province. Lao People's Democratic Republic with population of 326 people drawn at random from the total number of weaving group members in 15 villages, 1,751 people, using a simple random sampling method (Sample Random Sampling) by drawing lots. This is because the population in each village is not equal. Therefore, it is necessary to find the sample size proportion. The sample size will be proportional to the total population. Vanitbancha (2005)

     Regarding the study the existing of weaving wisdom knowledge organization model, the sample calculate via purposive method that consists of 15 leaders from weaving groups, along with 3 staff members from district cultural offices and 2 staff members from the Luang Prabang provincial department of culture, totaling 20 individuals. The rational of this selection is due to they have directly involved in the weaving knowledge organization.

Data Collection

     Data collection for this study involves conducting in-depth interviews with the 20 samples population and facilitating group discussions centered around predefined topics. And conducting an onsite survey with the sample of weaving member via questionnaire to investigate their weaving information. A four-part questionnaire was completed by the sample group of 326 people. Both interview and questionnaire has completely the validity and Cronbach alpha method reliability investigation and approval of human subjects through research ethics and following with the local regulation.

Data Analyses

     After collecting the data, the accuracy of the data was checked and analyzed using the quantitative data by using the instant statistics program, The process involves organizing gathered information into notes, transcribing recordings, summarizing group discussions, and subsequently presenting the findings in a descriptive manner.

Results

The weaving wisdom knowledge organizational

The findings indicate that the integration of knowledge organization practices pertaining to the weaving expertise of members within the weaving group in Luang Prabang District, Lao PDR, involved an integration of traditional knowledge with newly acquired insights from ongoing 3 weaving activities which it including Weaving operational, Product processing, and Product distribution; each activities encompassed 6 systematic stages as below:

1. Weaving Operational

The analysis of the weaving operation is outlined in detail as follows:

Knowledge Acquisition:

Members of the weaving group inherit their knowledge, expertise, and weaving traditions from previous generations. This transmission occurs from an early age within both familial and societal contexts, where weaving is integral to daily life and livelihoods. Furthermore, members continually refine their skills through formal learning and practical application, fostering innovation and deepening their comprehension of weaving techniques.

Knowledge creation:

Members of the weaving group proactively pursue diverse knowledge and techniques within the weaving process to innovate, modernize, and align with consumer preferences. Given that weaving serves as a crucial supplementary income source for communities, members engage in continuous learning from internal and external outlets to enhance production capabilities. For instance, novel fabric patterns frequently emerge through the amalgamation of existing designs Systematic

Knowledge Management:

Leaders or members of the weaving group assume a crucial role in preserving and disseminating local wisdom. This responsibility spans the entire production cycle, encompassing raw material selection, technique transmission, and creative processes. Utilizing diverse media platforms including personal communication, physical products, advertisements, social media, and exhibitions, they actively promote community engagement in weaving. This fosters knowledge exchange among families, members, artisans, local media, and the broader public, thereby enriching the value and enduring appeal of local weaving products.

Access to Knowledge:

The majority of members within the weaving group acquire knowledge through intra-group discussions and engagement on social media platforms.

Knowledge Sharing:

Weaving group members frequently participate in informal discussions and visits aimed at exchanging weaving knowledge. Additionally, they engage in field trips to observe successful groups and attend fabric exhibitions for further learning. Group leaders actively attend training sessions and subsequently disseminate acquired knowledge to members through group meetings and informal interactions.

Knowledge Learning:

Weaving knowledge is preserved through the transmission of traditional practices from previous generations to the present. Within each family, weaving is ingrained into the lifestyle, with mothers passing down techniques directly to their daughters and granddaughters. Presently, a blend of demonstration and hands-on activities facilitates this knowledge transfer, wherein instructors provide detailed guidance and practical demonstrations. This method is widely recognized as highly effective for imparting essential weaving skills.

2. Product processing

The weaving members follow a production process outlined as follows:

Knowledge Acquisition:

Weaving members design and tailor their own dresses, selecting fabric specifications, shapes, colors, threads, and sizes. Their products primarily include silk shirts, cotton shirts, sin (bag cloth), sin patterns, bags, tissue boxes, calendars, tablecloths, and towels. Most products are sewn for personal and family use or for festivals.

Creation and Seeking Knowledge:

Weaving members systematically collect and organize knowledge on product processing by defining knowledge structures and classifications. They seek reliable sources of knowledge through experiences, knowledge sources, scientific methods, and research methods to enhance their product development.

Knowledge Processing and Moderation:

The processing and moderation of knowledge aim to improve the search and design of fabric patterns to meet standards, such as using consistent types of cotton and silk while enhancing styles. Members develop their own products by applying new knowledge acquired from various media sources.

Access to Knowledge:

Members of the weaving group access knowledge about product processing through discussions with fellow weavers, study tours to neighboring countries, and social media.

Sharing and Exchanging Knowledge:

Members exchange knowledge within the group by teaching and demonstrating production methods to each other without formal recordings or guidebooks. Knowledge is primarily transmitted through memorization and one-on-one instruction.

Learning:

Weaving members design and process their own products by learning from social media, memory, and generational transmission. This hands-on approach allows them to adapt and innovate continuously.

3. Product distributions.

This collaborative process enhances knowledge accessibility, promotes sharing among peers, and fosters continuous learning within the community:

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Figure 1 Weaving wisdom management model (Researcher, 2024)

The identifying of weaving wisdom management model

The research findings indicate that the weaving wisdom knowledge management should be involved the collaboration among the government, private sectors, weaving group members, and the community. The model is structured as follows:

1. Government Supporting

Government agencies play a pivotal role in supporting and enhancing the management of weaving knowledge and wisdom in Luang Prabang Province, Lao PDR. Their contributions include:

Promotional Policy Issuance:

Government agencies are instrumental in formulating policies to promote weaving and elevate the value of local handicraft products such as silk and cotton. These policies encourage the production of festival costumes, silk shirts, cotton shirts, and other woven items, fostering economic growth and cultural preservation.

Budgetary Support:

Historically, most weaving groups have lacked government funding for purchasing essential raw materials like silk, cotton, and dyes, as well as for acquiring tools, materials, and equipment necessary for production. To address these gaps, various government agencies now offer financial support. Policies promoting family and community businesses, along with accessible loans from institutions like Nayobay Bank and agricultural banks at low interest rates, facilitate financial access for weaving communities. However, the process to access the loan still in difficulty according to the statistic reveal that only 14.6 percent of weaving member who ever got a loan from the government bank.

Establishment of Weaving Technicians:

Given the predominantly female membership of weaving groups and the evolving market demands, the government supports the establishment of weaving technicians. These technicians coordinate and facilitate weaving activities, ensuring efficient production and

adaptation to market needs. The presence of technicians is crucial as it promotes collaboration among members and enhances production quality.

Creation of Learning Centers:

Learning centers serve as vital hubs for knowledge exchange among weaving group members. Currently, only three learning centers exist across 15 villages (Ban Phanom, Ban Chang Kong, and Ban Chiang Lom villages). These centers not only facilitate skill development and marketing expertise but also provide opportunities for members to sell their products at fair prices, thereby improving their professional and family incomes and enhancing community livelihoods.

Product Distribution Strategy:

A significant portion of woven fabrics is sold within villages, with some products available at local handicraft centers, night markets, and tourist sites. Despite these outlets, weaving group members often lack skills in accessing broader markets. Government initiatives to support small and medium-sized enterprises (SMEs) should include concrete measures to expand market access channels. Officials from both public and private sectors can play pivotal roles as intermediaries or establish centralized market systems to promote and export weaving products from villages, thereby ensuring fair pricing and sustainable economic benefits.

These coordinated efforts by the government are essential in preserving cultural heritage, supporting economic development, and improving the overall quality of life for weaving communities in Luang Prabang Province.

2. Non-Government supporting

Non-governmental organizations (NGOs) and private entities play a crucial role in supporting weaving groups in Luang Prabang Province by providing essential resources and assistance:

Funding support:

The funding support for weaving materials and equipment found that the majority of weaving group members are having less amount of working capital, because they use their personal money to invest and never received funding from the private sector. While the funding from private sector is mostly prioritize on the agricultural for instance the growing crops and live stocking, or SME. Therefore, there is a great need for funding from the private sector to purchase materials and equipment in order to promote the local weaving, and attracting people to turn to weaving in order to continue and transmit this weaving culture on.

Weaving training:

The study found that around 23.9 percent of the members did not attend weaving training, while the average number of participations is 4.93 times/year. Therefore, the private sector should provide a weaving training for the group member such as the introduction and how to use weaving tool, materials, and equipment. the process of choosing a dyeing color for silk and designing various fabric patterns; In addition, they should have an activity to enhance and upskill for weaving group members, make them work together to achieve the goal of developing local weaving production, this activity should be normally and continuous manner for the members to able to take part in the development of local weaving production.

Information assistance:

The study found that only 4.6 percents of the weaving group member who received information from officials, most of information they had is from social media, and from television and radio respectively. Therefore, the private agency should be more providing an information on the weaving sus as how to use tools and materials and guideline to local woven fabric, the announcement of any market fair or any places where they could sell their weaving product; and the assistance to advertise products on the mass media in order to strengthen and develop their various skills and knowledges. In addition, we have to encourage and disseminate the value of local weaving safeguarding to young generation, by conducting a training on the

local wisdom and educate people to be awareness on the weaving production as an intangible cultural heritage, this will   something that will make young peoples to understand and more awareness on the weaving production as an intangible cultural and value to keep going on to the next generation.

3. Weaving group members:

These individuals are integral components pivotal to effecting transformative change that leads to successful objectives. Therefore, they should implement systematic knowledge management, particularly focusing on weaving operations, processing, and distribution. This approach involves several essential phases

These peoples are the fundamental parts to making a change that led to the objective successful. Therefore, they should have a systematic knowledge management particularly in weaving operation, weaving processing and the distribution; this knowledge may begin with the search for knowledge, creation and pursuit of knowledge, the systematic knowledge management, knowledge processing and filtering, knowledge accessing and sharing, knowledge exchange and learning.

4. The community:

The policy initiatives from both government and private agencies aimed at promoting weaving through budgetary support or funding for learning centers play a crucial role in fostering community knowledge exchange and learning opportunities. These policies facilitate the distribution of weaving products at fair prices through dedicated centers, thereby supporting local artisans and preserving cultural heritage.

Campaigns advocating for the safeguarding of weaving wisdom encourage participation in symbolic festivals where clothing made from local woven fabrics is prominently worn. Additionally, initiatives encouraging civil servants to adopt attire crafted from local woven fabrics aim to further uphold and sustain these traditions.

Ultimately, these efforts contribute to economic empowerment by generating more employment opportunities for families and communities engaged in weaving. This not only enhances income levels but also enhances overall community well-being and quality of life.
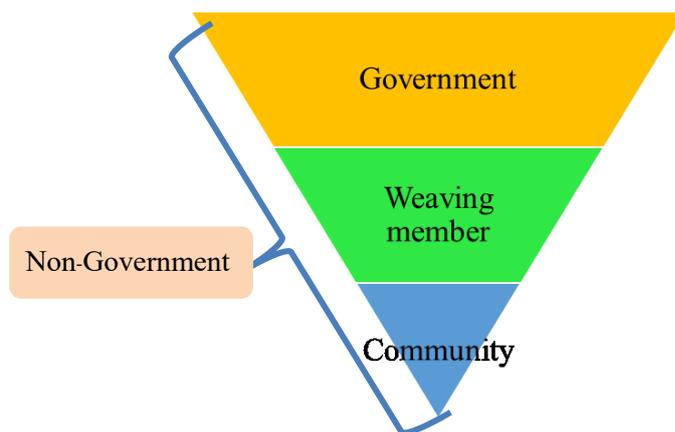
Figure 2 Weaving wisdom organization model developed by collaboration (Researcher, 2024)

Base on the above result we can summary the key finding of this research as below:

The integration of knowledge organization practices pertaining to the weaving expertise involved an integration of traditional knowledge with newly acquired insights from ongoing 3 weaving activities name as weaving operational, product processing, and product distribution. And the identified of weaving wisdom organization model should be developed by the collaboration among the government, private sectors, weaving group members, and the community

Discussions

The weaving wisdom knowledge organizational

The integration of knowledge organization practices pertaining to the weaving expertise involved an integration of traditional knowledge with newly acquired insights from ongoing 3 weaving activities as the following discussion:

1. Weaving operational

Members of the weaving community in Luang Prabang Province, Lao PDR, possess extensive knowledge of the sequential stages involved in the weaving process. Initially, they identify essential factors for production, arrange tools and materials, set up equipment, and design their own fabric patterns. They are capable of instructing and demonstrating these weaving processes to their children and family members, offering guidance on reducing production costs through the use of local raw materials. Furthermore, members of the weaving group actively seek new knowledge and techniques to develop their weaving products, ensuring they meet consumer needs.

The weaving craft has become a source of income for families and the community, making the acquisition of new knowledge from various internal and external sources vital for production development. This is consistent with Phattaradulpitak (2005), who research on the knowledge management of local wisdom related to cotton dyed with bark in Ban Non Suksa, Na Udom Subdistrict, Phon Thong District, Roi Et Province. Phattharadupitak's study identified three main production steps: dyeing, weaving, and processing. The initial stage of weaving is closely linked to the texture of tree bark, and specific techniques are used to create patterns for various items such as blankets, scarves, and long scarves.

Similarly, research by Thotsata et al. (2020) on the transmission of local wisdom in silk weaving in Pak Thong Chai District, Nakhon Ratchasima Province, found that the silk production process comprises six steps: growing mulberries, raising silkworms, processing fibers, tying and dyeing noodles, and silk weaving. Both studies underscore the importance of seeking and incorporating new knowledge to enhance traditional weaving practices and adapt them to contemporary demands.

2. Product processing

Members of the weaving group in Luang Prabang Province, Lao PDR, independently design, sew, and process their products. These products include silk shirts, cotton shirts, chins (sarongs), tin chins, scarves, bags, tissue boxes, calendar sets, tablecloths, and hand towels. Additionally, most woven fabrics are sewn for family use and worn during occasional festivals. This practice aligns with the research of Thanasanti & Saisena (2017), who studied the development of a model for managing local wisdom knowledge in tie-dye fabric. Sairoj Thanasanti's research identified five main production steps: Knowledge identification, Knowledge seeking, Knowledge storage, Knowledge exchange and transfer, Knowledge application. The processing stage involves the use of various materials and equipment, including cutting, sewing, and fabric color selection.

3. Product distribution

Currently, weaving provides substantial income for families and the community, offering additional working capital beyond their agricultural activities. This enables families to invest in more materials and equipment for production, generate employment, and secure regular income, thereby improving their quality of life. Members of the weaving group manage the sale of their woven fabrics themselves, either wholesale or retail, at various venues such as village markets, handicraft centers, night markets, or festivals.

However, these findings contrast with the research by Dethkulthog et al (2022), who studied consumer satisfaction with products based on the creative economy concept among the silk

weaving professional group of women at Ban Siao Noi, Mueang District, Chaiyaphum Province. Their study emphasized the importance of supporting and networking for product distribution, both online and offline, by expanding distribution channels to conveniently reach consumers. This included focusing on online marketing via various platforms such as Line, Facebook, and websites.

Additionally, the research by Thangpitakkri & Jamsai (2020) on ways to increase online marketing value highlighted the development of sales points, packaging, and the promotion of online marketing. Their study found that online training, Facebook pages, and Line could help the community by promoting teamwork to develop an online marketing model. This approach aimed to upgrade local products to the provincial or even international level, expanding production and generating more income for the community.

Furthermore, Pooripakdee (2018) found that expanding product distribution channels to include exports or sales in large malls, as well as platforms like Facebook, television, and e-commerce, could enhance marketing strategies. Developing and upgrading OTOP (One Tambon One Product) in various aspects, including quality, standards, and mass production to reduce unit costs, were also identified as crucial factors for success.

In contrast to these studies, the weaving group in Luang Prabang Province focuses primarily on local and physical sales, which highlights a different approach to market reach and distribution

The identifying of weaving wisdom management model

The study of the knowledge management model concerning the weaving expertise of the weaving group members revealed significant roles played by both the government and private sectors. The government sector is pivotal in supporting fundamental aspects by implementing policies to promote weaving, allocating budgets for establishing weaving technical and learning centers, and facilitating product distribution. Concurrently, the private sector contributes by funding materials and equipment, organizing weaving training programs, and providing updated information on weaving practices. Members themselves are identified as crucial contributors to weaving production, with group leaders playing pivotal roles in facilitating successful outcomes.

These learning centers serve as hubs for knowledge exchange and experience sharing within the community, functioning not only as educational resources but also as marketplaces promoting and safeguarding local weaving production. This finding resonates with research by Chaowakul (1997) who identified external factors influencing the successful operation of farmer groups, such as access to new academic knowledge, modern equipment, budgetary support, raw materials, and effective marketing strategies.

However, many members lack sufficient production equipment, necessitating support from relevant agencies to sustain weaving production and uphold quality standards. This aligns with findings from Butstee et al. (2020) research on the transmission of local wisdom in silk weaving at Ban Lung Pradu, Huai Thalaeng District, Nakhon Ratchasima Province. The research identified various transmission methods including demonstrations, practical applications, and storytelling, which foster a dynamic learning process enhancing the accumulation and development of silk weaving knowledge over time. Moreover, government and non-governmental sectors have allocated budgetary support to safeguard weaving wisdom, ensuring sustainability through ongoing activities and local leadership in preserving traditional knowledge.

Conclusion and suggestions

Conclusion

The integration of knowledge organization practices pertaining to the weaving expertise involved an integration of traditional knowledge with newly acquired insights from ongoing 3 weaving activities the first is the weaving operational which it is elucidated that member of the weaving group function as suppliers of weaving equipment, offer guidance on weaving techniques and dyeing processes, and conduct research into factors pertinent to weaving, such as the intricacies of pattern design. the second one is the product processing which it is the members convened to review existing knowledge and exchange opinions on utilizing locally available raw materials to reduce production costs, and the last activities is product distribution which it is serves as a significant source of income for both families and communities, supplementing their household finances alongside agricultural activities. throughout theses activities the new knowledge has merged with the traditional knowledge to transmit to the next generation.

The knowledge organization model applied to the weaving wisdom of weaving group members in Luang Prabang Province, Lao PDR, highlights that weaving has emerged as the primary occupation contributing to family and community income. This is achieved through the integration of traditional knowledge and new insights gained from the weaving process, product processing, and distribution. While members lack formal written documentation of weaving knowledge and wisdom, they demonstrate proficiency in various aspects of weaving, including knowledge acquisition, creation, systematic management, compilation, filtration, access, sharing, and learning.

Despite variations in contexts across weaving groups in different districts, the fundamental weaving processes remain similar. The researcher identifies these seven steps as crucial in effectively managing weaving knowledge among members in Luang Prabang Province, Lao PDR. These steps underscore the importance of systematic knowledge management in enhancing weaving practices and ensuring the sustainability of weaving traditions within the community.

The identifying of weaving wisdom management model that that transmit to the next generation in a sustainable manner are involved the collaboration among the government, private sectors, weaving group members, and the community.

The government sector plays a pivotal role as a primary partner in implementing essential support mechanisms crucial for the management of weaving knowledge within the weaving groups of Luang Prabang province, Lao PDR. This role includes the formulation and issuance of policies aimed at prioritizing weaving production, allocating budgets to support weaving initiatives, providing academic services, establishing learning centers, and implementing marketing strategies. These initiatives collectively aim to bolster the weaving industry, promote sustainable practices, enhance educational opportunities, and facilitate effective market engagement for woven products.

The non‑government sector serves as a supplementary agency supporting essential conditions required for the management of weaving knowledge in Luang Prabang province, Lao PDR. This sector contributes by funding the acquisition of equipment, organizing weaving training programs, and disseminating new information or knowledge to members of weaving groups. These efforts are aimed at enhancing the capabilities of weavers, fostering skill development, and promoting continuous learning within the weaving community.

The members of the weaving group are fundamental agents in driving successful outcomes. Therefore, they should adopt systematic knowledge management practices, particularly focusing on weaving operations, processing, and distribution. This involves

initiating the process with knowledge acquisition, followed by creation and pursuit of knowledge. Systematic knowledge management includes processing and filtering information, accessing and sharing knowledge, as well as fostering knowledge exchange and continuous learning within the weaving community. These practices are crucial for enhancing skills, improving production processes, and ensuring effective distribution of woven products.

The community When both the government and non-government sectors implement policies to promote weaving production, including budgetary support and funding for learning centers in the area, these initiatives can facilitate knowledge exchange and serve as educational resources for the community. Establishing such policies encourages people to distribute their weaving products at fair prices through these centers. Additionally, promoting the safeguarding of weaving wisdom can be achieved by encouraging the wearing of clothing made from local woven fabrics during symbolic festivals and among civil servants. This movement aims to preserve local weaving traditions and increase employment opportunities, thereby enhancing the income and quality of life for families and communities in the region.

In conclusion, the integration of knowledge organization practices pertaining to the weaving expertise of members within the weaving group in Luang Prabang District, Lao PDR, involved an integration of traditional knowledge with newly acquired insights from ongoing 3 weaving activities which it including Weaving operational, Product processing, and Product distribution; each activities encompassed 6 systematic stages including Knowledge Acquisition, Knowledge creation, Knowledge Management, Access to Knowledge, Knowledge Sharing, and Knowledge Learning. And in order to transmit this know ledge wisdom to the next generation in a sustainable manner this should be involved the collaboration among the government, private sectors, weaving group members, and the community.

Suggestions

The study of the knowledge organization model focusing on the weaving wisdom of members within weaving groups in Luang Prabang province, Lao PDR, reveals that group members primarily manage their knowledge and expertise independently. Much of their knowledge is inherited across generations, acquired through memorization and practical experience, thereby the government should establishment of learning centers in order to educate people on weaving skills and launch a marketing campaign to contributing to the renown of woven fabrics from Luang Prabang province.

To support these efforts, stakeholders including of government or non-government agency, private and business sector should provide financial backing and engage in marketing campaigns to promote Luang Prabang province's woven products. This promotion can be facilitated through various online platforms and by establishing systematic learning centers accessible to group members and interested parties. These initiatives aim to enhance accessibility to weaving knowledge, foster skill development, and broaden the market reach of Luang Prabang's woven products.

New knowledge and the effects on society and communities

This research lies in the creation of a model to systematically manage weaving knowledge because if it is not transferred well, it may result in the loss of the weaving culture of Laos, including Choosing to use a variety of samples spread throughout every area where there are local sages can completely pass on wisdom to the next generation and can continue to preserve the beautiful heritage of Laos

Acknowledgments

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04

Unveiling the Entrepreneurial Journey: Lived Experiences of Filipino Women Entrepreneurs

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Abstract

Women entrepreneurs play a crucial role in driving economic growth and innovation. This study explored the lived experiences of Filipino entrepreneurs, specifically, determined their experience, identified the challenges they faced, and proposed relevant follow-up extension activities. A phenomenological design using a qualitative approach was employed. Data were gathered through semi-structured interviews with three recipients of the livelihood package provided by the college. The findings revealed that the entrepreneurs' experiences significantly impacted their personal, social, and economic lives, and they encountered various challenges in their businesses. The study suggested the need for appropriate follow-up extension activities to help recipients overcome these barriers. Key recommendations include conducting seminars, workshops, or training programs to equip entrepreneurs with new knowledge and skills for effective business management; seeking sponsorship from the Local Government Unit for extension service programs to support entrepreneurs in addressing personal, social, and economic challenges; implementing monthly observations and evaluations by the college's Extension Services office to ensure the sustainability of extension service projects; and encouraging future research to further investigate other entrepreneurial experiences that may impact business success.

Introduction

At present, women play a pivotal role in business by driving innovation, fostering economic growth, and creating jobs. Their involvement in entrepreneurship enhances their own economic well-being and significantly contributes to the social and economic fabric of society. Women ensure workforce productivity and contribute to economic growth through their roles in household work, market sales, migrant labor, business, agriculture, and industry.

Increasing women's economic engagement has a strong potential to further drive economic growth. Women's economic independence enhances their contributions to families, society, and the broader economy. The 1987 Philippine Constitution, Article 13, Section 14, mandates the protection and promotion of working women's welfare, facilitating their full potential in national service.

In fact, the Philippine government actively supports job creation for Filipina women through laws such as the Magna Carta for Women which safeguards women's rights across various spheres and promotes equitable participation in government and security services. Additionally, the Gender Equality and Women's Empowerment (GEWE) Plan 2019–2025 aims to expand economic opportunities for women, supported by the Philippine Commission on Women (2019). Laws and initiatives aimed at empowering Filipina women enhance economic transformation by increasing diversity, productivity, and income growth. Greater economic empowerment for women improves their access to resources and control over decisions benefiting themselves and their communities.

However, women face barriers to full labor market participation, including domestic responsibilities and limited access to education, training, and financial services. Discrimination and lack of social protection further hinder their career progress (Layton & MacPhail, 2013). Despite government programs, many Filipino women remain unemployed due to insufficient budget allocation for gender-specific projects. In Bulacan municipalities, only 25% of the Gender and Development (GAD) budget addresses women's needs, with the majority diverted to non-GAD initiatives (Pangilinan, 2018).

In order to address this, state universities are expected to provide extension activities, especially for women, to increase their involvement and participation in nation-building. In Batangas State University – The National Engineering University, through its Extension Services Units, aims to enhance community awareness and organization, preparing residents to become leaders. This initiative supports communities by empowering marginalized sectors, including women, to achieve Sustainable Development Goals. By offering targeted programs and resources, state universities play a critical role in equipping women with the skills and knowledge needed to overcome barriers, thus fostering their economic independence and contribution to societal development.

With the goal to enhance women's leadership capabilities within communities by providing insights into their economic roles and livelihoods, this study seeks to contribute to existing literature on women's economic empowerment and entrepreneurship in the Philippine context. By highlighting the diverse roles, persistent challenges, and critical policy implications related to women in business, the research aims to advocate for effective strategies that support women's economic independence and contribute significantly to sustainable development goals.

Objectives of the Study

The main purpose of this phenomenological study is to explore the experiences of Filipino entrepreneurs of Malvar,Batangas. They are recipients of the livelihood package given by the College of Teacher Education, Batangas State University- The National Engineering University, JPLPC Malvar in partnership with Youth Barangay Council (Sangguniang Kabataan) of Poblacion, Malvar, Batangas.

Specifically, this study aims to:

1. Describe the participants' experience as recipients of a livelihood package;
2. Identify the challenges encountered by the recipients of livelihood package in undertaking their economic activity; and
3. Propose relevant and responsive follow up extension activity

Theoretical Framework

The main goal of promoting women's participation in economic transformation is to enhance their capacity to contribute to economic growth and improve the lives of individuals and the nation. This study draws on the Women's Economic Empowerment Theory of Change developed by Oxfam Canada, which focuses on increasing the well- being and economic empowerment of women. According to this theory, when women are able to realize their full economic potential as agricultural producers, employees, entrepreneurs, or business leaders, economies thrive and the benefits of growth are more widely distributed.

Effective economic empowerment for women is achieved when they can manage risks, improve their economic status, and exercise their rights to control and benefit from resources, assets, income, and their own time. This requires women to have independence, confidence, and the ability to participate in decision- making processes, free from violence and with equal rights to men (Kidder et al., 2017).

The theory also emphasizes that policies aimed at eliminating labor market inefficiencies and creating a level playing field for all individuals, as advocated by the provide women with opportunities to develop their potential and play a more active role in economic life. Access to resources such as land, housing, and capital, along with labor rights and social protection from insecure employment, are critical for women to equally contribute to economic growth.

Methodology

Research Design

This research aimed to explore the experiences of Filipino entrepreneurs. Phenomenological research was chosen as the methodological approach because it seeks to understand and interpret individuals' lived experiences and perceptions of phenomena. As defined by Creswell (2013), phenomenology is a qualitative research approach that emphasizes the collective experiences and perspectives of a specific group. This research design is appropriate for this study as it focuses on exploring the lived experiences and perceptions of Filipino entrepreneurs, providing a deeper understanding of how they interpret and navigate their entrepreneurial journeys.

Participants

The study purposefully selected three participants who were fortunate winners of the raffle and beneficiaries of the 'Maging BUYani: Negosyo ni Juana' y Ipagbunyi' livelihood package, administered by the Extension Services Office in partnership with the College of Teacher Education at Batangas State University - The National Engineering University JPLPC

Malvar Campus and the Youth Barangay Council (Sangguniang Kabataan) of Malvar. All three participants are women residing in Poblacion Malvar, Batangas. They are considered ideal participants for this study due to their direct involvement as beneficiaries of the livelihood package, which includes a capability‐building training program and GAD‐related initiatives. Being women entrepreneurs, they offer firsthand insights into the implementation and impact of these initiatives on their entrepreneurial experiences, providing valuable perspectives that align closely with the study's objectives and focus.

Data Gathering Tools and Procedure

The researchers followed a structured approach comprising four stages such as formulating interview questions, conducting semi‐ structured interviews, transcribing interviews, and organizing and analyzing the data. Initially, interview questions were formulated to guide the discussion, validated by the adviser, and subsequently approved by the respondents after obtaining their consent through a formal letter.

During the face-to-face interviews, the researchers posed structured questions designed to gather insights into the experiences of Filipino entrepreneurs who benefited from the 'Maging BUYani: Negosyo ni Juana'y Ipagbunyi' livelihood package. Questions included:

☐ How has your business evolved since receiving support from BatStateU?

☐ What challenges have you faced balancing entrepreneurship and household responsibilities?

☐ In what ways has this support impacted your family's finances and daily routine?

To ensure accuracy and focus during interviews, audio recording was used instead of note-taking. Post-interview, all recordings were transcribed, and the data were accurately organized and analyzed to derive meaningful interpretations. This systematic approach allowed the researcher to capture perspectives on entrepreneurial experiences, contributing to a comprehensive understanding of the program's impact.

Data Analysis

The data analysis process commenced with meticulous preparation, accurate transcription, and the structuring of interview transcripts. Multiple readings of the transcripts were conducted to gain a comprehensive understanding of the subject matter. Initial coding was systematically applied to identify and summarize key concepts within the data. These codes were then categorized and organized into thematic groups, ensuring a methodical approach to data organization.

Emergent themes were continuously refined to accurately capture the essence of the data and align with the study's objectives. Throughout the analysis, a rigorous process of constant evaluation and refinement was maintained. Each thematic area was critically examined for its relevance, and interpretations were grounded in the context of the research goals.

Given the diverse linguistic backgrounds of the participants, the researchers collaborated with a language expert to ensure accurate translation of Tagalog responses to English, facilitating accessibility for international readers. The findings were synthesized and presented comprehensively in the study report, integrating significant insights and excerpts from the interview data to highlight pivotal points and support the study's conclusions.

Results

The following tables present a comprehensive analysis of the lived experiences and challenges encountered by Filipino entrepreneurs who received a livelihood package.

1. Lived Experiences of Filipino Entrepreneurs

Table 1 presents the data that shows the participants' experience as recipients of a livelihood package.

Table 1 Described participants' experience as recipients of a livelihood package

Themes	Subthemes	Exemplary Texts
Personal	Improving Income	I became quite busy because I have many things to sell, but it's good because I received a lot of income. [p2] Of course, I am blessed and grateful. I had another source of income that has continued up until now. [p1] I persevered even more because I wanted something; I wanted to buy something, so gradually, I circulated my money. [p3] Since teaching is our profession, having more income is not a bad thing. We also need to have extra income. [p1]
Social	Building Networks	Of course, because I have met strangers who became my friends until now, I was able to build a relationship with them. [p1] Yes, because in online selling you will meet many people, make new friends. [p2]
	Family and Business	Mother does direct selling from the earnings of pre-loved clothes. I estimated that my mother's monthly income is less than Php 5,000. My family also became business-minded. [p1] My son and my husband served as my business partners. [p2]
Economic	Financial Opportunities	"It opened the way for a new opportunity. We used the money earned to fund a new business. [p1] I aim to grab something in a crisis because it is hard when you do not have any savings. Of course, it meets our needs, and I can buy what I want when there is extra. [p3] Before in my store, I wanted a water refill station, so now, with that money, I deducted it so I could buy 5 gallons of water. [p3]
	Business Strategies	Communication is the key. I always talk to my mother about other strategies you need to do, what else we can sell, and what the trend is. [p1] All I do is keep on posting [p2] You need to focus. [p3]

The table illustrates how receiving a livelihood package positively impacts Filipino women entrepreneurs, enhancing income, fostering social networks, and creating economic opportunities. By adopting effective strategies and leveraging personal and social resources, participants not only achieve business success but also contribute to community development and economic resilience.

As revealed, the analysis of participants' responses in the conducted interviews revealed three major themes such as personal, social, and economic impacts of receiving a livelihood package. Under the subtheme of improving income, participants emphasized the positive outcomes of increased business activity and income generation. For instance, participants expressed satisfaction with their additional income streams and the benefits of being actively engaged in their businesses. Such outcomes resonate with entrepreneurial literature, which emphasizes that active involvement and diversification of income sources contribute to success (Cardon & Patel, 2015). Additionally, participants reflected on the need for supplementary income and strategic financial management, underscoring their adaptive mindset and resilience in leveraging entrepreneurial opportunities.

Within the subtheme of building networks, participants highlighted the social benefits of entrepreneurship, such as fostering new relationships and community engagement. Networking activities were seen to enhance customer relationships and broaden business connections, aligning with studies emphasizing the importance of social capital in business growth (Gomez et al., 2024). Furthermore, participants played a role in inspiring others to start businesses, contributing to local economic activities and job creation, as noted in previous research (Kritikos, 2014).

Under the subtheme of financial opportunities, participants discussed how their entrepreneurial ventures led to new economic opportunities and investments. They also emphasized the importance of financial planning and savings, reflecting practices aimed at sustaining business growth and stability. Moreover, participants expressed satisfaction in meeting personal and family needs through their businesses, highlighting the fulfillment derived from their entrepreneurial endeavors (Berglund et al., 2020).

Moreover, participants identified various strategies for maintaining business stability, including effective communication, consistent marketing efforts, and focused business operations. These strategies contribute to organizational resilience and growth by enhancing market responsiveness and operational efficiency (Tycoonstory, 2022). They align with principles of proactive management and adaptability to market dynamics (Indeed Editorial Team, 2023).

2. Challenges Encountered

Table 2 presents the specific challenges noted by the participants in selling the livelihood package, which significantly impact their business operations.

As seen in the table, the challenges highlighted by participants underscore the critical aspects of business management: effective time management, awareness of customer behaviors in online transactions, and the importance of security measures to protect business assets. These insights are crucial for maintaining a healthy business environment and ensuring long‑term sustainability and growth

Table 2 Identified challenges encountered by the recipients of livelihood package in undertaking their economic activity

Themes	Subthemes	Exemplary Texts
Time Management	Schedule	I became quite busy because I have many things to sell, but it is good because I received a lot of income. [p2] Time is my enemy as a working student, and when I did get it, I had to make time for it. I also meet with customers, but when I was unable to handle him any longer, I gave it to my mother. [p1]
Scammer	Bogus-buyer	In the thrift shop I had, I had the experience of scammers, they said they would buy it, but they would not take it out of mine. [p2]
Felony	Theft	My shop was robbed on January 17. [p3]

In terms of time management, under the sub-theme of schedule, participant 2 noted, "I became quite busy because I have many things to sell, but it is good because I received a lot of income." This indicates that managing time effectively became crucial after receiving the livelihood package, leading to increased sales and income, which is viewed positively. This success underscores the importance of active involvement and dedication to business operations (Practical Business Skills, 2022). Participant 1 added, "Time is my enemy as a working student, and when I did get it, I had to make time for it. I also meet with customers, but when I was unable to handle him any longer, I gave it to my mother." Balancing responsibilities as a working student and an entrepreneur proved challenging, necessitating assistance to manage customer interactions effectively. Poor time management can lead to stress and hinder personal and professional goals (Team, 2023).

Regarding scammer, specifically, bogus-buyers, participant 3 shared, "In the thrift shop I had, I had the experience of scammers, they said they would buy it, but they would not take it out of mine." Dealing with scammers in online sales poses challenges, as some customers do not fulfill their commitments, affecting business operations negatively. Awareness of fraudulent activities and legal measures is essential for both sellers and buyers to prevent such incidents (Statistica, 2023).

Participant 3 also mentioned, "My shop was robbed on January 17." Experiencing theft dealt a severe blow to the business, resulting in substantial losses and setbacks. Such incidents often require additional financial resources to recover and restart operations, emphasizing the importance of securing business premises and assets (Bajajfinsrve, 2021).

In summary, the participants shared their perspectives on how these livelihood packages positively impact their lives and businesses, as well as the specific challenges they face in managing their economic activities. The analysis is structured around three key themes: personal, social, and economic impacts of the livelihood package. Under each theme, subthemes such as income improvement, networking benefits, and financial opportunities are explored, highlighting the diverse ways in which entrepreneurship contributes to community development and individual resilience. Additionally, the section explores into the challenges participants encounter, including issues of time management, dealing with fraudulent activities, and the impact of criminal incidents on their business operations. These insights offer valuable implications for enhancing support mechanisms and strategies to foster sustainable entrepreneurial endeavors in similar contexts.

3. Proposed Relevant and Responsive Follow up Extension Activity

Table 3 outlines the proposed extension activities designed to address the identified needs and challenges faced by Filipino entrepreneurs, as revealed through the gathered data. These activities aim to provide targeted support in enhancing time management skills, navigating legal requirements, protecting against fraud, and sustaining entrepreneurial skills, thereby fostering economic resilience and promoting sustainable development goals within the community.

These initiatives focus on enhancing time management skills, providing business startup guidance, preventing scams, and sustaining entrepreneurial skills. Each project is aligned with Sustainable Development Goals (SDGs) related to poverty reduction, gender equality, and economic growth. Implemented in collaboration with various agencies and monitored through interviews and business observations, these activities aim to empower entrepreneurs and foster sustainable business practices within the community.

Table 3 Proposed Relevant and Responsive Follow up Extension Activity

Title of the Project /Activity	Objectives	Type of community Extension Services	Sustainable development Goals	Cooperating Agencies	Monitoring and Evaluation Techniques	Sustainability Plan	Persons Involved	Financial Plan
What time is it?: time to live a balance life	•To assist the entrepreneurs in managing time	•Capability-Training Program •GAD Related	•**SDG1**: No Poverty •**SDG5**: Gender Equality •**SDG8**: Decent Work and Economic Growth	•CAS •CABEIHM •LGU of Malvar	Facet-to-face interview to observe and evaluate the business	•Entrepreneurs' Weekly Business Update •Monthly face-to-face business observation	•Dean CTE •Social Studies Students •CAS •CABEIHM •LGU •Entrepreneurs	PHP 10,000
Pa-Talk: Tips Para Sa Pagsisimula Ng Negosyo	•To help participants make decisions about business. •To educate participants on the basic legal requirements in establishing business. •To provide an overview on how to be run a business.	•Capability-Training Program •GAD Related	•**SDG1**: No Poverty •**SDG5**: Gender Equality •**SDG8**: Decent Work and Economic Growth	•CABEIHM •LGU of Malvar	Facet-to-face interview	Regular Interview / Updates	•Dean of CTE •Social Studies Students •CABEIHM •LGU •Participants	PHP 5,000
Scammer alert: are you prepared to protect your business?	• To identify various ways to prevent scammers and protect entrepreneurs' businesses •To be able to know how entrepreneurs could deal with scammers. •To gather ideas on how entrepreneurs can sustain and expand their businesses.	Capability – Training Project GAD – Related Program	•**SDG1**: No Poverty •**SDG5**: Gender Equality •**SDG8**: Decent Work and Economic Growth	•CABEIHM •LGU of Malvar	Face to face interview to observe and evaluate the business.	•Entrepreneurs' Weekly Business Update •Monthly face-to-face business observation	•Dean of CTE •Social Studies Students •CABEIHM •LGU •Entrepreneurs	PHP 5,000
Sales: sustaining active and long lasting entrepreneurial skills	• To be able to identify how entrepreneurs sustain their business despite having different merchandise.	Capability – Training Project GAD – Related Program	•**SDG1**: No Poverty •**SDG5**: Gender Equality •**SDG8**: Decent Work and	•CABEIHM •LGU of Malvar	Face-to-face interview to observe and evaluate the business	•Entrepreneurs' Weekly Business Update •Monthly face-to-face business observation	•Dean of CTE •Social Studies Students •CABEIHM •LGU •Entrepreneurs	PHP 5,000

Title of the Project /Activity	Objectives	Type of community Extension Services	Sustainable development Goals	Cooperating Agencies	Monitoring and Evaluation Techniques	Sustainability Plan	Persons Involved	Financial Plan
	• To be able to know how entrepreneurs sustain their management skills in business		Economic Growth					
What time is it?: time to live a balance life	•To assist the entrepreneurs in managing time	•Capability -Training Program •GAD Related	•SDG1: No Poverty •SDG5: Gender Equality •SDG8: Decent Work and Economic Growth	•CAS •CABEIHM •LGU of Malvar	Facet-to-face interview to observe and evaluate the business	•Entrepreneurs' Weekly Business Update •Monthly face-to-face business observation	•Dean CTE •Social Studies Students •CAS •CABEIHM •LGU •Entrepreneurs	PHP 10,000
Pa-talk: tips para sa pagsisimula ng negosyo	•To help participants make decisions about business. •To educate participants on the basic legal requirements in establishing business. •To provide an overview on how to be run a business.	•Capability -Training Program •GAD Related	•SDG1: No Poverty •SDG5: Gender Equality •SDG8: Decent Work and Economic Growth	•CABEIHM •LGU of Malvar	Facet-to-face interview	Regular Interview / Updates	•Dean of CTE •Social Studies Students •CABEIHM •LGU •Participants	PHP 5,000
Scammer alert: are you prepared to protect your business?	• To identify various ways to prevent scammers and protect entrepreneurs' businesses •To be able to know how entrepreneurs could deal with scammers. •To gather ideas on how entrepreneurs can sustain and expand their businesses.	Capability – Training Project GAD – Related Program	•SDG1: No Poverty •SDG5: Gender Equality •SDG8: Decent Work and Economic Growth	•CABEIHM •LGU of Malvar	Face to face interview to observe and evaluate the business.	•Entrepreneurs' Weekly Business Update •Monthly face-to-face business observation	•Dean of CTE •Social Studies Students •CABEIHM •LGU •Entrepreneurs	PHP 5,000
Sales: Sustaining Active And Long Lasting Entrepreneurial Skills	• To be able to identify how entrepreneurs sustain their business despite having different merchandise. • To be able to know how entrepreneurs sustain their management skills in business	Capability – Training Project GAD – Related Program	•SDG1: No Poverty •SDG5: Gender Equality •SDG8: Decent Work and Economic Growth	•CABEIHM •LGU of Malvar	Face-to-face interview to observe and evaluate the business	•Entrepreneurs' Weekly Business Update •Monthly face-to-face business observation	•Dean of CTE •Social Studies Students •CABEIHM •LGU •Entrepreneurs	PHP 5,000

Discussions

The study examines the profound impact of receiving a livelihood package on participants' lives, focusing on the economic, social, and personal dimensions. Engaging in economic activities significantly influenced participants personally, as they emphasized the transformative effects of actively managing their businesses. They expressed satisfaction with increased income and the fulfillment derived from entrepreneurial success, aligning with research indicating that active involvement correlates with higher levels of satisfaction and business success (Cardon & Patel, 2015).

Socially, participants highlighted how their businesses facilitated new connections and relationships. They recounted forging new acquaintances and receiving encouragement from others met through business interactions. Family involvement was also noted, with some participants collaborating with relatives as business partners. Moreover, participants inspired others to start their own businesses, underscoring the role of entrepreneurial activities in community engagement and social capital, consistent with studies emphasizing the importance of customer relationships in driving business growth (Gomez et al., 2024).

Economically, participants viewed their businesses as gateways to new opportunities. These opportunities not only fulfilled essential needs but also contributed to sales growth and business development. This aligns with findings suggesting that seizing opportunities enhances career advancement and economic stability (Indeed Editorial Team, 2023).

However, the study also illuminated significant challenges faced by participants. Sales management emerged as a major issue, with participants grappling to balance the demands of selling various products. Scams were another challenge, with participants recounting instances where customers failed to honor transactions, impacting their business integrity. Time management posed difficulties, exacerbated by dual responsibilities, while one participant experienced a setback due to a felony, resulting in substantial losses.

In response to these challenges, the researchers proposed several responsive extension activities. One aims to equip entrepreneurs with effective time management techniques. Another provides strategies to prevent scams and safeguard business interests. Another offers guidance on starting a business, tailored to market interests. Lastly, one focuses on nurturing management skills and sustaining businesses amidst market fluctuations.

These extension activities, developed collaboratively with agencies like CAS, CABEIHM, and LGU of Malvar, emphasize capacity-building, community engagement, and sustainable development goals. They are monitored through structured evaluations to ensure their effectiveness in empowering entrepreneurs and fostering resilient business practices within the community.

Conclusion and suggestions

Based on the significant findings of this study, several conclusions can be drawn. The research comprehensively described the lived experiences of livelihood package recipients across personal, social, and economic dimensions. It highlighted the positive impacts on income generation, social networking, and economic opportunities that participants experienced through their entrepreneurial endeavors. Conversely, the study also underscored the challenges faced by these recipients, such as time management issues, encounters with scammers, and incidents like theft, which posed significant setbacks to their business operations.

In response to these findings, the researchers proposed relevant and practical suggestions to support livelihood package recipients in overcoming these challenges. Firstly, it is recommended that the CTE Department officials organize seminars, workshops, or training programs aimed at equipping entrepreneurs with updated knowledge and skills essential for effective business management and growth. Collaboration with the Local Government Unit (LGU) through the College's Extension Services office is also advised to implement targeted extension service programs. These programs could address specific challenges faced by entrepreneurs, fostering resilience and sustainability in their business practices.

Moreover, regular monthly observations and evaluations of entrepreneurs are proposed to ensure the ongoing effectiveness and sustainability of these extension service initiatives. This monitoring process would enable adjustments and improvements based on real- time feedback, enhancing the support provided to entrepreneurs over time.

Lastly, for future research directions, it is recommended that further studies explore additional entrepreneurial experiences that may impact business outcomes. This would contribute to a deeper understanding of the dynamics involved in entrepreneurship among livelihood package recipients, potentially uncovering new insights and strategies for supporting their long-term success.

New knowledge and the effects on society and communities

This study contributes new knowledge by shedding light on the multifaceted impacts of livelihood packages on individuals, society, and communities. It underscores how such economic interventions not only enhance personal incomes but also foster social networks and create economic opportunities, aligning with Sustainable Development Goals (SDGs) like poverty reduction and gender equality. The study's findings provide valuable insights into the challenges faced by entrepreneurs, such as time management and security issues, prompting tailored extension activities to address these concerns effectively. By proposing actionable strategies and fostering partnerships between educational institutions and local governments, the study aims to cultivate resilient and sustainable entrepreneurial practices that can positively transform communities.

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05

Assessing the Significance of Social Values in Pre-Service Physical Education Teachers' Participation in Philippine Traditional Games

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Abstract

This study evaluates the perceived importance of social values among pre-service physical education teachers when engaging in Philippine traditional games at Batangas State University JPLPC-Malvar Campus during the academic year 2021-2022. Using a descriptive-correlation method, data were gathered from 50 respondents through a researcher-made questionnaire assessing their profile, social values, and perceived importance of these values. The theoretical framework is grounded in situated learning theory by Lave and Wenger and Vygotsky's sociocultural theory, emphasizing the role of social interaction in cognitive development. Results reveal that majority of respondents are female, aged 18-19, residing in urban areas, and belong to lower-income brackets. Community, diversity, well-being, and sustainability were rated as highly important social values. Significant relationships were found between respondents' sex, type of residence, socio-economic status, and their perceived importance of social values. The study highlights the potential of traditional games to foster essential social values and recommends activities such as seminars, team-building exercises, open forums, and sports festivals to enhance these values. These findings emphasize the need for integrating traditional games in physical education curricula to preserve cultural heritage and promote social development, particularly in a post-pandemic educational landscape.

Keywords: Social values, Pre-service teachers, Physical education, Philippine traditional games, Teacher participation, Cultural heritage

Introduction

Traditional Filipino games are integral to the social, emotional, mental, and physical development of children. These games, often played in groups, foster essential social skills and cultural values such as solidarity, diversity, fairness, inclusiveness, and cultural awareness. They also promote physical activity, creativity, imagination, competition, and camaraderie. However, with the rise of digital entertainment, these traditional games are at risk of being forgotten, leading to a potential loss of cultural heritage and the benefits these games provide (Rizzalyn & Edilberto, 2023).

Traditional games are part of the Filipino cultural tradition, yet modern lifestyles and growing alienation threaten their continuity. Many older games have persisted despite changes in people's lives, surviving in the memories of older generations even if they are not commonly played by children today. These games can contribute significantly to children's physical, social, mental, and emotional development, offering a more enriching alternative to digital games (Jem, 2023).

Incorporating traditional games in educational activities not only preserves cultural heritage but also meets the developmental needs of young children. These games promote cooperative activities, tolerance, understanding, and physical development. By integrating traditional games into teaching, educators can link the homeland's past and present, encouraging students to preserve their cultural heritage. Such activities enhance emotional intelligence and help children build better relationships within their peer groups (Yerner et al., 2023).

Despite the recognized benefits, there is a gap in understanding how pre-service physical education teachers perceive the importance of these social values when engaging in traditional games. This study aims to fill this gap by assessing the significance of social values in pre-service physical education teachers' participation in Philippine traditional games at Batangas State University JPLPC-Malvar Campus during the academic year 2021-2022. The research will provide insights into how these future educators value community, diversity, well-being, and sustainability through their engagement in traditional games. Additionally, it will offer recommendations to enhance the teaching of Physical Education by incorporating traditional games, thereby promoting cultural heritage and social values.

The COVID-19 pandemic has further emphasized the need for adaptable and culturally relevant teaching methods. As educational institutions worldwide have transitioned to remote teaching, assessing the effectiveness and satisfaction of faculty members has become crucial. This research seeks to understand how pre-service physical education teachers can leverage traditional games to foster social values, which is essential in shaping their future teaching practices in a post-pandemic educational landscape (Michelle et al., 2023).

Theoretical Framework

The study anchored on situated learning theory developed by Jean Lave and Etienne Wenger in the early 1990s and follows the work of Lev Vygotsky's sociocultural theory. Vygotsky's theories stress the fundamental role of social interaction in the development of cognition (Vygotsky, 1978), as he believed strongly that community plays a central role in the process of "making meaning." Sociocultural theory views human development as a socially mediated process in which children acquire their cultural values, beliefs, and problem-solving strategies through collaborative dialogues with more knowledgeable members of society.

Situated learning theory is about knowledge embedded in the activity, context and culture (Brown et al. 1989). Furthermore, this theory has a notion that contextual learning

and skills are used in real life. That there is knowledge in the environment, which can acquire new ideas and their behaviors, will be applied (Lave & Wenger, 1991).

Objectives

The study determined the perceived of importance social values when engaging in Philippine Traditional Games among pre-service Physical Education teachers at Batangas State University JPLPC-Malvar Campus for the Academic year 2021-2022.

Specifically, it will seek answers to the following:

1. What is the profile of respondents in terms of:

    1.1 sex;

    1.2 age;

    1.3 type of residence; and

    1.4 socio-economic status?

2. How may the respondents' perceived importance of social values when engaging in Philippine traditional games be described along the following dimensions:

    2.1 Community;

    2.2 Diversity;

    2.3 Well-being; and

    2.4 Sustainability?

3. Is there a significant relationship between the respondents' profile and their perceived importance of social values when engaging in Philippine Traditional Games?

4. What activities can be suggested to strengthen the respondents' social values through promotions of Philippine Traditional Games?

Methodology

Research Design

This This research utilized the descriptive-correlation method. The descriptive aspect involved observing and describing events to develop theories that could explain these observations. The correlation aspect measured the relationship between two or more variables, indicating how one variable may predict another. This approach was appropriate for assessing the significance of social values in pre-service physical education teachers' participation in Philippine traditional games, as it allowed for an exploration of both the descriptive and relational aspects of the study variables.

The study was anchored on the situated learning theory by Jean Lave and Etienne Wenger, which posits that knowledge is embedded in the context, activity, and culture in which it is learned. This theory, influenced by Lev Vygotsky's sociocultural theory, emphasizes the role of social interaction in cognitive development. Vygotsky argued that community plays a central role in the process of "making meaning," and sociocultural theory views human development as a socially mediated process. Children acquire cultural values, beliefs, and problem-solving strategies through collaborative dialogues with more knowledgeable members of society (Vygotsky, 1978). Situated learning theory suggests that learning occurs in real-life contexts, making it relevant to this study, which examines how traditional games, rooted in Filipino culture, can influence the social values of pre-service physical education teachers.

Respondents

The subjects of this research comprised 50 students enrolled in the Bachelor of Physical Education program at Batangas State University JPLPC-Malvar Campus for the academic year 2021-2022. These students served as the respondents of the study. The total population of the program was 65 students, and the sample size of 50 respondents was determined using the Raosoft Digital Calculator, with a five percent margin of error.

Data Gathering Tool

The researchers formulated a questionnaire to serve as the study's main instrument. This researcher-made questionnaire was divided into three parts:

Profile of Respondents: This section collected data on the respondents' sex, age, type of residence, and socio-economic status. The socio-economic status was categorized using the 2012 Family Income and Expenditure Survey (FIES) bracketing by the Philippine Statistics Authority.

Social Values: The second part assessed the social values of the respondents using dimensions of community, well-being, sustainability, and diversity, based on Schwartz's (2018) Values and Subjective Well-Being framework. The reliability and validity of the instrument were tested prior to administration.

Perceived Importance of Social Values: This section evaluated how respondents perceived the importance of social values when engaging in Philippine traditional games, using a Likert scale with the following interpretations:

3.25 - 4.00: Strongly Agree/Highly Important
2.50 - 3.24: Agree/Important
1.75 - 2.49: Disagree/Not Important
1.00 - 1.74: Strongly Disagree/Not Important

Data Collection Procedure and Treatment

Following the approval of the research title, the researchers gathered related literature to conceptualize, analyze, and formulate their ideas for the study. The questionnaire was developed with the assistance of an adviser and was reviewed for validity and reliability by consulting English language instructors for grammar and mathematics professors for statistical considerations.

The researchers sought permission from the Program Chairperson of Batangas State University JPLPC-Malvar to collect data from the respondents. The questionnaire was personally distributed and retrieved by the researchers, ensuring confidentiality of responses. After data collection, the responses were tallied, tabulated, analyzed, and interpreted to arrive at the study's results and recommendations.

Results

This structured approach, grounded in robust theoretical frameworks and meticulous methodological rigor, aimed to provide valuable insights into the role of Philippine traditional games in fostering social values among pre-service physical education teachers.

This chapter primarily deals with the research problems and covers the presentation, analysis and interpretation of the quantitative data gathered in the investigation. To give an in-depth analysis and interpretation, the data are arranged thematically and sequentially resembling the presentation of specific problems posed at the beginning of the study.

1. Profile

In line with the statement of the problem specified in the study, the researchers first sought the respondents' profile. It includes sex, type of residence and socio-economic status which would serve as the groundwork of the succeeding undertakings.

1.1. Sex

The first variable under the respondents' profile is sex. Looking after this variable was deemed significant for this would serve as an input for the correlation analysis. This variable is presented through frequency and percentage distribution revealed at Table 1.

Table 1 Distribution of the Respondents' Profile in Terms of Sex

Sex	Frequency	Percentage
Male	14	28
Female	36	72
Total	**50**	**100**

The table exposes that majority of the respondents were female. Out of the total sample of 50, there were 14 or 28% male and 36 or 72% female. Greater number of female respondents is revealed. This numerical disparity can be attributed to the fact that females tend to engage themselves more in Philippine traditional games.

1.2. Age

The second profile variable sought is age which is categorized as to ages 18 to 19 and 20 to 21. The profile of the respondents in terms of age was determined and interpreted using frequency and percentage revealed at Table 2.

Table 2 Distribution of the Respondents' Profile in Terms of Age

Age	Frequency	Percentage
18 – 19	26	52
20 – 21	24	48
Total	**50**	**100**

This tables indicates the respondent's age between 18- 19 and 20-21. Age between 18-19 has 26 with a 52 %, while 20-21 has 24 with a 48 % with the total number of 50 respondents.

1.3. Type of Residence

The third profile variable sought is type of residence which is categorized as to rural and urban. The profile of the respondents in terms of type of residence was determined and interpreted using frequency and percentage revealed at Table 3.

Table 3 Distribution of the Respondents' Profile in Terms of Type of Residence

Type of Residence	Frequency	Percentage
Rural	17	34
Urban	33	66
Total	**50**	**100**

This table shows that the respondent's type of residence in rural has a 17 frequency with a percentage of 34% while the urban has 33 frequencies with a percentage of 66% with a total of 50. Most of the respondents reside in urban area.

1.4. Socio-economic Status

The fourth profile variable determined is socio-economic status which is categorized as to middle, lower middle, lower middle but not poor and poor. The profile of the respondents in terms of socio-economic status was determined and interpreted using frequency and percentage revealed at Table 4.

Table 4 Distribution of the Respondents' Profile in Terms of Socio-economic Status

Socio-economic Status	Frequency	Percentage
Middle	12	24
Lower Middle	5	10
Lower Middle but not Poor	14	28
Poor	19	38

This table categorizes the respondent's profile in terms of socio-economic status with the highest frequency of 19 having a percentage of 38% is the poor, the second to the highest with a 14-frequency having a percentage of 28 % is the lower but not poor, next is with a frequency of 12 having a 24% is the middle, lastly having the lowest frequency of 5 having a percentage of 10% is the lower middle.

2. Social Values

This part of the study determined the respondents' social values in terms of community, well-being, sustainability and diversity. These are found on the succeeding tables.

2.1 Community

Table 5 presents the respondents' perceived importance of social values in terms of community. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 5 Community

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. I keep my word and actuate all my promises	3.70	0.46	Highly Important
2. I respect all people that surrounds me	3.90	0.30	Highly Important
3. I respect the rights of other people	3.96	0.18	Highly Important
4. I listen to any concerns	3.85	0.36	Highly Important
5. I can make up things easily and think of new things	3.61	0.49	Highly Important
Overall	**3.81**	**0.36**	**Highly Important**

As the result from the analysis indicates that the highest mean of 3.96 collected from the respondents is "I respect the rights of the other people" while the lowest mean of 3.61 is "I can make up things easily and think of new things.

2.2 Well-being

Table 6 presents the respondents' perceived importance of social values in terms of well-being. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 6 Well-being

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. I am doing good or giving aid to others, rather than making profit	3.70	0.48	Highly Important
2. I promote self-confidence, initiative, perseverance and life satisfaction	3.64	0.52	Highly Important
3. I maintain a happy and healthy family life as well as a career	3.76	0.47	Highly Important
4. I get over the idea that everyone needs to like you	3.61	0.70	Highly Important
5. I managed to change in belief or behavior in order to fit in with a group	3.54	0.77	Highly Important
Overall	**3.65**	**0.59**	**Highly Important**

The result of the research represents that the highest mean of 3.76 gathered from the respondents is "I maintain a happy and healthy family life as well as a career while the lowest mean of 3.54 is "I managed to change in belief or behavior in order to fit in with a group."

2.3 Sustainability

Table 7 presents the respondents' perceived importance of social values in terms of sustainability. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 7 Sustainability

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. I think of other people before taking actions	3.80	0.42	Highly Important
2. I care more about my welfare than other people	3.32	0.87	Important
3. I become independent and confident	3.55	0.60	Highly Important
4. I think first of the things I will do to not hurt other people	3.75	0.45	Highly Important
5. I always believe in myself that I could do something successfully	3.76	0.43	Highly Important
Overall	**3.64**	**0.55**	**Highly Important**

Table 7 presents the respondents social values in terms of sustainability. This shows that the statement "I think of other people before taking actions." received the highest mean of 3.80 with a descriptive interpretation of highly manifested and the lowest standard deviation of 0.42.

2.4 Diversity

Table 8 presents the respondents' perceived importance of social values in terms of diversity. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 8 Diversity

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. I do not depend on other people	3.43	0.68	Important
2. I am responsible in every action that I take	3.79	0.41	Highly Important
3. I always follow every rule and regulation	3.68	0.47	Highly Important
4. I have self-control in doing other things	3.71	0.46	Highly Important
5. I love the things I enjoyed doing	3.88	0.33	Highly Important
Overall	**3.70**	**0.47**	**Highly Important**

Table 8 reveals the respondents' social values in terms of diversity. This shows that the statement "I loved the things I enjoyed doing." received the highest mean of 3.88 with a descriptive interpretation of highly manifested and the lowest standard deviation of 0.33.

3. Relationship between the Respondents' Profile and their Perceived Importance of Social Values

Table 9 presents the relationship between the respondents' profile and their perceived importance of social values when engaging in Philippine Traditional games. The correlation of the variables was tested using the Chi-square formula.

Table 9 Relationship between Profile and Perceived Importance of Social Values

Variables	Computed x2	p Value	Decision (Ho)	Verbal Interpretation
Sex and Perceived Importance of Social Values	19.387	0.000	Reject	Significant
Age and Perceived Importance of Social Values	0.723	0.868	Fail to Reject	Not Significant
Type of Residence and Perceived Importance of Social Values	8.924	0.030	Reject	Significant
Socio-economic Status and Perceived Importance of Social Values	96.915	0.000	Reject	Significant

The table shows that when the profile of the respondents in terms of sex was correlated to the perceived importance of social values, the computed Chi‑Square value is 19.387. Since the associated p value is very small 0.000, the null hypothesis is rejected therefore confirming that significant relationship exists between sex and the perceived importance of social values.

The second variable correlated with perceived importance of social values is the respondents' age. The computed Chi‑Square value is 0.723 with its p value of 0.868. The null

hypothesis is failed to reject confirming that there exists no significant relationship between respondents' age and perceived importance of social values.

The third variable correlated with perceived importance of social values is the respondents' type of residences. The computed Chi-Square value is 8.924 with its p value of 0.030. The null hypothesis is rejected confirming that there exists significant relationship between respondents' type of residences and perceived importance of social values.

The last variable correlated with perceived importance of social values is the respondents' socio-economic status. The computed Chi-Square value is 96.915 with its very small p value of 0.000 which rejects null hypothesis. This confirms that significant relationship exists between the respondents' socioeconomic status and the perceived importance of social values.

4. Activities that may be suggested to strengthen the respondents' social values through promotions of Philippine Traditional Games

To further reinforce and nurture the social values of Community, Diversity, Well-being, and Sustainability among the respondents, several initiatives are recommended, each aiming to promote Philippine traditional games.

Seminars are designed to allow students to explore and reconnect with Philippine traditional games, highlighting their critical role in fostering sustainability and peace. These seminars will debate predetermined topics, emphasizing the importance of traditional games. By understanding the seminar's target audience and objectives, organizers can create an agenda that maximizes the benefits for participants. The primary goal is to improve knowledge and forge meaningful links between the games and the students' everyday lives.

Team-building activities are more than just routine intramurals or lectures. These activities encourage students to step out of their comfort zones, enhance morale, and develop communication, leadership, and teamwork skills. Utilizing "Larong Pinoy," a platform that engages students through traditional Filipino games, these activities create a fun, community-driven atmosphere. By participating in these games, students share personal experiences and insights, fostering intimate bonds and enhancing their overall engagement.

Open forums aim to bring young people together to discuss real-world challenges they face in their communities. These forums provide a secure and open space for adolescents to reflect on and share their daily life issues. While observing the decision-making process and participating in discussions, participants are encouraged to express their views. Properly conducted, open forums can be a powerful tool for community engagement, though it is essential to manage them effectively to avoid disorder.

Sports festivals (Sportsfest) are another initiative designed to get students talking about and engaging with traditional games. By reminiscing about their childhood and interacting with one another, students bring a youthful energy to the campus. These events encourage individual exploration and the seeking of advice from elders familiar with the games. Unlike conventional sports like basketball or track racing, "Larong Pinoy" offers a unique and enjoyable experience. These child-like fun activities foster teamwork, cooperation, and discipline without the risk of bodily harm or emotional distress. The Sportsfest will not only provide entertainment but also promote the rich cultural heritage of Philippine traditional games among the students.

These activities collectively aim to promote the rich heritage of Philippine traditional games, thereby enhancing students' social values and fostering a deeper connection with their cultural roots.

Discussions

Based Based on the study's findings, several significant conclusions can be drawn, supported by the analysis and interpretation of the quantitative data and related literature. The study reveals that the majority of respondents are female, with a preponderance of individuals aged 18-19. Additionally, most respondents reside in urban areas and belong to lower-income brackets. These demographic insights provide a foundational context for understanding the respondents' perceptions of social values.

The research indicates that the four dimensions of social values— Community, Diversity, Well- being, and Sustainability— are highly important to the respondents. For instance, in terms of community values, respondents rated statements like "I respect the rights of other people" (mean = 3.96) and "I listen to any concerns" (mean = 3.85) as highly important, reflecting the significance of respect and active listening in their social interactions (Table 5). This aligns with Vygotsky's sociocultural theory, which emphasizes the critical role of social interaction in cognitive development and the shaping of cultural values (Vygotsky, 1978).

In the realm of well-being, respondents highly valued maintaining a happy and healthy family life (mean = 3.76) and promoting self- confidence and life satisfaction (mean = 3.64) (Table 6). This underscores the importance of emotional and psychological well-being in their lives, consistent with literature suggesting that well- being is integral to holistic health and productivity (Dhanabhakyam, 2023).

Regarding sustainability, the study highlights those respondents consider it highly important to think of others before taking actions (mean = 3.80) and believe in their ability to succeed (mean = 3.76) (Table 7). These findings are supported by Lave and Wenger's situated learning theory, which posits that knowledge and skills are most effectively acquired within meaningful contexts (Lave & Wenger, 1991).

In terms of diversity, respondents expressed strong self- reliance and responsibility (mean = 3.79) and a high degree of self- control (mean = 3.71) (Table 8). This reflects a commitment to personal integrity and discipline, which are crucial for navigating diverse social environments (Nozomu, 2022).

The study also examined the relationship between respondents' demographic profiles and their perceived importance of social values. Significant relationships were found between sex (χ^2 = 19.387, p = 0.000), type of residence (χ^2 = 8.924, p = 0.030), socio-economic status (χ^2 = 96.915, p = 0.000), and the perceived importance of social values (Table 9). These findings suggest that demographic factors influence how individuals value social concepts, highlighting the need for culturally and contextually relevant educational initiatives.

To reinforce and nurture these social values, the study recommends initiatives such as seminars, team- building activities, open forums, and sports festivals centered around Philippine traditional games. These activities provide practical, contextually rich environments for respondents to engage with and embody social values, enhancing their social and cognitive development in alignment with the theoretical framework (Lave & Wenger, 1991; Vygotsky, 1978).

The study contributes valuable new knowledge to the field of physical education and cultural preservation, particularly regarding the role of Philippine traditional games in fostering social values. By promoting these games, educational curricula and community activities can help preserve cultural heritage, enhance social cohesion, and promote holistic education. These initiatives can be particularly beneficial in urban areas, where rapid modernization and diverse populations often lead to social fragmentation (Joseph, 2023).

Moreover, the research highlights those traditional games are effective in promoting physical activity, essential for maintaining health and well-being. This aligns with the literature

suggesting that physical activity is crucial for overall health and reduces stress levels (Dennys et al., 2023).

In conclusion, this study provides a compelling case for the continued promotion and integration of Philippine traditional games into various aspects of societal development. By recognizing and harnessing their value, educators, policymakers, and community leaders can foster more inclusive, healthy, and culturally rich communities, ensuring that these valuable cultural practices are preserved and appreciated by future generations (Dhani et al., 2022).

Conclusion and suggestions

Conclusion reveal that majority of respondents are residing in urban areas, and belong to lower-income brackets. Community, diversity, well-being, and sustainability were rated as highly important social values. Significant relationships were found between respondents' sex, type of residence, socio-economic status, and their perceived importance of social values. The study highlights the potential of traditional games to foster essential social values and recommends activities such as seminars, team-building exercises, open forums, and sports festivals to enhance these values. These findings emphasize the need for integrating traditional games in physical education curricula to preserve cultural heritage and promote social development, particularly in a post-pandemic educational landscape.

The suggestions for study contributes valuable new knowledge to the field of physical education and cultural preservation, particularly regarding the role of Philippine traditional games in fostering social values. By promoting these games, educational curricula and community activities can help preserve cultural heritage, enhance social cohesion, and promote holistic education. These initiatives can be particularly beneficial in urban areas. Moreover games are effective in promoting physical activity, essential for maintaining health and well-being. In conclusion, this study provides a compelling case for the continued promotion and integration of Philippine traditional games into various aspects of societal development. By recognizing and harnessing their value, educators, policymakers, and community leaders can foster more inclusive, healthy.

New knowledge and the effects on society and communities

The findings from this study contribute valuable new knowledge to the field of physical education and cultural preservation, particularly concerning the role of Philippine traditional games in fostering social values. This new understanding can significantly influence society and communities in several ways. Firstly, the study underscores the importance of Philippine traditional games in promoting cultural heritage. By highlighting the critical role these games play in fostering social values, the research provides a strong argument for their integration into educational curricula and community activities. This increased awareness can lead to more concerted efforts to preserve and revive traditional games, ensuring that they remain a vibrant part of the cultural landscape for future generations.

Secondly, the research reveals that traditional games are effective in promoting values such as community, well-being, sustainability, and diversity. These values are crucial for fostering social cohesion and harmony. By engaging in traditional games, individuals can develop a stronger sense of belonging and mutual respect, which can help bridge social divides and build more inclusive communities. This can be particularly beneficial in urban areas, where rapid modernization and diverse populations often lead to social fragmentation.

Thirdly, the study's findings align with the theoretical frameworks of Vygotsky's sociocultural theory and Lave and Wenger's situated learning theory, which emphasize the importance of social interaction and contextual learning. By incorporating traditional games into the educational system, educators can provide a more holistic approach to learning that

integrates physical, cognitive, and social development. This approach can enhance students' overall educational experience, making learning more engaging and relevant to their cultural context.

Furthermore, the research highlights that a significant proportion of the respondents come from lower-income brackets and urban areas. By promoting traditional games, which are often low-cost and easily accessible, communities can provide meaningful recreational activities for marginalized groups. This can help level the playing field, offering opportunities for all individuals, regardless of their socio-economic status, to participate in and benefit from these cultural practices.

Engagement in traditional games promotes physical activity, which is essential for maintaining health and well-being. The study's findings that well-being is a highly valued social aspect among respondents indicate that traditional games can be an effective tool for promoting healthy lifestyles. Communities that actively engage in traditional games can experience improved physical health outcomes, reduced stress levels, and enhanced mental health, contributing to overall community well-being.

Additionally, traditional games often require participants to develop various skills, including teamwork, strategic thinking, and problem-solving. By engaging in these activities, individuals can cultivate these skills in a natural and enjoyable context. These skills are not only beneficial for personal development but also valuable in professional and social settings, thus contributing to the overall development of individuals within the community.

The study provides empirical evidence that can be used to advocate for policy changes that support the inclusion of traditional games in educational and community programs. Policymakers can leverage these findings to develop initiatives that promote cultural heritage and social values. This can lead to the creation of policies that support cultural education, funding for traditional game events, and the integration of these activities into public health and community development programs.

In conclusion, the new knowledge gained from this study has the potential to significantly impact society and communities by enhancing cultural awareness, strengthening social cohesion, promoting holistic education, empowering marginalized groups, improving community health and well-being, and developing lifelong skills. By recognizing and harnessing the value of Philippine traditional games, educators, policymakers, and community leaders can foster more inclusive, healthy, and culturally rich communities. The study's findings provide a compelling case for the continued promotion and integration of traditional games into various aspects of societal development, ensuring that these valuable cultural practices are preserved and appreciated by future generations.

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Sociological Imagination and Volunteerism of Teacher Education Students at One State University in Batangas

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Abstract

The study aimed to determine significant relationships between the level of sociological imagination and volunteerism. Using a descriptive-correlation research method, it involved 161 teacher education students from Batangas State University JPLPC-Malvar during the academic year 2021-2022. A researcher-made questionnaire was utilized to gather the needed data. Results revealed that respondents' sociological imagination is significantly associated with volunteerism. It suggests that as students' sociological imagination grows, so does their willingness to volunteer. Similarly, it was found that other sociological imagination factors and volunteerism have a strong association. It means that as the sociological imagination of education students grows, so does their readiness to volunteer.

Introduction

Since the Taal volcanic eruption, several organizations have risen to support Batangueños, playing significant roles in relief efforts. Volunteer groups became active, reaching out to families in need. People from various places united with a common goal, and for almost a month, evacuees relied on the efforts of these modern-day heroes. The community deeply appreciated every single effort.

However, challenges are inevitable. After thirty days of preventing people from returning home, the global pandemic emerged, locking down nearly eight billion people worldwide. Despite restrictions, volunteers were encouraged to help address this global crisis. In response, Filipinos demonstrated one of their most valued customs: bayanihan. This spirit was evident not only in assisting Taal volcano victims but also during the devastation caused by strong typhoons and the COVID-19 enhanced community quarantine (Agaton & Cueto, 2021).

Bayanihan is derived from the word bayan, signifying a sense of communal unity or collaborative effort to achieve a shared objective. While bayanihan in its original form is no longer widely practiced, various forms of communal unity continue to exist (Soriano & Lim, 2016).

The study by Mullan et al. (2021) found a decline in volunteer recruitment, particularly in high-income countries. Similarly, in Malaysia, declining student involvement in volunteer activities has become a concern, with low participation among students leading to the dominance of elderly and retirees in volunteer groups (Normah & Lukmah, 2020). These studies indicate that the shortage of volunteers is not confined to specific countries but is a global issue.

In the Philippines, as in other countries, most volunteers belong to the late adulthood bracket. Despite this, they are encouraged to participate in social and community work to enhance their coping strategies and quality of life (Palmes et al., 2021). However, Kinyua (2023) revealed that volunteering Filipino college students no longer see a beneficial relationship between prior volunteer experience and future aspirations to engage in community service.

There is limited involvement among Filipino college students in volunteer work, but those in higher education institutions tend to be more involved than their peers who are not enrolled (Garcia, 2022). Higher-year Filipino college students are more motivated to engage in social services due to 'personal growth,' which refers to the subjective experience of changes in behavior, thoughts, and feelings (Llenares & Deocaris, 2015).

Sociological imagination, a key concept in understanding broader social contexts, faces challenges in the current era of digital and transactional social data. Some people tend to be ahistorical, focusing solely on "now casting" (Uprichard, 2012). This restricts the development of a serious sociological imagination, which requires consideration of time, temporality, and their impact on shaping sociological perspectives.

Volunteerism is vital for fostering communal support, especially during challenging times. Researchers are interested in understanding how this activity benefits society and broadens individuals' perspectives. In an age where individualism is on the rise, integrating sociological imagination into education may encourage greater student involvement in volunteer work. The challenge lies in guiding students on which volunteer groups to join and helping them view global problems from a broader sociological perspective.

Theoretical Framework

The researchers reviewed different concepts of sociological imagination and volunteerism. These concepts are as follows:

Mills (2000) believed that an individual could understand the sizeable historical scene in terms of its meaning for the inner life and the external career of various individuals by sociological imagination. He felt that society requires change and that change would come through those who knew and could apply it correctly. He felt that critical thinking was the mean of obtaining this crucial knowledge, and utilizing this thinking would lead to what he called the sociological imagination. This describes the type of insight offered by the discipline of sociology.

Meanwhile, Wilson (2012) defines volunteerism as any activity in which time is given freely to benefit another person, group, or cause. It is the act or practice of volunteering in community service. It is part of a cluster of helping behaviors, entailing more commitment than spontaneous assistance but narrower in scope than the care provided to family and friends. Volunteerism is voluntary and means it is deliberate service to others over time and without compensation. Also, a volunteer is a person who freely chooses to help and has no expectation of pay or other compensation. The volunteer behavior must include service work. Volunteer service is only service if it benefits others who want help.

According to the Gwanshak & Gwanshak (2023), there are six types or categories of volunteerism which are mainly: formal volunteering, non-formal volunteering, volunteering in governance, social action volunteering, project-based volunteering, and gap year volunteering.

In this research, the concept of sociological imagination were synthesized with the various forms of volunteerism to create a theoretical framework. This framework explored how critical thinking and the ability to understand societal changes influence individuals' engagement in volunteer activities. By applying this theoretical framework, the study understood the respondents' volunteerism and how these activities reflect broader social dynamics.

Objectives

This study determined the relationship of sociological imagination to volunteerism involvement of teacher education students at Batangas State University JPLPC-Malvar.

Specifically, it sought to answer the following questions:

1. How do the following sociological imagination factors be described in terms of:
    1.1 Historical;
    1.2 Cultural;
    1.3 Structural; and
    1.4 Critical?

2. How may the respondents' volunteerism be described in terms of:
    2.1 Formal volunteering;
    2.2 Non-formal volunteering;
    2.3 Volunteering in governance;
    2.4 Social action volunteering;
    2.5 Project-based volunteering; and
    2.6 Gap year volunteering?

3. Is there a significant relationship between the teacher education students' level of sociological imagination and volunteerism?

Methodology

Research Design

To determine respondents' sociological imagination and volunteerism, as well as the link between the two, the researchers employed the descriptive‒correlational method. The descriptive method was used since it focuses on the subject's facts and conditions. Because it examines connecting factors and variables, it is the most suited research method for this topic. It also gives a true picture of a subject during the study.

Respondents

The study respondents were the third‒ and fourth‒year teacher education students at Batangas State University JPLPC-Malvar during the academic year 2021-2022. The mentioned respondents were chosen for their active involvement in different sociological environments inside and outside of the said college. There is a total of 275 students in the department. The researchers used the G*Power formula to get the sample size which is 161.

Data Gathering Tool

Researcher-made questionnaires are divided into two parts, which are the respondents' sociological imagination, and volunteerism. These were used to generate data on the relationship of sociological imagination and volunteerism of the respondents. Meanwhile, volunteerism pertains to the involvement of the teacher education students in types of volunteerism that includes: formal, non‒formal, social action, project‒based, gap‒year volunteering, and volunteering in governance.

The researchers submitted the questionnaire to the thesis adviser and other panel members for additional refining and finalization to confirm its accuracy. The researchers also requested content validation done by the Head of Research and Development at Batangas State University JPLPC-Malvar.

Then, it was given to 35 students who do not belong to the selected respondents as a pilot test to ensure the study instrument's dependability. If the computed Cronbach Alpha is greater than 0.70, it would affirm that the questionnaire is sufficiently reliable. In respondents by groups in their respective field of specialization. Finally, the instrument was approved for administration to the respondents by the Dean of Graduate Studies and Applied Research at Laguna State Polytechnic University-San Pablo City Campus.

Data Collection Procedure and Treatment

A consent form was prepared to request permission from the teacher education students to participate in the study. They were informed about the study's requirements and assured of the confidentiality of the information collected from them as participants.

A communication letter was also drafted to seek approval from higher authorities to distribute the research instrument. After receiving approval, the researchers consulted the Dean and respondents to schedule the administration of the questionnaire. Additionally, the researchers personally distributed and collected the questionnaires.

The gathered data underwent a thorough process of checking, tallying, scoring, and analysis using mean, frequency count and percentage, standard deviation and Pearson Product Moment Correlation. By thoroughly analyzing the data, it empowered the researchers to inspire students pursuing teacher education to actively explore avenues for engagement in diverse volunteer initiatives. These projects facilitated the development of their sociological imagination, encompassing activities like rallying support for regions affected by typhoons, participating as volunteer online instructors, and disseminating social media content to motivate additional volunteers.

Results

The collected data were utilized to construct and present the following tables. These are designed to illustrate and clarify the outcomes in accordance with the objectives of this study. They provide a structured and easily understandable depiction of the findings.

I. Respondents' Sociological Imagination

Table 1 Respondents' Perception on Historical Sociological Imagination

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Relate present news events to what I have learned in history	3.61	Very High
2. See relationship with political, social, economic, scientific and cultural aspects of human society	3.56	Very High
3. Observe how people and societies behave through books and other sources	3.53	Very High
4. Analyze contemporary problems while recalling the issues of the past generations	3.53	Very High
5. Able to study about the formation of countries, families, and organizations, as well as how they progressed and changed over time	3.53	Very High
6. Think that we are molded as a civilization by either writing or passing along an oral tradition	3.48	High
7. Perceive our local history through architectures and buildings	3.45	High
8. Believe in the role of education in preserving our local customs and traditions	3.66	Very High
9. Relate what happened in the previous decades on the policies we obey now	3.55	Very High
10. Look on the effects of the recent news and its effect to our decision-making	3.59	Very High
Over-all	**3.55**	**Very High**

Legend: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)

Table 1 describes the respondents' historical sociological imagination. The statement which describes that the respondents believe in the role of education in preserving our local customs and traditions garnered the highest mean of 3.66. Meanwhile, perceiving our local history through architectures and buildings obtained the lowest mean of 3.45. This indicates that our education system has maintained its responsibilities to remind us about the past events and how people lived in old civilizations.

Ancient civilizations reveal why and how history has developed and evolved into what it is now. Account gives a sense of self-identity and serves as role model for good and responsible behavior, as well as teaching people how to learn from others' mistakes, according to Loewen (2018). It teaches how societies change and develop.

Preserving a community's past through its notable historic resources gives it its distinct personality. Historic preservation links the community's and people's roots (Tyler et al., 2018). It improves the quality of life in a town, making it more habitable. Additionally, it represents ideals, cultural identity, and historical continuity, which is why these should be preserved.

Thus, protecting patrimony might contribute to uniting the country by reminding individuals of their historical roots and identity.

Table 2 Respondents' Perception on Cultural Sociological Imagination

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Participate in art and cultural activities at school to improve my learning and valuable skills	3.25	High
2. Visit museums, cultural heritage and landscapes to understand more about our customs and traditions	3.21	High
3. Join in events such as festivals, fairs, and workshops that build social inclusion, community empowerment and social solidarity	3.33	High
4. Listen to stories of my grandparents to learn more about our community	3.59	Very High
5. Study our local language which are part of our traditional culture with the help of people in the community	3.52	Very High
6. See the connectedness between our festivities and the way we live our daily lives	3.51	Very High
7. Feel my responses to social issues like gender discrimination and racism are based on the values established by our society	3.47	High
8. Acknowledge the significance of our cultural heritage to our beliefs toward our society	3.64	Very High
9. Prefer songs and dances which pay tribute to my community's values and traditions	3.30	High
10. Believe in the influence of our way of living to our country's identity	3.56	Very High
Over-all	**3.44**	**High**

Legend: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)

Table 2 is the respondents' sociological imagination in terms of Cultural. The respondents highly acknowledge the significance of our cultural heritage to our beliefs toward our society with the highest mean of 3.64. Visit museums, cultural heritage and landscapes to understand more about our customs and traditions, on the other hand, got the lowest mean of 3.21. This suggests that the respondents place a high significance on maintaining the Filipino people's integrity and ensuring that their social legacy is preserved.

Sharing our cultural legacy, whatever it may be, is the most significant way to maintain it, and interns are integrating this into their daily lessons. Since teacher education students facilitate events about preserving cultural heritage and our past, they also create criteria to assess if it follows our established standards. A nation's cultural legacy and natural history are precious and distinctive. It's a persona that may be shared with the rest of the world.

In the study of Nocca (2017), the role of cultural heritage in sustainable development produces multidimensional benefits. Culture improves the quality of life and raises general well-being for both individuals and communities through improving learning and health, increasing tolerance, and providing opportunities to connect with others. It offers significant social and economic advantages.

Table 3 Respondents' Perception on Structural Sociological Imagination

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Aim for maintaining control and order of human societies by respecting our government	3.52	Very High
2. Take part to the transmission of culture through formal and informal education	3.50	Very High
3. Go to church to socialize with the people who have the same spiritual belief as mine	3.35	High
4. Share post online of news articles to inform my social community with current events	3.38	High
5. Encourage the people I know to choose working in our country to boost our local economy	3.35	High
6. Acknowledge the laws which guide us in being a good citizen	3.59	Very High
7. Listen to financial talks and lectures by a company or its representative	3.44	High
8. Involve myself in school tasks and activities to maintain relationship with my friends	3.60	Very High
9. Suggest plans and interventions to our youth council for its improvement	3.32	High
10. React on different social media posts about political issues and even for the upcoming elections	3.39	High
Over-all	**3.44**	**High**

Legend: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)

The respondents' structural sociological imagination is presented in Table 3. With the highest mean of 3.60, the respondents highly involve themselves in school tasks and activities to maintain relationship with friends. However, suggesting plans and interventions to our youth council for its improvement attained the lowest mean of 3.32. This indicates that the respondents are able to see things from a social perspective, including how people interact and influence one another.

In the department, students learn through participating in the acquisition of knowledge by receiving and processing information, solving problems, and communicating what they have learned. Students are engaged in many interactive activities even on their latter year levels. Every activity allows students to improve their understanding by applying ideas and expressing new information, and many of these exercises also give feedback to the instructor on the students' progress.

Examples of the activities which are given to the third-year and fourth-year teacher education students are: connecting skills and knowledge from multiple sources and experiences; understanding issues, and utilizing diverse and even opposing perspectives in the course Integrative Methods in Teaching Social Science Discipline in Basic Education; and describing the locations and patterns of human activity, exploring process an, patterns with a historical lens, and understanding the relationship of the natural environment to the other aspects of human behavior in Places and Landscape in a Changing World, some of their subjects.

Table 4 Respondents' Perception on Critical Sociological Imagination

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Ask why are things as they are upon seeing another perspective of the event	3.46	High
2. Evaluate who will be the beneficiaries of the status quo	3.40	High
3. Appreciate the sociological insights as it helps me understand war and peace experienced by states	3.52	Very High
4. Explain to my friends the current events in politics using different aspects of human societies	3.39	High
5. Expose fact-checked news and articles to help my countrymen access the truth	3.50	Very High
6. Question the reasons behind the action of a political leader towards the drug war	3.48	High
7. Analyze possibilities before making a decision which I think may affect our community	3.64	Very High
8. Evaluate our current laws and duties and think of alternatives to improve them	3.43	High
9. Read social theories or concepts and apply them on our present beliefs or philosophies	3.42	High
10. Think critically about our common behaviors and find that it affects social values	3.62	Very High
Over-all	**3.49**	**High**

Legend: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)

In table 4, respondents' perception on critical sociological imagination is illustrated. As shown in the table, obtaining the highest mean of 3.64, respondents analyze possibilities before making a decision which I think may affect our community. However, with the lowest mean of 3.39, they explain to my friends the current events in politics using different aspects of human societies. This means that the respondents are aware of the consequences of their action toward the society.

In the field study and internship, students are in their local community. They were taught in general and professional education subjects that do ourselves and others, everything we think, say, and do has implications. Because everything is interrelated, our activities ripple out like ripples on a pond, affecting others. Furthermore, we must remember that our acts are final and have undergone through reasoning.

Table 5 Summary of Respondents' Perception on Sociological Imagination

Sociological Imagination Factors	Mean	Verbal Interpretation
Historical	3.55	Very High
Cultural	3.44	High
Structural	3.44	High
Critical	3.49	High
Over-all	3.48	High

Legend: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)

Presented in Table 5 is the summary of Sociological Imagination Factors. As can be seen, Historical got the highest mean of 3.55 while both cultural and structural got the lowest mean of 3.44. This result reveals the consideration of the students in studying and understanding our shared past and common identity in how they perceive current events.

Knowledge and comprehension of historical events and patterns, particularly during the last century, allow us to appreciate present events greatly. We may better grasp the world we live in by studying history (Nisbet, 2017). It's critical to evaluate issues from many viewpoints to see the whole picture (Alhojailan, 2015), which will help us locate the source of the problem and devise a solution that considers the interests and sentiments of all parties involved.

II. Respondents' Volunteerism

Table 6 Respondents' Volunteerism in terms of Formal Volunteering

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Plan to be a hospital volunteer	2.94	High
2. Fundraise for charities that help typhoon victims	3.34	High
3. Give directions to our beneficiaries to claim donations	3.30	High
4. Involve myself in emergency services offered by government	3.12	High
5. Belong to a group that conducts activities and outing support in aged care facility	3.06	High
6. Perform my tasks voluntarily given by my organization whether inside or outside the campus	3.42	High
7. Posts updates about the events and development made by our volunteer group	3.23	High
8. Join in establishing booths to help funding our volunteer works	3.22	High
9. Follow our organization's policies and procedures to meet our goal	3.42	High
10. Relay message in our group chat for smooth communication	3.47	High
Over-all	**3.25**	**High**

Legend: 1.00-1.49 *(Very Low)*; 1.50-2.49 *(Low)*; 2.50-3.49 *(High)*; 3.50-4.00 *(Very High)*

Respondents' volunteerism in terms of Formal Volunteering is shown in Table 6. As depicted in the table, relaying message in group chat for smooth communication attained the highest mean of 3.47. On the other hand, planning to be a hospital volunteer obtained the lowest mean of 2.94. This finding strengthens the importance of effective group communication in to maintain cohesiveness in an organization.

Since the start of the COVID-19 pandemic, most students have relied on group chats and other social media platforms to communicate. This has also been the platform for them to set plans and perform their organizational duties.

Table 7 Respondents' Volunteerism in terms of Non-Formal Volunteering

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Clean-up the streets when I have free time	3.20	High
2. Teach kids arts and crafts during my summer break	3.24	High
3. Walk with a group around the neighborhood to keep it safe	3.27	High
4. Donate my personal allowance to the victims of typhoon	3.12	High
5. Coordinate the sale of merchandise for a self-help group	3.06	High
6. Volunteer to talk to my schoolmates who are experiencing stress or anxiety	3.52	Very High
7. Let myself contribute to the improvement of my department despite of not being a member of an organization	3.45	High
8. Do the household chores to help my family	3.85	Very High
9. Go to my classmates' home and share my knowledge	3.45	High
10. Help preparing my teachers' materials to make him/her feel comfortable	3.47	High
Over-all	3.36	High

Legend: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)

Table 7 describes the respondents' volunteerism in terms of non-formal volunteering. The statement which describes that doing household chores to help family got the highest mean of 3.85. On the other hand, coordinating the sale of merchandise for a self-help group garnered the lowest mean of 3.06. This outcome implies that the respondents perform their duties and tasks within their families as an expression of love and respect.

Students practice relational skills such as communicating properly, negotiating, cooperating, and working as a team by participating in chores (Tavakoly et al., 2018). Contributing to family life gives young people a sense of competence and responsibility. Even if they don't love the activity, if they persevere, they will experience the feeling of accomplishment that comes with completing a task. Sharing housework may also make it easier for families to work together and minimize stress. Chores are completed faster when children assist, and parents have less to do. This allows the family to spend more time together doing things they enjoy.

Table 8 Respondents' Volunteerism in terms of Volunteering in Governance

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Am elected for a specific position in a school or community organization	2.93	High
2. Attend regular meetings of our volunteer group	3.06	High
3. Take minutes of the meeting during the planning of voluntary activities	3.04	High
4. Compute the budget of our non-profit organization	2.76	High
5. Lead the activities during our volunteer works	2.94	High
6. Implement rules in our youth council	2.84	High
7. Record meetings and relay its important points to my co-members	2.99	High
8. Help in brainstorming to improve our youth organization	3.27	High
9. Look at other rules and regulation which may be utilized in our group's advocacies	3.20	High
10. Relate our goals in forming our organization's rules and regulations	3.24	High
Over-all	**3.03**	**High**

Legend*: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)*

Presented in Table 8 is the respondents' volunteerism in terms of volunteering in governance. Attaining the highest mean of 3.27, the respondents help in brainstorming to improve youth organization. Meanwhile, with the lowest mean of 2.76, they also compute the budget of non-profit organization. This result signifies that the respondents value the inputs which contribute to the development of their group or movement.

Youth volunteer groups provide leadership possibilities beyond their experiences inside the school (Smith & Sobel, 2014). Ideas are being considered in participating in these groups through forums, meetings, and discussions. Through these, they try to solve a problem or devise new plans to achieve their short and long-term goals.

Table 9 Respondents' Volunteerism in terms of Social Action Volunteering

Statements As individual, I….	Mean Score	Verbal Interpretation
1. campaign for environmentalism.	3.30	High
2. advocate for research/studies on a certain illness or disease.	3.18	High
3. attend rallies or protest to express my sentiments.	2.56	High
4. talk to people about social issues.	3.43	High
5. gather signatures to address the problem and implement the solutions in social concerns.	2.85	High
6. promote collaboration in other volunteer groups with same social advocacies.	3.14	High
7. attend inside the school meetings to be involved more in the steps to be made by our organization.	3.23	High
8. encourage my classmates to join our movement for social equality.	3.09	High
9. let my friends talk to express their ideas about our social movement.	3.52	Very High
10. integrate our organization's social agenda with some of my school activities.	3.22	High
Over-all	**3.15**	**High**

Legend*: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)*

Shown in Table 9 is the respondents' volunteerism in terms of social action volunteering. The statement, let my friends talk to express their ideas about our social movement got the highest mean of 3.52. However, attending rallies or protest to express sentiments garnered the lowest mean of 2.56. Thus, this means that the respondents spend their time in listening to their friends about their thoughts on the movement and activities of their organized group with sustained campaign in support of a social goal.

Aside from organizations inside the campus, teacher education students are also involved in various groups, especially those who aim for social change. Being involved is especially essential for college students because it teaches them how to participate in the community. Learned abilities make it simpler for them to interact with others and boost production and efficiency.

Table 10 Respondents' Volunteerism in terms of Project-based Volunteering

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Assist events to feed malnourished children or homeless people	3.20	High
2. Redesign the website for a non-profit organization	2.80	High
3. Write a marketing plan for a community group	2.76	High
4. Draft a communications plan for smooth flow of relaying messages in a volunteer group	2.91	High
5. Solicit advertisers for charitable activities in community	2.85	High
6. Prefer volunteer works which has clear time-frame	3.19	High
7. Enjoy student organization's projects that involve me for few months	3.24	High
8. Regularly volunteer for the annual events of my campus organization	2.99	High
9. Render my summer vacation in helping people in our community	3.01	High
10. Follow my schedule contribute in the improvement of our department	3.22	High
Over-all	**3.02**	**High**

Legend: 1.00-1.49 (Very Low); 1.50-2.49 (Low); 2.50-3.49 (High); 3.50-4.00 (Very High)

This table describes the respondents' volunteerism in terms of project- based volunteering. This table shows that the respondents prefer social works that follow clearly defined objectives to be delivered at specific time frames. With the highest mean of 3.24, respondents enjoy student organizations' projects that involve them for a few months. Meanwhile, Obtaining the lowest mean of 2.76, they also decided to write a marketing plan for a community group.

In these recently held elections, it was evident that the students exerted their utmost support to the political candidate and groups which they found the same goals. These groups existed and started a few months before the election. Many of them remained active after people cast their votes. Some of them took a rest and maybe resumed soon, with the involvement of some teacher education students who are available to volunteer for several months. Aside from political groups, many students joined Rotary Clubs of respective municipalities and cities. These provide humanitarian service, encourage high ethical standards in all vocations and help goodwill and peace.

Table 11 Respondents' Volunteerism in terms of Gap Year Volunteering

Statements As individual, I….	Mean Score	Verbal Interpretation
1. Make new friends and meet new people during my non-profit activities outside my hometown	3.34	High
2. Have cultural exposure and get out of my comfort zone through volunteering	3.31	High
3. Improve my socialization skills by exposing myself to different cultures	3.40	High
4. Immerse myself into the international culture and develop strong relationships with the community	3.27	High
5. Learn about environment, community, adventure by volunteer works	3.35	High
6. Find going to other places as part of volunteer works enjoying	3.22	High
7. Go too far rural areas to extend our organization's help	3.09	High
8. Involve myself in outreach programs in other places where there we meet new customs and traditions	3.27	High
9. Help organizing our itineraries before doing our volunteer events	3.17	High
10. See classmates interested in joining our volunteer organization which go to different barangays to help people	3.27	High
Over-all	**3.27**	**High**

Legend: 1.00-1.49 *(Very Low)*; 1.50-2.49 *(Low)*; 2.50-3.49 *(High)*; 3.50-4.00 *(Very High)*

Respondents' volunteerism in terms of gap year volunteering is presented in Table 11. As shown in the table, learning about environment, community, adventure by volunteer works attained the highest mean of 3. 35. On the other hand, going to rural areas to extend organization's help obtained the lowest mean of 3.09. The result reveals that students value the information and relationship about their people and place to easily perform their role in the organization.

Table 12 Summary of Respondents' Volunteerism

Volunteerism	Mean	Standard Deviation	Verbal Interpretation
Formal Volunteering	3.25	0.73	High
Non-Formal Volunteering	3.36	0.69	High
Volunteering in Governance	3.03	0.88	High
Social Action Volunteering	3.15	0.82	High
Project-based Volunteering	3.02	0.84	High
Gap Year Volunteering	3.27	0.75	High
Over-all	**3.18**	**0.47**	**High**

Legend: 1.00-1.49 *(Very Low)*; 1.50-2.49 *(Low)*; 2.50-3.49 *(High)*; 3.50-4.00 *(Very High)*

Table 12 presents the summary of the respondents' volunteerism. As can be seen, non-formal volunteering got the highest mean of 3.36. On the other hand, project-based volunteering garnered the lowest mean of 3.02. The findings affirm that the students usually do volunteer works through unfunded and unstructured settings in our society.

III. Correlation between Other Sociological Imagination Factors and Volunteerism of Third- and Fourth- Year Students

Table 13 Relationship between Other Sociological Imagination Factors and Volunteerism of Third- and Fourth- Year Students

Other Sociological Imagination Factors	Volunteerism Involvement					
3rd Year	**Formal**	**Non-formal**	**Governance**	**Social Action**	**Project-based**	**Gap Year**
Historical	.610**	.551**	.434**	.569**	.403**	.495**
Cultural	.736**	.720**	.631**	.637**	.526**	.597**
Structural	.651**	.706**	.633**	.688**	.609**	.628**
Critical	.529**	.549**	.420**	.605**	.427**	.539**
4th Year						
Historical	.610**	.551**	.434**	.569**	.403**	.495**
Cultural	.736**	.720**	.631**	.637**	.526**	.597**
Structural	.651**	.706**	.633**	.688**	.609**	.628**
Critical	.529**	.549**	.420**	.605**	.427**	.539**

**Correlation is significant at the 0.01 level (2-tailed).

The association between the students' other sociological imagination factors and volunteerism as to their year level is seen in Table 13. The acquired r-values for the third- and fourth-year students' other sociological imagination factors and volunteerism are shown in the table. Moreover, the analysis which generated the critical r-value for both third year and fourth year are all less than the level of significance equal to 0.01. In both cases, the decisions are the same, and it is not to accept the null hypothesis. Thus, it can be concluded that there a significant relationship between the two variables. This means that as the third- and fourth-year students' sociological imagination increases, so does their willingness to volunteer.

IV. Summary of the relationship between Sociological Imagination and Volunteerism

Table 14. Relationship between Sociological Imagination and Volunteerism

Predictors	Unstandardized Coefficients		Standardized Coefficients	t	Significance
	B	**Standard Error**	**Beta**		
Sociological Imagination Factors	.360	.116	.259	3.096	.002

Dependent Variable: Volunteerism

Discussions

This study examined various aspects of sociological imagination and volunteerism to explore the relationship between these variables and their potential implications. The findings reveal that respondents' perceptions of sociological imagination are influenced by historical factors. The concept of sociological imagination, as discussed by Fazio et al. (2021) , emphasizes the connection between individual experiences and broader structural and historical forces. This perspective allows individuals to understand how societal and cultural factors shape historical events and their own lives.

Historical perspectives are crucial for reconstructing the sociological imagination, as classical sociologists have done (Serpa & Ferreira, 2020). By examining the transformation of social thought within its historical context, we gain a deeper understanding of society's complexities. This aligns with the views of Habermas (1987) on the importance of historical reasoning in critical theory, where understanding the past is essential for social critique and transformation. Thus, historical factors significantly shape individuals' perception and understanding of sociological imagination.

On the other hand, non-formal volunteering had the highest mean score within the volunteerism domain, underscoring the students' strong inclination to assist others, regardless of personal relationships. This aligns with the social exchange theory proposed by Blau (1964), which suggests that social interactions, including volunteerism, are motivated by the expectation of mutual benefit, even if those benefits are intangible. The positive axiological perception of volunteering is influenced by social, personal, and professional motivations, as noted by Cívico-Ariza et al. (2020). This finding is further supported by the self-determination theory of Deci and Ryan & D Smith (2000) , which highlights how intrinsic motivation, such as a sense of altruism or personal satisfaction, drives volunteer behavior.

Non-profit organizations play a crucial role in environmental education through non-formal education practices, which aim to increase awareness, knowledge, skills, and actions related to environmental sustainability (Haigh, 2013) . This is consistent with Bandura & Walters' (1977) social learning theory, which emphasizes that people learn behaviors, including pro-environmental actions, by observing and modeling others, particularly within community-based and non-formal educational settings. The involvement of volunteers from diverse educational backgrounds requires specific management strategies, as indicated by theories of organizational behavior and human resource management (Meyer & Allen, 2001).

Moreover, statistical analysis revealed a significant positive relationship between sociological imagination and volunteerism among teacher education students. This suggests that as students' sociological imagination grows, their willingness to volunteer also increases. This finding is consistent with Mezirow's (2018) transformative learning theory, which posits that critical reflection on experiences can lead to a profound shift in worldview and behavior, including increased social responsibility and volunteerism.

Additionally, students who are willing to volunteer exhibit higher levels of empathy and altruism, indicating a connection between these psychological characteristics and the willingness to engage in volunteer activities (Rosenthal, 1965) . Furthermore, student volunteering is seen as a means of increasing competitiveness and employment prospects in the labor market, providing valuable work experience and enhancing students' integration into the workforce (Helyer & Lee, 2014).

Therefore, the development of sociological imagination and the willingness to volunteer are interconnected, with sociological education and experiences playing a significant role in fostering students' engagement in volunteer activities. This interconnection is supported

by theories of civic engagement and social capital, which suggest that educational practices that promote critical thinking and community involvement can strengthen social networks and collective efficacy (Putnam, 1994).

In summary, this study highlights the importance of sociological imagination in shaping students' attitudes toward volunteerism, with significant implications for educational practices and community engagement. The findings emphasize the need to provide students with meaningful experiences and opportunities for personal and professional development through volunteerism. By integrating diverse theoretical perspectives, this research underscores the complex interplay between historical, social, and psychological factors in influencing volunteer behavior.

Conclusion and suggestions

In conclusion, there is a significant relationship between the teacher education students' sociological imagination factors and volunteerism. This result reveals the consideration of the students in studying and understanding our shared past and common identity in how they perceive current events.

Based on the findings of the study and the conclusions drawn, the following recommendations are hereby offered:

The College of Teacher Education may provide opportunities among students to strengthen their sociological awareness and participation in volunteer work and valuable community services by integrating them into student outcomes and institutional graduate outcomes. Moreover, teachers are encouraged to inculcate the significance of volunteering in their students through learning activities in face-to-face or online media platforms that showcase our cultural heritage.

Students are encouraged to form organizations that encourage positive relationships and volunteerism by enabling them to do extension services like tutorials or social support to the people of local communities. Also, teacher education students may also provide opportunities for themselves to be involved in different volunteering projects that enhance their sociological imagination by calling for donations for typhoon-hit provinces, teaching as volunteer online tutor and sharing social media posts to encourage more volunteers. Lastly, future researchers may utilize this research work as basis in conducting similar studies.

New knowledge and the effects on society and communities

The findings of this study provided valuable insights into the complex relationship between social consciousness and volunteering among teacher education students. Notably, the findings show a significant and positive relationship between the level of sociological imagination and students' volunteerism. This study builds on the idea that as students enhance their sociological imagination, they become more willing to participate in volunteering. This new knowledge has wider implications for educational institutions and community organizations alike, as it suggests that efforts to cultivate sociological imagination among students can have a direct and positive impact on willingness to contribute to community and society positively.

Drawing upon the study's conclusions, several recommendations emerge. Firstly, the College of Teacher Education is encouraged to create opportunities for students to enhance their sociological awareness and involvement in volunteer work, aligning these initiatives with institutional graduate outcomes. Additionally, educators are encouraged to impart the value of

volunteering to their students through interactive learning activities, whether in traditional face-to-face settings or through online platforms that celebrate our cultural heritage.

Moreover, students themselves are encouraged to establish organizations promoting positive relationships and volunteerism, fostering opportunities for community outreach through services such as tutorials and social support for local residents. This proactive role in addressing the needs of local communities not only benefits society but also enriches the sociological imagination of the students. Furthermore, teacher education students should continue to explore diverse volunteer projects, including fundraising for disaster- stricken regions, volunteering as online tutors, and leveraging social media to inspire more individuals to join the volunteer cause. Lastly, this research serves as a valuable foundation for future studies exploring similar themes and providing insights to advance our understanding of the dynamic relationship between sociological imagination and volunteerism in education and society.

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07

Emotional Intelligence and Mathematical Resilience of Pre-service Teachers

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Abstract

The study investigated the relationship between emotional intelligence and mathematical resilience in pre-service teachers using descriptive-correlational quantitative research. The researchers used self-report questionnaires to collect data from 88 pre-service teachers at Batangas State University JPLPC-Malvar's College of Teacher Education Major in Mathematics. The questionnaires contained items that assessed EI as well as mathematical resilience. The study's findings indicate a positive relationship between EI and mathematical resilience. Pre-service teachers with higher EI scores were more likely to be resilient in mathematics, implying that higher levels of emotional intelligence can contribute to better performance. Pre-service teachers with higher levels of emotional intelligence were more likely to be resilient in mathematics, implying that higher levels of emotional intelligence can contribute to better outcomes in mathematical learning. Overall, the research emphasizes the significance of emotional intelligence in awareness of mathematical resilience among pre-service teachers. To improve mathematical resilience, pre-service teacher training programs should focus on developing emotional intelligence and promoting a positive attitude towards mathematics, according to the findings.

Keywords: Emotional intelligence, Mathematical resilience, Pre-service teachers

Introduction

Educators and parents alike are continually working to ensure the success of their students. As the world changes, so must our educational institutions. With new technologies, concepts, and legislation, K-12 education is frequently redesigned. Throughout the early twentieth century, when emotional intelligence emerged as a significant school of thought, learning became a key area of research in psychology.

Learning is now an important concept in many fields of psychology, including cognitive, educational, social, and developmental psychology (Osika et al. , 2022) . Psychologists investigate how learning occurs as well as how social, emotional, cultural, and biological factors impact learning. Emotions influence human cognitive functions such as perception, attention, learning, memory, reasoning, and problem-solving. Emotions may aid in the retrieval of information by enhancing encoding. Emotional experiences are frequent in nature and important, if not vital, in academic settings since emotions impact nearly every aspect of cognition. Tests, exams, assignments, and deadlines are all associated with a variety of emotional states such as displeasure, worry, and boredom. Even disciplines like mathematics have an emotional influence that impacts one's capacity to learn and recall.

Mathematical resilience and learning are significantly influenced by emotions. A multidisciplinary approach examines the relationship between emotions in numerical cognition, mathematics education, learning sciences, and affective sciences, as well as the processing of numerical and physical values, performance in learning algebra, problem-solving, and reasoning, attitudes toward learning technologies, and mathematics achievement (Aro) . It also addresses emotive and social topics, including identity and attitudes towards mathematics. Educators may improve the learning experience by working with folks who understand how emotional states connect with learning. In order to foster mathematical resilience, which enables students to continue studying, educators must recognize the emotional intelligence of their students.

Furthermore, emotional intelligence influences a student's approach to mathematics, emotions, and general self- regulation techniques. Emotional intelligence may have a substantial influence on our ability to perform in school, seek a meaningful job that offers us a sense of purpose, and maintain long- term relationships with friends and romantic partners (Cherry, 2022) . Students may feel a variety of emotions throughout the course of learning mathematics every day, depending on how that particular day goes. These may include happiness, frustration, pleasure, melancholy, and anxiety. Similar to other human characteristics, emotional intelligence comprises five components: self- awareness, self-regulation, self- motivation, social awareness, and social skills. The five components can be nurtured or inherited, depending on an individual's needs and preferences.

Student progress towards self- regulation is possible upon completion of the first component. Students who are aware of their own feelings are better able to control those feelings and the behaviors that go along with them. This could mean acknowledging challenging feelings and preventing or delaying any impulsive behaviors that could arise. There is more to true emotional awareness than simply being aware of one's own and other people's feelings. Additionally, students have to be ready to use this information in everyday conversations and relationships.

Students with great social skills can create meaningful interactions with others while also learning more about themselves. Emotional intelligence is the capacity to detect and comprehend other people's feelings, desires, intentions, and needs (Sajeta, 2021) . Increasing students' social awareness necessitates their opening their hearts, becoming more sensitive to others, and cultivating a mutually respectful environment. It teaches students to see beyond

outer appearances, build sympathetic connections with those around them, read between the lines, and cultivate an empathetic culture in any environment (Being, 2020). A student with strong emotional intelligence may be better at interacting with people than a student with low EI. EI can assist a child in forming relationships, communicating with others, and maintaining friendships. According to (Bradberry & Demaio, 2019), only approximately 36% of people have this skill. This is due in part to a lack of emotional vocabulary, which prevents people from adequately recognizing how they are feeling. Every unpleasant sensation is simply labeled "bad," and every pleasant feeling is called "good." However, individuals with high EQ can explicitly define their emotions, enabling them to cope with them most effectively.

On the other hand, the fear of mathematics emerges prior to the course of instruction, and if not addressed appropriately, it can severely impact children throughout adulthood. Anxiety produces severe unpleasant feelings and has been shown to have an influence on intellectual, studying, and learning outcomes (Yusof, 2016). Students can safeguard themselves from a number of mental health disorders, including depression and anxiety, by developing mathematical resilience (Santos-Mayo et al., 2022). Although mathematical resilience cannot solve students' issues, it can help them see beyond them, thrive in school, and handle academic stress better. If students are not as resilient as they would like to be, they can grow and acquire techniques to increase their mathematical resilience by focusing on the three emotional domains: Value, Struggle, and Growth.

The first point is that knowing mathematics is beneficial and necessary. Learners who believe in the future advantages of mastering mathematics will be more motivated to pursue mathematics despite the obstacles. The second point to mention is that mastering mathematics requires dedication and hard work. When faced with problems in studying mathematics, learners who have excellent resilience will respond that it requires more time and effort. Thus, students are obligated to pick themselves up and keep trying. The third aspect is self-assurance in one's ability to master arithmetic. Learners' confidence in their capacity to study and understand mathematics must surely foster positive attitudes and uncompromising answers (Rohkmah, 2019).

This study underlines the importance of emotional intelligence in students' mathematical resilience, as it is critical in the process of learning to be prepared to handle problems and learn optimally. The study aims to integrate emotional intelligence into the teaching of mathematics, where several programs have been designed to promote mathematical resilience by delivering the most up-to-date learning styles. However, few programs use Emotional Intelligence as an integral aspect of their mathematical curriculum. The purpose of this study was to establish the important association between pre-service teachers' emotional intelligence and mathematical resilience.

Theoretical Framework

Emotional Intelligence, or EQ as it is more often known, has been hailed as the key to success in life. Emotional intelligence (EI) is defined as a person's capacity to understand and manage their emotions (Cherry, 2022). Daniel Goldman, a Harvard PhD in psychology who co-founded Yale's Child Studies Center's Collaborative for Academic, Social, and Emotional Learning, expanded on Mayer's four branches of emotional intelligence. They are: nonverbally identifying emotions, using emotions to guide cognitive thinking, understanding the information emotions convey and the actions emotions generate, and regulating one's own emotions, which includes emotional self-awareness, self-regulation, social skills, empathy, and motivation (Helen & Babak, 2020).

The ability to sense and grasp emotions, as well as understand how one's own behaviors, moods, and the emotions of others, impact oneself, is referred to as self-awareness. It requires keeping track of emotions, recording different levels of emotional self-awareness, and correctly

recognizing emotions. Adaptability, coping with change, and conflict resolution are all instances of self-regulation. It also refers to defusing difficult or unpleasant situations, being aware of how one's actions affect others, and accepting responsibility for one's actions. This aspect of EI is concerned with the capacity to interact well with others. It requires communicating and engaging with people on a regular basis while being mindful of our own and others' emotions.

Social skills include active listening, vocal communication skills, nonverbal communication skills, leadership, and the ability to build relationships. Empathy is the ability to understand how others feel. This part of EI enables a person to appropriately respond to others depending on their emotions. It assists people in detecting power dynamics that present in all social relationships, but especially in job ones. Understanding power dynamics and how they affect feelings and behavior, as well as correctly identifying situations when power dynamics come into play, is essential for empathy. Motivation refers to intrinsic motivation when seen as a component of EI. Intrinsic motivation arises when a person is motivated by his or her own wants and aspirations rather than external incentives such as money, fame, or recognition. They are more inclined to set goals and take action. Such people are constantly looking for ways to grow and have a strong drive to achieve. They are more likely to be devoted and proactive as well.

Objectives

This study aims to determine pre-service teachers' emotional intelligence and mathematical resilience.

Specifically, the study accomplished the following objectives:

1. Determine pre-service teachers' level of emotional intelligence in the following competencies:

      1.1 Self-awareness

      1.2 Self-regulation

      1.3 Self-motivation

      1.4 Social Awareness

      1.5 Social skill

2. Measure respondents' extent of manifestation of mathematical resilience for the following affective dimensions:

      2.1 Value

      2.2 Struggle

      2.3 Growth

    3. Correlate pre-service teachers' emotional intelligence and mathematical resilience.

    4. Propose a course of action to enhance emotional intelligence and mathematical resilience.

Methodology

Research Design

The researchers used a descriptive- correlational methodology to investigate the strength of the association between pre- service teachers' emotional intelligence and mathematical resilience in support of the study. The goal of descriptive-correlational research is to provide a picture of the current state of affairs. It is also intended to uncover correlations between variables and forecast future occurrences based on current information. At least two variables must be assessed in correlational investigations. The variables are assessed, and then statistical analyses are performed to determine whether there is a link between them.

Respondents

The respondents are Mathematics majors at BSU Malvar Campus College of Teacher Education, with a total of 113 pre-service teachers, 88 of whom were selected using the Raosoft Calculator. Gender was not a barrier to participation. In this research project, either male or female respondents are possible. In order to provide a valid and trustworthy results, a sufficient number of respondents and an adequate sampling procedure were used. Batangas State University JPLPC- Malvar has 113 pre-service mathematics instructors. The sample size of respondents was computed using the Raosoft Digital Calculator with a margin of error of 5%, yielding a total of 88 respondents. The respondents were chosen using simple random sampling to achieve a proportional distribution of the sample size. For proper representation, the responses were divided into yearly groups.

Data Gathering Tool

The researchers utilized a researcher- made questionnaire as the data- gathering instrument. The questionnaire was split into two sections. The first section focused on the levels of emotional intelligence in relation to its five major parts with 5 item indicators each, while the second section examined the levels of mathematical resilience in relation to its three affective dimensions with 5 item statements each. This is given to pre-service teachers enrolled in the Bachelor of Secondary Education with a Major in Mathematics at the College of Teacher Education.

Cronbach alpha coefficient was computed to assess the internal consistency of the item statements regarding pre- service teachers' emotional intelligence, including its five learning competencies, and their extent of manifestation of mathematical resilience, including its three affective dimensions. The computed values of 0.972 for respondents' level of emotional intelligence and 0.972 for the extent of manifestation of mathematical resilience are greater than 0.70 affirming the questionnaire has an excellent reliability level.

The following scale range and corresponding verbal interpretation were applied:

Numerical Value	Mean Ranges	Interpretation
4	3.51 - 4.00	Very Good/ Highly Manifested
3	2.51 - 3.50	Good/ Manifested
2	1.51 - 2.50	Fair/ Slightly Manifested
1	1.00 - 1.50	Needs Improvement/ Least Manifested

Data Collection Procedure and Treatment

The researchers obtained permission to conduct the study from the College Dean of CTE at Batangas State University‑ The National Engineering JPLPC Malvar Campus. After obtaining permission, they distributed a questionnaire to the intended respondents.

Before enrolling participants in the study, the researchers obtained their voluntary and informed consent. Respondents were fully informed of the research's goals, procedures, potential risks and benefits, and their opportunity to withdraw at any time without penalty.

The questionnaire was assessed, and the findings were collated, totaled, and interpreted as the basis for answering each question. The researchers collected data by polling students and administering questionnaires to them. The respondents' privacy was respected by the researchers. The data was collected and maintained in a manner that preserves the confidentiality of the information provided by participants.

The researchers gave the questionnaires directly to the selected participants after determining how to collect data, developing relevant study questions, and making necessary changes. The questionnaires were completed and returned successfully. The researchers carried out their task with honesty and integrity. They presented their results honestly and did not fabricate or manipulate any data. The data was collated, counted, and statistically treated when the surveys were securely returned.

Results

The collected data were analyzed to create and demonstrate the tables below. These are intended to point out and clarify the findings in accordance with the study's objectives. They provide the findings in an organized and easily comprehensible manner.

1. The level of emotional intelligence of pre-service Teachers

　1.1 Self-awareness

Table 1 Level of Emotional Intelligence in terms of Self-awareness

Item Statements	M	SD	VI
1. I am aware of how my emotions influence my performance in Mathematics.	3.39	0.67	Good
2. In order to learn Mathematics, I am guided by my beliefs and ambitions.	3.25	0.65	Good
3. I am aware of my mathematical talents and weaknesses.	3.58	0.60	Very Good
4. I am introspective and attempt to learn by repeating the same actions again.	3.40	0.67	Good
5. I am open to honest comments, fresh viewpoints, lifelong learning, and self-improvement.	3.61	0.51	Very Good
Overall	**3.45**	**0.62**	**Good**

Table 1 shows the pre-service teachers' level of emotional intelligence in terms of self-awareness. This indicates that the respondents are receptive to candid feedback, new perspectives, continuous learning, and self‑ awareness indicators. It is their technique for understanding their own strengths and limitations. This suggests that respondents have a high level of self‑ awareness but lack sufficient direction in terms of understanding their values and goals in mathematics education.

It denotes that pre‑ service teachers have a high level of self‑ awareness, with students who possess this competency having strong emotional awareness, accurate self-evaluation, and self‑ confidence. According to Daniel Goleman, an author, psychologist, and scientific writer,

a student who lacks emotional skills, self-awareness, and the ability to control their own painful emotions cannot have empathy or productive connections. As a result, no matter how bright the student is, they will not get very far. Some students are said to be intellectually clever but socially and interpersonally unskilled. Success does not automatically accompany individuals with a high IQ.

1.2 Self-regulation

Table 2 Level of Emotional Intelligence in terms of Self-regulation

Item Statements	M	SD	VI
1. I think clearly and stay focused under pressure, even when the calculations are complicated	3.00	0.00	Good
2. I admit my own mistakes and mathematical errors	3.60	0.56	Very Good
3. I work on my mathematical activities with organization and meticulousness	3.15	0.69	Good
4. I handle many demands, shifting priorities, and abrupt adjustments with ease	2.95	0.68	Good
5. I entertain original solutions to problems	3.38	0.59	Good
Overall	**3.22**	**0.50**	**Good**

Table 2 shows emotional intelligence in terms of self-regulation. The respondents demonstrate strong emotional intelligence in the subject of mathematics instruction. This indicates that the respondents admit to making mistakes and arithmetic blunders.

This demonstrates that pre-service teachers have high self-regulation skills consistent with emotional intelligence. Self-regulation, according to Cuncic (2022), allows us to be more resilient and recover from failures while keeping calm under pressure. Self-regulation talents have been related to a number of positive health outcomes, as per researchers. These include increased stress tolerance, happiness, and overall well-being.

1.3 Self-motivation

Table 3 Level of Emotional Intelligence in terms of Self-motivation

Item Statements	M	SD	VI
1. I set challenging targets and take smart risks	3.19	0.79	Good
2. I am always learning to improve my mathematical performance	3.56	0.60	Very Good
3. I consider higher goals to discover my purpose	3.42	0.60	Good
4. I set greater ambitions for myself than what are necessary or expected of me	3.41	0.64	Good
5. I operate with the hope of success rather than fearing mathematics	3.39	0.63	Good
Overall	**3.39**	**0.65**	**Good**

Table 3 depicts emotional intelligence in terms of self-motivation. The respondents demonstrate strong emotional intelligence in the discipline of mathematics. This indicates that the respondents are always learning to enhance their mathematical proficiency.

Pre-service teachers may have a high level of self-motivation as a part of their emotional intelligence. According to Marsono et al. (2019), students have a natural motivation to attain high results when learning mathematics. This suggests that pre-service teachers are aiming for

greatness, which is consistent with their dedication to pursuing goals despite challenges and disappointments.

1.4 Social Awareness

Table 4 Level of Emotional Intelligence in terms of Social Awareness

Item Statements	M	SD	VI
1. I assist others in understanding their needs and opinions	3.34	0.62	Good
2. I gladly offer appropriate assistance to my classmates who struggle with mathematics	3.36	0.68	Good
3. I mentor, provide timely coaching, and assign projects that test and improve a person's mathematical skills	3.17	0.70	Good
4. I provide an atmosphere in which diverse individuals may thrive	3.16	0.70	Good
5. I read situations, organizational, and external realities involving Mathematics	3.18	0.73	Good
Overall	**3.24**	**0.70**	**Good**

Table 4 depicts emotional intelligence in the sphere of social awareness. The respondents demonstrate strong emotional intelligence in the subject of mathematics instruction. This indicates that the respondents are willing to assist their classmates who are struggling in Mathematics.

According to the Common Core State Standards for Mathematical Practice (The University of Texas Dana Center, 2020), students should solve real-world and mathematical problems by working effectively with peers, creating, communicating, and assessing ideas, and persevering despite challenges. This suggests that pre-service teachers should have empathy for other pupils' needs. They expand their horizons by engaging with other students and are able to comprehend their peers' emotional currents and relationships.

1.5 Social Skills

Table 5 Level of Emotional Intelligence in terms of Social Skills

Item Statements	M	SD	VI
1. I listen carefully, seek mutual understanding, and am warmly welcomed the sharing information about mathematics with my classmates	3.47	0.64	Good
2. I realize the importance of change and the removal of mathematical obstacles	3.31	0.68	Good
3. I search out mutually beneficial connections	3.32	0.67	Good
4. I promote a friendly, cooperative climate inside the classroom	3.45	0.62	Good
5. I model cooperative traits such as respect, helpfulness, and collaboration in our mathematics class	3.39	0.65	Good
Overall	**3.39**	**0.65**	**Good**

Table 5 shows the emotional intelligence level in terms of social skills. The respondents demonstrate strong emotional intelligence in the subject of mathematics instruction. This indicates that they listen well, seek mutual understanding, and are eager to share their mathematical knowledge with their peers.

Respondents recognized the need for change and for mathematical impediments to be removed from their learning process. According to Frederickson & Cline (2002) , who emphasized the interconnected nature of the subject, students who struggle with mathematics may appear to feel more confused and disempowered than those who struggle with other disciplines.

2. Extent of Manifestation of Mathematical Resilience of Pre-service teachers
2.1 Value

Table 6 Extent of Manifestation of Mathematical Resilience in terms of Value

Item Statements	M	SD	VI
As a pre-service teacher, I…			
1. Foster positive values and attitudes towards learning mathematics	3.76	0.43	Highly Manifested
2. Develop logical and critical thinking skills	3.59	0.49	Highly Manifested
3. Increase analytical thinking in solving math problems	3.58	0.54	Highly Manifested
4. See that there is no profession in the world that doesn't use mathematics	3.59	0.72	Highly Manifested
5. Appreciate the beauty of mathematical figures in the real world	3.77	0.42	Highly Manifested
Overall	**3.66**	**0.52**	**Highly Manifested**

Table 6 shows the extent to which mathematical resilience manifests itself in terms of value. The respondents demonstrated a high level of mathematical resilience in the field of learning and teaching. This demonstrates that respondents value the beauty of mathematical figures in the real world.

Mathematically resilient students think that mathematics is an essential topic that should be studied. Analytical reasoning is necessary for improving mathematical skills, and vice versa. Other math concepts, such as performing computations and comprehending formulae and definitions, cannot be taught until analytical thinking is present. Simultaneously, mathematics as a field has the potential to dramatically develop analytical skills. Rather than learning formulae by repetition and rote memory, this method allows pupils to comprehend and trace the phases that underpin a concept (Kuma et al., 2022).

2.2 Struggle

Table 7 Extent of Manifestation of Mathematical Resilience in terms of Struggle

Item Statements	M	SD	VI
As a pre-service teacher, I…			
1. Improve mathematical abilities by focusing more on any weak points	3.66	0.50	Highly Manifested
2. Memorize formulas to solve math problems	3.45	0.59	Moderately Manifested
3. Correct computational errors and comprehend specific mathematical relationships	3.50	0.61	Moderately Manifested
4. Apply the steps to solve math problems	3.68	0.49	Highly Manifested
5. Sense the problem at hand and persevere to solve it by employing logic	3.49	0.55	Moderately Manifested
Overall	**3.56**	**0.55**	**Highly Manifested**

Table 7 shows the extent to which mathematical resilience manifests itself in terms of difficulties. The respondents demonstrated a high level of mathematical resilience in terms of learning and teaching processes. This means that when solving arithmetic problems, students should take steps.

This suggests that pre-service teachers have a high level of mathematical resilience in the face of hardship. Mathematically resilient students recognize that patience is essential to making progress in mathematical studies. They recognize that when studying mathematics, everyone faces hurdles and problems, and that errors are a natural part of the process, and that one must persevere and learn not to succumb to the bad feelings that come with learning anything new (Mitchell et al., 2019).

2.3 Growth

Table 8 Extent of Manifestation of Mathematical Resilience in terms of Growth

Item Statements	M	SD	VI
As a pre-service teacher, I…			
1. Face math challenges and learn different patterns of coping	3.44	0.58	Moderately Manifested
2. Support one's feelings of risk, potential failure, and making mistakes	3.55	0.59	Highly Manifested
3. Enthusiastically show off skills in math class	3.28	0.59	Moderately Manifested
4. Learn mathematics in an effective way to reach my potential	3.63	0.53	Highly Manifested
5. Show a growth mindset to excel in math	3.58	0.54	Highly Manifested
Overall	**3.50**	**0.57**	**Moderately Manifested**

Table 8 shows the extent to which mathematical resilience manifests itself in terms of development. The respondents demonstrate a high level of mathematical resilience within the scope of the educational process. This indicates that the learners are efficiently studying mathematics in an efficient manner in order to achieve their full potential.

This demonstrates that pre-service teachers made moderate progress in Mathematical Resilience. Resilient learners approach learning with a growth mindset. They are comfortable with challenges and the possibility of encountering mathematical difficulties. Resilient learners recognize when they are stuck and have the language to seek assistance when needed. Most importantly, they believe they have the ability to "do math" (Davidson, 2022).

3. Relationship between the respondents' Level of Emotional Intelligence and Extent of Manifestation of Mathematical Resilience

Table 9 reveals that respondents' emotional intelligence is connected to their mathematical resilience, with a calculated Pearson r value of 0.857, which is significant at the p0.05 level. This means that the null hypothesis was rejected, demonstrating that there is a strong correlation between respondents' emotional intelligence and mathematical resilience.

Table 9 Relationship between the respondents' Level of Emotional Intelligence and Extent of Manifestation of Mathematical Resilience

Variables	Computed Pearson r	p value	Decision H$_0$	Interpretation
Emotional Intelligence and Mathematical Resilience	0.857	0.000	Reject	Significant

$\alpha = 0.05$

According to the research "Emotional Intelligence Through Mathematical Resilience in Secondary Students Based on Gender" (Faradillah & Wulandari, 2021) , the low mathematical resilience in kids, one of the causes is the fear of being wrong, therefore it demonstrates things connected to their emotions. Mathematical resilience and emotional intelligence are intertwined, and students must cultivate both. The emotional intelligence required to overcome obstacles and learn best.

4. Proposed course of action to enhance emotional intelligence and mathematical resilience

Following the disclosure of the emotional intelligence and mathematical resilience of the researchers proposed a strategy for developing pre-service teachers' emotional intelligence and mathematical resilience. The suggested action plan is presented in a tabular style, including objectives, activities, the persons involved, a time frame, and outcomes.

Table 10 Proposed Course of Action to Enhance Emotional Intelligence and
Mathematical Resilience

Objectives	Activities	Persons Involved	Time Frame	Outcomes
1. To understand emotional competence and enhance mathematical confidence.	Conducting emotional intelligence and mathematical resilience assessments.	Professors Students	1 hour	Students higher academic performance/ achievement
2. To enhance the coping and problem-solving skills of students.	Providing training on emotional intelligence and resilience.	Professor, Area Director, Coordinator	1 week	Stress reduction, Enhanced critical thinking, and increased adaptability.
3. To strengthen relationships and promote collaboration among students	Facilitating team-building activities.	Professor Students University Administrators	3 days	Improved communication, leadership skills, and leadership skills of students.
4. To facilitate knowledge sharing and increase productivity	Encouraging communication and collaboration.	Professor Students University Administrators, Parents/ Guardian	1 day	Improved communication, collaboration, empathy, and confidence.
5. To promote resilience and persistence.	Fostering a growth mindset.	Professor Students Parents/ Guardian	1 day	Improved resilience, self-efficacy, academic achievement, and attitude towards learning.
6. To determine if the activities have met their intended goals and outcomes.	Evaluating the effectiveness of	Mathematics Professors, Students Parents/ guardians, student	1 month	Student engagement, goal attainment, and sustainability.

Discussions

The study's participants revealed a high degree of emotional intelligence across several domains, including self-awareness, self-regulation, self-motivation, social awareness, and social skills. Their mathematical resilience was shown to be high, particularly in terms of valuing and coping with problems. However, the degree of expression in terms of mathematical resilience was moderate. When emotional intelligence was connected with mathematical resilience, all p-values were less than 0.05, indicating that the null hypothesis was rejected and a substantial association between emotional intelligence and mathematical resilience was confirmed. The researchers suggested course of action includes activities involving team-building, communication and cooperation encouragement, promoting a growth mindset, and evaluating effectiveness. These courses of action are expected to help students manage their emotions more successfully and actively engage in interpersonal interactions, thereby fostering mathematical resilience.

Conclusion and suggestions

The respondents exhibit a commendable level of emotional intelligence, encompassing self-awareness, self-regulation, self-motivation, social awareness, and social skills. They also demonstrate a high manifestation of mathematical resilience in terms of valuing challenges and coping with struggles, while the growth dimension is moderately manifested. Notably, there is a significant relationship between the respondents' emotional intelligence and their mathematical resilience.

In light of the noteworthy findings from the study, the researchers suggest specific enhancements for teacher preparation programs. Firstly, they recommend incorporating emotional intelligence seamlessly throughout the teacher preparation curriculum, encompassing coursework, field experiences, and internship programs. This entails motivating pre-service teachers to contemplate their emotions and observe seasoned educators who demonstrate elevated emotional intelligence. Secondly, the researchers propose integrating mathematical resilience into teacher preparation programs, embedding it within various components such as coursework and field experiences. Pre-service teachers should be encouraged to employ inquiry-based methods in teaching mathematics, addressing practical mathematical challenges to underscore the real-world relevance of mathematical concepts. Finally, the researchers advise future studies to acknowledge the context-dependent nature of results concerning emotional intelligence and mathematical resilience. It is crucial to consider the specific characteristics of the studied population, the assessment tools employed, and the cultural, educational, or environmental context when interpreting these findings.

New knowledge and the effects on society and communities

Understanding that pre-service mathematics teachers possess a high level of emotional intelligence implies that they are likely adept at recognizing and managing their own emotions, as well as understanding and navigating the emotions of others. This has the potential to improve their teaching efficacy and interactions with pupils. Furthermore, the discovery of highly exhibited mathematical resilience among pre-service math instructors shows that they have can value challenges, cope with obstacles, and maintain a growth-oriented mentality in the face of mathematical difficulties. This conclusion is crucial for the area of education because it shows that these instructors are well-prepared to deal with the inherent problems of

teaching mathematics and may act as good role models for their pupils in terms of overcoming mathematical barriers.

In practice, this understanding might guide efforts to improve emotional intelligence and capitalize on the existing high level of mathematical resilience among pre-service math teachers through teacher training programs and professional development activities. It also emphasizes the possibility for these educators to have a beneficial influence on students' emotional well-being and attitudes toward mathematics in their future teaching responsibilities.

Pre-service mathematics teachers' high levels of emotional intelligence and mathematical resilience can have far-reaching and positive consequences on society and communities. In classrooms, teachers with strong emotional intelligence create environments that are supportive, empathetic, and conducive to effective communication, contributing to improved teaching and learning outcomes. As role models, these educators inspire students with their growth-oriented mindset and perseverance in the face of mathematical challenges, fostering a culture of resilience and confidence in learning. Beyond the classroom, teachers' ability to engage with parents, colleagues, and community members, facilitated by their emotional intelligence, contributes to building strong community networks. Reduced math anxiety in students is another notable impact, creating a positive learning atmosphere. The cultivation of mathematical resilience not only prepares students for academic success but equips them with essential life skills, contributing to the overall well-being and development of individuals within the community. Furthermore, as students influenced by emotionally intelligent and resilient teachers pursue higher education and careers, the community benefits from a more skilled and knowledgeable workforce. In essence, pre-service mathematics teachers with these qualities play a crucial role in shaping positive, empowered, and resilient communities.

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The Correlation of Self-Care Practices in the Online Learning Environment of Teacher Education Students

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Abstract

This research examined the self-care practices in online learning among teacher education students during the Academic Year 2021-2022. Specifically, it investigated the significant relationship between the respondents' profiles and their self-care practices in online learning. Data were collected using a questionnaire as the principal tool. The gathered data were analyzed using appropriate statistical tools, including correlation analysis. The results indicated that the respondents were largely female, mostly enrolled in the Bachelor of Secondary Education program, belonging to the Superior Group, and from middle-income families. Additionally, the study found that self-care practices were generally maintained at a good level despite the challenges posed by the pandemic. Chi-square analysis revealed significant relationships between self-care practices and variables such as sex, academic program, birth order, and socio-economic status. Based on these findings, the study recommends the use of infographic materials to promote good self-care practices in online learning among students.

Keywords: Correlation analysis, General weighted average (GWA), Online learning,
Teacher education students, Self-care practices

Introduction

Self-care involves actions taken to set oneself up for success and well-being, acknowledging that it is sometimes necessary to seek help. According to (Jan, 2022), demonstrating to oneself and others that one is worthy is a crucial aspect of self-care. While physical self-care, which includes maintaining a good appearance, is essential for overall health and well-being, it is only one facet of comprehensive self-care. This broader concept encompasses mental, emotional, relational, and spiritual health, and achieving a healthy balance among these aspects is considered one of the most effective self-care strategies (Michael, 2018). Understanding what self-care is not is equally important. It is not about forcing oneself to do unpleasant activities. As Agnes Wainman explained, self-care should refuel and replenish us rather than deplete our energy (Michael, 2018). Self-care is not a selfish act; it involves recognizing and addressing our needs so that we can better care for others. If

individuals neglect their own needs, they will be less capable of supporting their loved ones (Hurst, 2014).

Self‑care is the key to living a balanced life. It must be actively planned and pursued rather than left to chance. This means incorporating self‑care activities into one's schedule, announcing plans to others to increase commitment, and seeking opportunities to practice self‑care consciously. Being aware of the activities and their benefits is crucial. A well-structured self‑care plan can improve health and well‑being, manage stress, and help maintain professionalism, particularly for those working with children (Hurst, 2014). According to Hurst (2014), self‑care includes anything done to be kind to oneself. It involves recognizing when resources are running low and taking steps to replenish them, thereby preventing burnout. However, not all activities that feel good qualify as self‑care. Unhealthy coping mechanisms, such as drug use, alcohol consumption, overeating, and risk‑taking, may provide temporary relief but are ultimately detrimental. True self-care activities offer long-term benefits for both the mind and body (Michael, 2018).

The transition to online teaching has posed unique challenges for teacher education students, emphasizing the need for robust self‑care practices. Online teaching environments can exacerbate stress due to the lack of physical interaction, increased screen time, and the blurring of boundaries between work and personal life. Teacher education students must adapt to new technologies and teaching methods, often without adequate training or support, leading to heightened anxiety and burnout (Smith et al., 2020). Effective self‑care strategies, such as setting boundaries, taking regular breaks, and seeking social support, are essential for maintaining mental and emotional health in this demanding context.

For students, self‑care practices are crucial in managing the pressures of online learning. The flexibility of online education can lead to procrastination and isolation, impacting mental health and academic performance. Research has shown that students who engage in regular self-care activities, such as exercise, mindfulness, and social interactions, report lower stress levels and higher academic achievement (Brown et al., 2019). Self‑care routines help students maintain a balance between academic responsibilities and personal well‑being, fostering a positive learning environment even in a virtual setting.

A growing body of literature explores the importance of self-care in the online learning environment. For instance, a study by Smith & Johnson (2018) highlights the role of self-care in enhancing student resilience and reducing burnout. The research emphasizes the need for educational institutions to promote self‑care strategies through workshops, resources, and supportive policies. Similarly, a literature review by Lee (2020) discusses various self‑care interventions, such as time management training, peer support groups, and mental health services, that can significantly improve students' online learning experiences.

In conclusion, self‑care is vital for physical health, mental well‑being, and overall quality of life. Neglecting self‑care can harm relationships and diminish effectiveness and energy. Engaging in self-care fosters self-love, confidence, and self-esteem. College life, while exciting, can also be stressful. Practicing self‑care through simple activities can reduce stress and enhance the quality of life. Research indicates that consistent self‑care not only keeps individuals healthy but also improves overall well‑being. In the context of online learning, self‑care is crucial for managing academic pressures, interpersonal challenges, and future uncertainties. Each individual may have different preferences for practicing self‑care, but the importance of maintaining a self‑care routine is universal. Understanding the factors and indicators that influence self-care practices is essential for promoting effective strategies in an online learning environment (Smith & Johnson, 2018; Lee, 2020).

Theoretical Framework

The physical and mental self-care is a central dimension of Dorothea Orem's Self Care Theory. Dorothea E. Orem's Self-Care Framework focuses on the actions taken by people who are considered legitimate patients to meet their own and their dependent others' self-care demands, as well as on actions taken by nurses to effectively use that will assist people who have limitations in their abilities to provide continuing and care of dependent others. Her theory of self-care delineates the demands of self-care requisites that an individual need to meet in order to stay healthy or get better from illness. This theory focuses on the performance or practice of activities that individuals initiate and perform on their own behalf to maintain life, health and well-being.

Objectives

This study was to identify self-care practices in online learning of Teacher Education Students in Academic Year 2021-2022.

Specifically, it will seek answers to the following questions:
1. What is the respondents' profile in terms of:
    1.1 Age
    1.2 Sex
    1.3 Birth order
    1.4 Socio-economic status and
    1.5 Program
2. How may the respondents' self-care practices be described as to:
    2.1 Physical care,
    2.2 Social care,
    2.3 Mental care,
    2.4 Spiritual care and
    2.5 Emotional care,
3. Is there a significant difference in the self-care practices when group according to their profile?
4. What infographic material can be designed to promote self-care?

These objectives collectively aim to provide a comprehensive understanding of how teacher education students engage in self-care within an online learning environment and to identify potential areas for intervention and support. By examining the respondents' profiles, the study will offer insights into demographic and socio-economic factors that may influence self-care practices. Describing self-care practices across various dimensions will help to highlight specific areas where teacher education students excel or may need additional support.

Furthermore, by investigating differences in self-care practices based on the respondents' profiles, the study can identify potential disparities and tailor interventions to address specific needs. For instance, understanding how socio-economic status impacts self-care can inform policies and programs aimed at providing additional resources to students from lower socio-economic backgrounds. Similarly, examining the role of age, sex, birth order, and academic program can help to develop more personalized and effective self-care strategies.

The design of an infographic material based on the study's findings serves as a practical tool for promoting self-care among students. Infographics are visually engaging and easily digestible, making them an effective medium for communicating important self-care practices. This material can be used by educational institutions, student organizations, and health services to raise awareness and encourage the adoption of healthy self-care habits.

Overall, the functionality of this paper lies in its potential to contribute to the well-being of teacher education students by providing evidence-based insights and practical tools for enhancing self-care in the context of online learning. This research not only addresses the

immediate challenges posed by the shift to online education during the pandemic but also offers long-term strategies for supporting the mental, emotional, physical, social, and spiritual health of future educators.

Methodology

Research Design

This study utilized the descriptive method. According to Ethridge (2004), descriptive research involves stating phenomena as they are at present, with the researcher having no control over variables. Descriptive studies may specify phenomena by simply attempting to determine, describe, or identify what is, whereas analytical research attempts to establish why it is that way or how it came to be. Descriptive research aims to shed light on current issues or problems through data collection, enabling a more comprehensive description of the situation than would be possible without employing this method. Essentially, descriptive studies describe various aspects of a phenomenon. In its popular format, descriptive research is used to characterize the behavior and/or characteristics of a sample population.

Respondents

The subjects of the study were composed of 234 first-year students from the College of Teacher Education at Batangas State University JPLPC-Malvar during the Academic Year 2021-2022. These students served as the respondents for this research endeavor. To ensure the validity and reliability of the results, a sufficient representation of the sample and an appropriate sampling technique were adopted. The sample size of 146 respondents was determined using the Weighted Mean. The sampling methodology ensured a diverse representation of the population, including varying demographics such as age, sex, birth order, socio-economic status, and academic program.

Data Gathering Tool

This This study utilized a researcher-made questionnaire employing survey techniques. The questionnaire consisted of 20 questions divided into two major sections. The first part gathered the profile of the respondents in terms of age, sex, birth order, socio-economic status, and academic program. The second part focused on describing the respondents' self-care practices in terms of physical care, social care, mental care, spiritual care, and emotional care.

Responses in the questionnaire were given on a four-point rating scale, where answers were chosen to gather specific responses. Respondents were asked to place a check mark in the columns corresponding to their answers. To determine the respondents' profile and their self-care practices in online learning, the mean of the responses to each item in each category was computed. This reflected the perception of the group for each item statement in the questionnaire. The overall or general mean was calculated to mirror the significant differences in self-care practices when grouped according to their profile. The responses to the questionnaire were interpreted using the following scale and verbal interpretations:

Scale	Mean Ranges	Interpretation
4	3.51 – 4.00	Always/Always practice
3	2.51 – 3.50	Sometimes/Practice
2	1.51 – 2.50	Seldom/Slightly practice
1	1.00 – 1.50	Never/Not practice

The efficiency of the questionnaire was ensured through validity and reliability testing. Validity was established by consulting experts in the field and conducting a pilot test with a small subset of the target population. Reliability was assessed using Cronbach's alpha, resulting in a reliability coefficient of 0.85, indicating a high level of internal consistency.

Data Collection Procedure and Treatment

After the approval of the research title, the researchers gathered related studies to aid in conceptualizing, analyzing, and formulating their own ideas regarding the study. An electronic mail requesting permission to administer the researcher- made questionnaire to the target respondents was submitted to the Associate Dean of the College of Teacher Education. Upon approval, the researcher distributed the questionnaire via Google Forms. With the assistance of the program chairperson, the link was provided to the respondents. The gathered data were tabulated, analyzed, and interpreted.

The statistical methods employed in this research included frequency and percentage calculations to interpret the demographic data of the respondents. The mean and standard deviation were used to analyze the self-care practices of the respondents. Inferential statistics, such as t- tests and ANOVA, were applied to determine significant differences in self- care practices when grouped according to their profile variables. The researcher used SPSS software for data analysis, ensuring accurate and efficient computation of statistical measures.

The researcher analyzed and interpreted the data to arrive at the study's results and recommendations. This comprehensive approach ensured a robust and detailed understanding of the self- care practices among first- year students in the College of Teacher Education at Batangas State University JPLPC-Malvar.

Results

This chapter primarily deals with the research problems and covers the presentation, analysis and interpretation of the quantitative data gathered in the investigation. To give an in-depth analysis and interpretation, the data are arranged thematically and sequentially resembling the presentation of specific problems posed at the beginning of the study.

1. Profile

In line with the statement of the problem specified in the study, the researchers first sought the respondents' profile in terms of sex, program, birth order, and socio- economic status. It served as the groundwork of the succeeding undertakings.

1.1 Sex

Sex refers to the physical characteristics that define humans as female and male. Table 1 shows the table of the respondents when they are grouped according to their sex.

Table 1 Distribution of the Respondents' Profile in Terms of Sex

Sex	Frequency	Percentage
Male	31	22
Female	111	78
Total	**142**	**100**

Table 1 indicates that females have notable dominance in the first- year students from College of Teacher Education.

1.2 Program
    Program refers to an integrated course of study leading to an academic degree. Table 2 shows the table of respondents when they are grouped according to their program.

Table 2 Distribution of the Respondents' Profile in Terms of Program

Program	Frequency	Percentage
Bachelor of Elementary Education	19	13
Bachelor in Physical Education	19	13
Bachelor of Secondary Education	104	74
Total	**142**	**100**

    Table 2 indicates that Bachelor of Secondary Education is numerous degrees in College of Teacher Education.

1.3 Birth Order
    Birth order refers to the field in which a specialist practices. It is also academic specialization pertaining to the subject he specializes in and teaches. Table 3 shows the table of respondents when they are grouped according to their birth order.

Table 3 Distribution of the Respondents' Profile in Terms of Birth Order

Birth Order	Frequency	Percentage
1st Child	42	30
2nd Child	24	17
3rd Child	31	22
4th Child	35	25
5th Child	5	3
6th-10th Child	5	3
Total	**142**	**100**

1.4 Socio-economic Status
    Socio Economic Status refers to the total gross household monthly income divided by the total number of family members sharing the same address. Table 4 shows the respondents profile when they are grouped according to their Socio-Economic Status.

Table 4 Distribution of the Respondents' Profile in Terms of Socio-economic Status

Socio-economic Status	Frequency	Percentage
High Income	2	1
Middle Income	49	35
Low Income	91	64
Total	**142**	**100**

    The level of socio-economic status is categorized as follows:
    High Income: Above PHP 100,000
    Middle Income: PHP 30,000 - PHP 100,000
    Low Income: Below PHP 30,000

2. Self-Care Practices

This part of the study determined the respondents' self-care practices in terms of physical, mental, social, emotional and spiritual self-care. These are found on the succeeding tables.

2.1 Physical Self-Care

Table 5 presents the respondents' self-care practices in terms of physical self-care. It reveals the computed mean and standard deviation for each statement with its corresponding interpretation.

Table 5 Physical Self-Care

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. Eat meals on time	3.52	0.74	Highly Practiced
2. Exercise on a daily basis	2.43	0.79	Slightly Practiced
3. Get enough sleep or at least eight hours a day	2.70	0.75	Practiced
4. Engage in stress-reducing activities excluding tv or screen time	2.99	0.76	Practiced
5. Make time to relax or take a nap	3.08	0.79	Practiced
Overall	**3.51**	**0.64**	**Practiced**

The result from the analysis indicates that the highest mean of 3.52 collected from the respondents is "Eat regularly (Breakfast, Lunch and Dinner)" while the lowest mean of 2.43 is "Exercise daily".

According to Williams et al. (2019), eating a balanced, varied diet which allows you to get the right amount of nutrients everyday helps us keep healthy, fight off sickness, keep energy levels up, keeps our minds working, affects our mood and many other important things. Regular meals also help punctuate the day, especially if you are living alone, or are unable to get out of the house often. Not exercising, or even not getting physical activity, is a confirmed risk factor of premature death. In fact, inactivity and being sedentary causes more deaths around the world than cigarette smoking or diabetes, according to a study published in The Lancet (Csatari, 2020).

2.2 Mental Self-Care

Table 6 presents the respondents' perceived importance of social values in terms of mental self-care. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 6 Mental Self-Care

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. Stay in contact with important people in your life	3.67	0.59	Highly Practiced
2. Focus on things that you should be grateful	3.64	0.60	Highly Practiced
3. Listen to your inner thoughts, judgements, beliefs, attitudes and feelings	3.50	0.65	Practiced
4. Engage in other activities to stimulate intelligence such as attending in exhibit, sports, events, and theatre	2.96	0.88	Practiced
5. Find ways to grow throughout your day	3.25	0.70	Practiced
Overall	**3.51**	**0.64**	**Practiced**

The highest mean of 3.67 was for "Stay in contact with important people in your life," while the lowest mean of 2.96 was for "Engage in other activities to stimulate intelligence such as attending exhibits, sports events, and theater."

People who engage in meaningful and productive activities with others tend to live longer, improve their mood, and have a sense of purpose. Staying socially connected to family, friends, and neighbors is crucial, especially during times of physical distancing (Strommen, 2020). Engagement with an activity is often represented by good behavior, positive feelings, and cognitive engagement, as students may be behaviorally and/or emotionally invested without exerting the necessary mental effort to understand and master the knowledge or skill that the activity promotes (Fredricks, 2014).

2.3 Social Self-Care

Table 7 presents the respondents' self-care practices in terms of social self-care. It reveals the computed mean and standard deviation for each statement with its corresponding interpretation.

Table 7 Social Self-Care

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. Spend more time with people who make you happy	3.61	0.68	Highly Practiced
2. Maintain a supportive family and friends	3.66	0.61	Highly Practiced
3. Do something fun with family or friends at least once a week	3.42	0.76	Practiced
4. Feel comfortable asking for help when you need it	3.24	0.78	Practiced
5. Look for a dependable person whom you listen to	3.49	0.68	Practiced
Overall	**3.48**	**0.70**	**Practiced**

The statement "Maintain a supportive family and friends" had the highest mean of 3.66 with a descriptive interpretation of very often and with the lowest standard deviation of 0.61. The quality of family relationships, including social support (e.g., providing love, advice, and care) and strain (e.g., arguments, being critical, making too many demands), can influence

well‑being through psychosocial, behavioral, and physiological pathways (Pearlin, 1999). Asking for help allows us to surround ourselves with people who can make us feel good and facilitate further development. These people create optimism and hope that we are able to deal with challenging situations, which improves our resilience (Coolidge, 2019).

2.4 Emotional Self-Care
Table 8 presents the respondents' perceived importance of social values in terms of emotional self‑care. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 8 Emotional Self-Care

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. Deal with varied situations proactively	3.36	0.65	Practiced
2. Seek activities, things or places which you find comforting	3.42	0.71	Practiced
3. Find things that make you laugh.	3.70	0.60	Highly Practiced
4. Know that you have limitations	3.77	0.48	Highly Practiced
5. Allow yourself to express all your emotions in a safe and appropriate environment	3.56	0.66	Highly Practiced
Total	**3.56**	**0.62**	**Highly Practiced**

The statement "Know that you have limitations" received the highest mean of 3.77 with a descriptive interpretation of highly practiced and the lowest standard deviation of 0.48. Boundaries affect self‑concept, self‑respect, feelings, energy levels, and happiness, ensuring needs are met and preventing being taken advantage of (Harley, 2017).

2.5 Spiritual Self-Care
Table 9 presents the respondents' perceived importance of social values in terms of spiritual self-care. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 9 Spiritual Self-Care

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. Engage in spiritual practices that you find fulfilling	3.39	0.70	Practiced
2. Identify what is meaningful to you and notice its place in your life	3.54	0.63	Highly Practiced
3. Consider nonmaterial aspects of life	3.51	0.65	Highly Practiced
4. Believe in the power of prayers and have faith in God all the times	3.82	0.50	Highly Practiced
5. Spend time for reflection or meditation	3.37	0.72	Highly Practiced
Overall	**3.51**	**0.64**	**Highly Practiced**

The statement **"Believe in the power of prayers and have faith in God all the times"** received the highest mean of 3.82 with a descriptive interpretation of highly practiced and the lowest standard deviation of 0.50. Faith helps us believe in powers greater than ourselves, being sure of what we hope for and certain of what we do not see (Kreilein, 2017).

3. Relationship between the Respondents' Profile and their Self-care Practices

Table 10 presents the relationship between the respondents' profile and their self- care practices in online learning. The correlation of the variables was tested using the Chi- square formula.

Table 10 Relationship between Profile and Self-care Practices in Online Learning

Variables	Computed χ^2	p Value	Decision (H$_o$)	Interpretation
1. Sex and Self-care Practices in Online Learning	29.662	0.000	Reject	Significant
2. Program and Self-care Practices in Online Learning	98.615	0.000	Reject	Significant
3. Birth Order and Self-care Practices in Online Learning	197.222	0.000	Reject	Significant
4. Socio-economic Status and Self-care Practices in Online Learning	41.060	0.000	Reject	Significant

The table shows that when the profile of the respondents in terms of sex was correlated to the self- care, the computed Chi- Square value is 29.662. Having the equivalent p value of 0.000, the null hypothesis is rejected confirming that there exists a significant relationship between sex and the respondents' self- care practices in online learning of teacher education students.

When the profile of the respondents in terms of program was correlated to the self-care, the computed Chi- Square value is 98.615. Having the equivalent p value of 0.000, the null hypothesis is rejected confirming that there exists a significant relationship between program and the respondents' self-care practices in online learning of teacher education students.

When the profile of the respondents in terms of Birth Order was correlated to the self-care, the computed Chi- Square value is 197.222. Having the equivalent p value of 0.000, the null hypothesis is rejected confirming that there exists a significant relationship between Birth Order and the respondents' self-care practices in online learning of teacher education students.

When the profile of the respondents in terms of socio- economic status was correlated to the self-care, the computed Chi- Square value is 41.060. Having the equivalent p value of 0.000, the null hypothesis is rejected confirming that there exists a significant relationship between socio- economic status and the respondents' self- care practices in online learning of teacher education students.

Discussions

The result delves into an in-depth analysis of the research findings concerning the self-care practices of teacher education students during online learning, coupled with an exploration of the relationship between these practices and various demographic profiles. It begins by elucidating the demographic profiles of the respondents, encompassing sex, program, birth order, and socio-economic status. Notably, the data reveal a predominance of females among first-year students in the College of Teacher Education, with Bachelor of Secondary Education emerging as the most prevalent program. Birth order distribution showcases a diverse representation, while socio-economic status is delineated into high, middle, and low-income brackets. Following this profile analysis, the chapter proceeds to evaluate respondents' self-care practices across physical, mental, social, emotional, and spiritual dimensions.

Analysis of physical self-care underscores high engagement in practices like timely meal consumption, albeit lower adherence to regular exercise routines. Mental self-care is characterized by robust engagement, particularly in maintaining meaningful connections and practicing gratitude. Social self-care emphasizes the importance of spending time with supportive individuals, with a particular emphasis on nurturing familial relationships. Emotional self-care prioritizes proactive problem-solving and seeking comfort in various activities, while spiritual self-care revolves around engaging in fulfilling spiritual practices and maintaining faith.

Lastly, the result concludes by examining the intricate relationship between respondents' profiles and their self-care practices. Chi-square tests unveil significant associations between sex, program, birth order, socio-economic status, and self-care practices in online learning, underscoring the pivotal role of demographic factors in shaping students' engagement in self-care activities. These findings underscore the necessity of tailored interventions to support diverse student populations and foster holistic well-being in remote learning environments

Conclusion and suggestions

The purpose of this research was to explore the self-care practices of teacher education students during online learning and examine the relationship between these practices and various demographic profiles. The study aimed to identify specific self-care strategies that support personal well-being and foster emotional connectivity in the context of remote education. Additionally, it sought to understand how these practices influence students' overall experience, motivation, and engagement in online learning environments.

The study identified several components of self-care practices that teacher education students engage in during online learning. These components include physical self-care practices such as eating meals on time, getting enough sleep, relaxing, engaging in stress-reducing activities, and exercising. Mental self-care activities involve staying in contact with important people, focusing on gratitude, listening to inner thoughts, finding growth opportunities, and stimulating intelligence through various activities. Social self-care practices include maintaining supportive relationships, spending time with people who bring joy, doing fun activities with family or friends, asking for help when needed, and having dependable confidants. Emotional self-care involves recognizing personal limitations, finding humor, expressing emotions in safe environments, seeking comfort in activities or places, and dealing with situations proactively. Spiritual self-care includes believing in the power of prayer, identifying meaningful aspects of life, considering non-

material aspects, engaging in fulfilling spiritual practices, and spending time on reflection or meditation.

The findings indicate that self-care practices are moderately engaged by teacher education students and are crucial for maintaining their well-being during online learning. These practices help sustain a positive outlook and a sense of enjoyment despite the challenges posed by remote education. However, the study revealed no significant correlation between demographic profiles (such as sex, program, birth order, and socio-economic status) and engagement in self-care practices for online learning. This suggests that self-care practices are widely adopted across different demographic groups of teacher education students. While the lack of a discernible relationship between demographic profiles and self-care practices may seem counterintuitive, it highlights the universal applicability and importance of self-care practices in online learning environments. The research underscores that irrespective of their background, all teacher education students recognize the value of self-care and integrate these practices into their daily routines to navigate the demands of online education effectively.

The study affirms that the self-care practices introduced and designed by the researchers are instrumental in enhancing the online learning experience for students. These practices foster a sense of motivation and engagement, thereby contributing positively to students' overall well-being. By detailing specific self-care practices that teacher education students find beneficial, the study provides a practical framework that educators and institutions can use to support their students better.

New knowledge and the effects on society and communities

This research contributes significantly to the field of educational research and teacher training by highlighting the critical role of self-care practices in online learning environments. It demonstrates that self-care is not only beneficial for the personal well-being of teacher education students but also essential for maintaining their engagement and motivation in remote learning settings. One of the significant contributions of this study is the identification of effective self-care practices that promote a positive learning experience. These practices can be incorporated into teacher training programs and professional development workshops, equipping future educators with the tools they need to thrive in online and hybrid learning environments.

Additionally, the study offers insights into the universal applicability of self-care practices across diverse demographic groups. This finding suggests that educational policies and support programs can be designed with broad applications in mind, ensuring that all teacher education students, regardless of their background, can benefit from self-care initiatives. By fostering a culture of self-care, institutions can enhance the overall educational experience and well-being of their students in online learning environments.

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The Design and Development of Community Textile Products from Banana Fiber Blends as Commercial Prototypes

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Abstract

This research is predicated on the imperative to enhance the economic value of indigenous materials, specifically banana fiber, through the integration and development of community-based textile products with potential for commercial scalability. The objective of this research was to develop community textile products from banana fiber blends as commercial prototypes. The creation was divided into two parts: the creation of textile designs and the development of textile product prototypes from the needs of 400 working-age consumers aged between 25 and 45 years. The findings revealed that the yarn blend with banana fiber using a blend ratio of cotton, banana fiber, and Eri silk ($70 : 20 : 10$), spun in OE Spinning, yarn size 10/1, when used to create woven fabric patterns using the Kite technique resulted in new designs inspired by parts of a banana tree, which included designs based on banana blossom tops, banana fibrous layers, and banana blossoms. These developed designs could be applied to create textile fabrics with other techniques at the community level. When the developed textile was made into 10 daily wearable prototypes, the acceptance of the products by the consumers was at a good level. The overall mean acceptance score of 4.70, which was higher than the predetermined criterion of 4.00. Therefore, developing a prototype community textile product from banana fiber blend to commercial scale is the new body of knowledge that the community can use, develop, and expand its textile product in the future.

Keywords: Banana fiber, Products from banana fiber, Commercial textile prototypes, Hand woven fabric, Development of community textile

Introduction

The consumption of textiles and clothing has currently become fashionable rather than utility for body covering. The needs of textile products of consumers, both in quantity and in style, have changed rapidly, resulting in the expansion of the textile industry to meet the increasing demand of both domestic and global consumers (Sarkar, 2015). Fibers for producing textiles and clothing are synthetic and natural, and cotton is a globally popular natural fiber due to its good quality for cooling and sweat absorption. In Thailand, nevertheless, cotton fiber is insufficient in quantity for textile and clothing production and the import of cotton fiber could cost US$ 113.7 million (Thai Textile Institute, 2024). This problem has been partly due to a lack of serious promotion to grow cotton from the state sector. Thus, studies and investigations about natural fibers from other plants as a substitute are interesting, especially from those with abundant fibers and locally available materials like banana fibers.

Abaca (*Musa textilis*) is also known as Manila hemp. It is a member of the Musacea (banana) family of plants (Franch, 2005). Banana is a type of herbaceous plant in Asia. It is easy to cultivate, grows well, and provides good yields. In 2022, the banana export from Thailand ranked 20 in the world with a cultivation area of approximately 418, 639 rai and an export of 1,075, 251 tons per year. (TNN Online, 2023) Banana is therefore a promising prospect for the development of agro-based fibers. Normally, banana trunks after harvest are cut down without being exploited for other benefits. In fact, the trunks can be used to produce natural fibers. The part for fiber segregation is the pseudo-stem of the banana plant, which is a waste. Banana fibers are natural plant fibers derived from waste and they are biodegradable, ecologically friendly, sustainable, renewable, and natural plant fiber extracted from agricultural waste (Unal et al., 2011). The fibers have great potential as a natural fiber among the agro-based, natural, and cellulosic fibers (Pappu et al., 2015). Banana fibers are shiny, highly strong, tough, and durable, but coarse. Consequently, to use the fibers in textiles to produce clothing, it is imperative to blend them with other types of fibers to increase softness and reduce coarseness. The banana plant has long been an abundant source of fiber production for high-quality textiles. Banana fiber-based fabrics have been regarded as eco-friendly apparel with the potential for commercial success in the creation of job prospects in rural areas (Sodhi et al., 2012). In Thailand, commercial products based on banana fibers are few, especially textile products, due to limitations in the production process, such as labor, machinery as well as delivery of raw materials. Thus, patterns of banana fiber-based textile development have only been product prototypes proposed as a production guideline that could not be produced commercially.

Regarding textile products at the community level in Thailand, they have been developed from local wisdom of particular communities which are folk handicrafts passed down from generation to generation through analyses and syntheses from ancestral knowledge. Each community is unique in consistency with geographical conditions, raw materials, customs, traditions, and local cultures. Nowadays, there are about 40,000 textile entrepreneurs registered with OTOP (Community Development Department, 2024). The textile producers have encountered problems of yarn prices varying according to marketing mechanisms and it is thus difficult to control production costs. If other types of yarns could be used commercially, it would provide communities with more alternatives to use them to produce more products which could lead to the creation of community products that could be suitably applied to their contexts creatively. Consequently, it is interesting to use banana fibers to develop and create community products. Therefore, this research aims to design woven fabric patterns and develop prototypes of community textile products. This will create commercial opportunities for textile craft groups. Ultimately, the goal is to expand local knowledge and wisdom for commercial benefit.

Methodology

The development of community products from fiber blends for commercial purposes was based on banana fibers from the wild balbisiana variety as product prototypes. The bananas were sourced from the variety cultivated in Chiang Mai province, Thailand, where villagers primarily grew them for leaf sales. When banana trees aged and their leaves no longer sold well, they were cut down and the trunks were left to rot without being exploited for other benefits. The yarn was derived from the open-ended spinning process with a blend ratio of 70:20:10 between cotton, banana fiber, and Eri silk. The combination of banana fibers, Eri silk, and cotton was at the ratio of 20:10:70. (Reference to the appropriate banana fiber mixing ratio based on the process by Piyaporn Kampeerapappun). The size of the yarn was 10/1. The research methodology was divided into two steps as follows.

Step 1: The creation of textile designs

1. Specified the designs with the entire continuous supplementary weft technique by designing the heddles for the local looms. The designs reflected the story of the banana tree and thus were inspired from parts of a banana tree which included its fibrous layers and blossom. Using the color trends of 2022, including shades of brown, blue, and cream. The designs were created with the participation of the involved community members, textile specialists, academics, and textile entrepreneurs to share their opinions and collectively provide suggestions to develop banana fiber-based textiles consistence with consumer needs.

2. Calculated the number of heddles for weavers' knots and the results were 10 heddles for the first design, fibrous layer design; 16 heddles for the second design, banana blossom top design; and 36 heddles for the third design, banana blossom design.

3. Designated the designs in the form of alternate weft threads of different colors by using the tie-and-dye technique for the threads with natural dyes extracted from leftover banana fibers after having undergone the segregation process (brown and indigo). The warp threads were blended with white banana fibers with a size of 10/1. Two-ply thread was used for each heddle so that the threads were strong, and the fabric was thick.

Step 2: The development of the textile product prototypes

1. Surveyed the needs of consumers who were visitors at the Chiang Mai Design Week in 2021 to realize the development guidelines and product patterns consumers needed.

2. Selected a community where banana fibers would be handwoven into the fabric. The selection criteria were that the community had production potential, received a four to five-star OTOP award, and needed new materials for textile production. The purposive sampling method was applied to select one community where banana fibers were actually exploited.

3. Drafted 40 product prototypes, consisting of 20 for women's clothing and 20 for men's clothing.

4. Selected the 10 prototypes by community representatives, cloth designers, and the researcher to collectively find out and define directions of the products suitable for consumers, so that they would be further produced commercially.

5. Cut and tailored the selected prototypes and improved them to suit commercial production.

6. Exhibited the finished products at a product exhibition in Chiang Mai province and asked for the acceptance of the consumers. The questions focused on three product aspects, namely, design, beauty, and utility. The acceptance mean of each product must be 4.00 and over to measure and infer that the product was accepted by consumers and could be produced commercially.

Results

The development of these community textile products from banana fiber blends was based on Guilford's creation theory about flexibility, originality, and elaboration. Methods of improving fiber quality for use in various fields were not under the same principles or conventions, and the main result was that there was a new creation leading to banana fiber innovation from an environmentally friendly process so that they could be used to produce or develop creative community textile products. This undertaking was divided into two parts: woven fabric design creations and product prototype development leading to creating innovations.

Woven fabric design creation

The design creation was channeled for use with traditional looms of the community and the continuous supplementary weft technique was employed as this technique has been used in the community nowadays. The designs were inspired by parts of a banana tree: fibrous layers and blossoms. The outer frame structures of the parts were applied for the designs superimposed with the materials to derive unique and innovative shapes, as shown in the following figures.
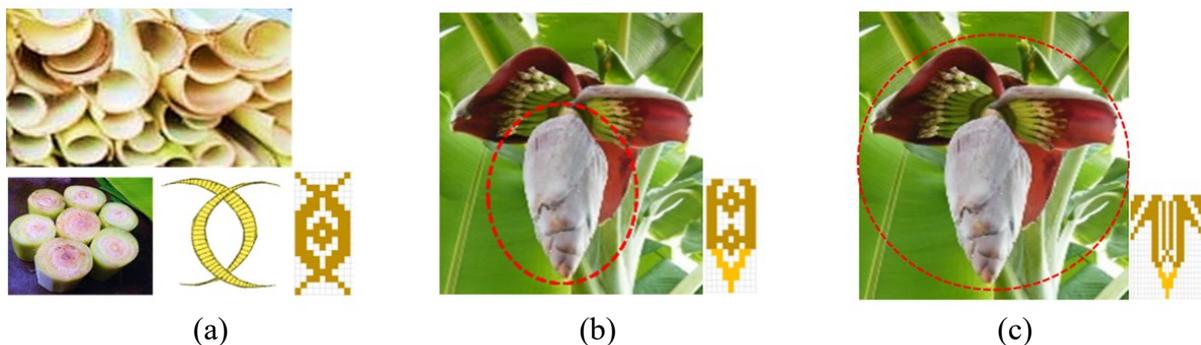

(a)   (b)   (c)

Figure 1 Inspiration for the fabric designs (a) fibrous layer (b) blossom top and (c) blossom (Researcher, 2024)
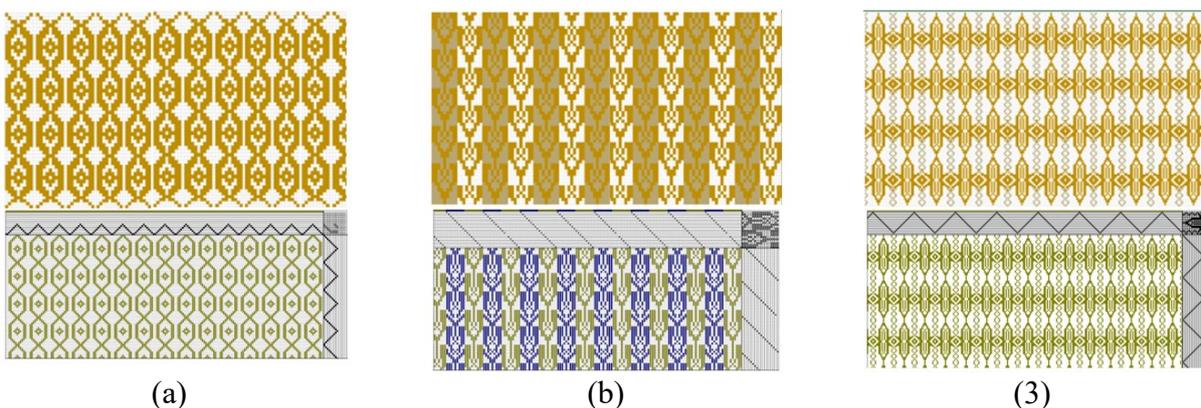

(a)   (b)   (3)

Figure 2 Drafts of the fabric designs (a) Fibrous layer design (b) Blossom top design (c) Blossom design (Researcher, 2024)

From the three design drafts, they were created using a packaged computer program to plan for weaving and calculate the number of heddles of each design, so that their names were easy to apply and memorize by weavers as well as to implement commercially. It was revealed that the first design required the 10 heddles, the second required 16 heddles, and the third required 38 heddles. The community weavers also participated in naming these designs. The designs in Thai contained the word "*Khrua*" or "cluster", indicating the passing down of the weaving wisdom.

For the color shades used for this development, the 2022 trend was applied, comprising brown, blue, and cream shades. When color use was analyzed to rank its importance, the results were shown in Figure 3.
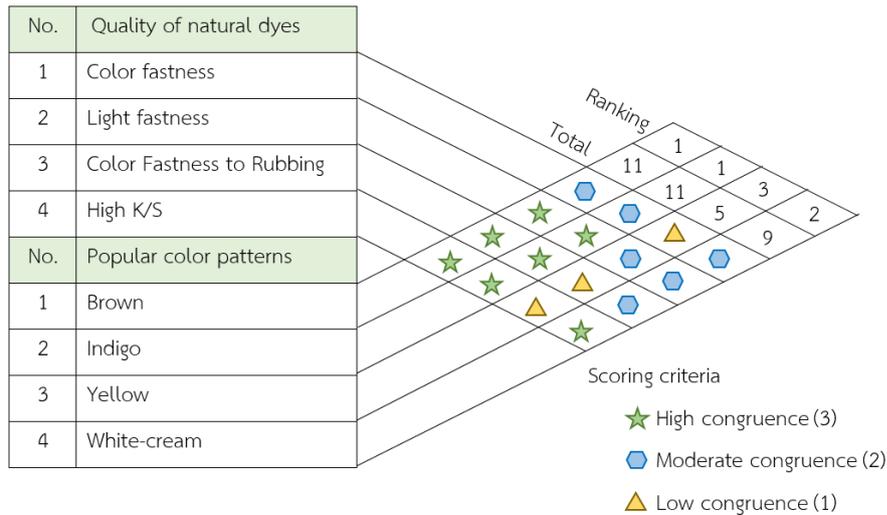

Figure 3 Analysis results of color used to develop community textile products
(Researcher, 2024)

The above figure revealed that the brown and blue shades had the highest scores. Therefore, the blended threads with the sizes 10/1 and 16 were dyed with natural dyes extracted from leftover banana fibers after the segregation process. Tamarind juice was used as the mordant due to its good fastness qualities (from previous test results), and the cold dyeing method was used to reduce carbon dioxide being released into the atmosphere. In this development, white warp threads (without dyeing) were used to brighten the woven fabric and heighten the designs. The dimensions of the designs were created by tying and dyeing weft threads two times to create three shades in one skin. The first time was for brown and it was repeated five times for stronger color fastness and darker shade. The second time was for indigo and it was repeated once to prevent the color from becoming too dark.
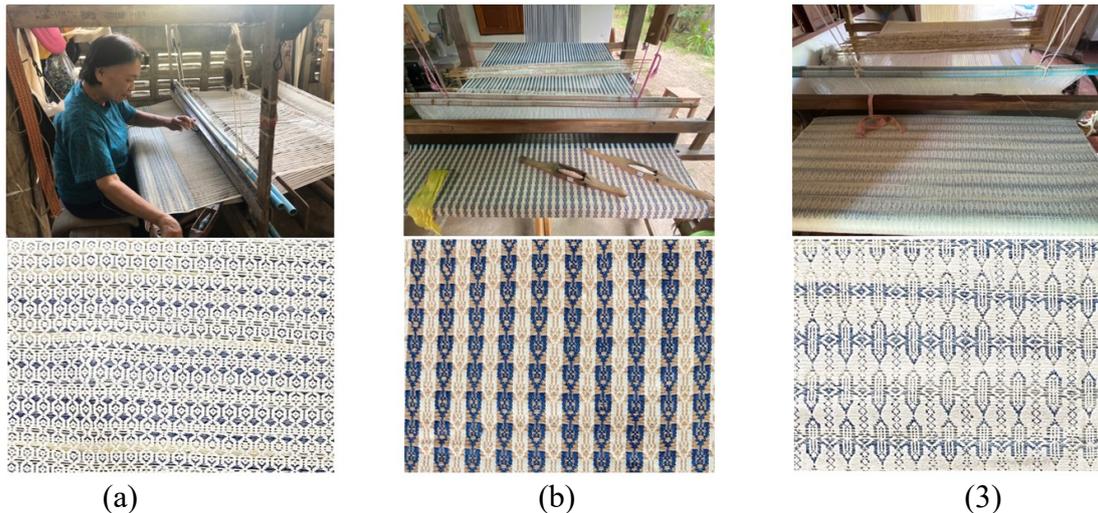
| (a) | (b) | (3) |

Figure 4 The fabric using the continuous supplementary weft technique (a) Fibrous layer
design (b) Blossom top design (c) Blossom design (Researcher, 2024)

The development of community textile product prototypes

       For the development of the prototypes, documentary research was conducted, and existing community products as well as the target group to use the developed products were analyzed for the prototypes to be produced commercially at the community level. The target group was 400 working- age individuals between 25 and 45 years old who were visitors at the Chiang Mai Design Week 2021. The collected data were concerned with consumers' needs. It was revealed that 17. 36% wanted fashionable clothing and 55. 25% wanted contemporary traditional styles. After the data of the target customers were obtained, they were analyzed and synthesized to formulate the product design plan as follows.

       1. Inspiration: The inspiration was from valuable Lanna traditions, arts, and culture passed down from generation to generation through their beliefs and faith via natural sacrificial objects with structures and lines that express strength and stability. These cultural traits inspired the designs of contemporary clothing suitable for working- age consumers. This was because their lifestyles were relatively predictable with the purchasing power to buy community products. Furthermore, they also appreciated wisdom-based and cultural products.

       2. Concept design: The focus was on the exploitation of wasted banana fibers for textile benefits, which could be tailored to produce ready- to- wear clothing for daily use. The fashion mood was with a loose structure and basic cutting and shapes. The patterns were simple, symmetrical, and asymmetrical without much superimposition. The emphasis was on wearability daily. The colors were natural dyes extracted from leftover banana fibers that produced brown, yellow, and indigo shades. For the form and silhouette, the shapes of the clothing were simple, and the clothes could be worn on both sides. Details of the fabric were weaving banana fibers in alternation with cotton using continuous supplementary weft technique to create designs on the fabric. For the design techniques, this fashionable clothing could be worn on both sides and the materials were banana fibers blended with cotton dyed with the dyes extracted from leftover banana fibers after the fiber segregation process.

       3. Sketch design: The designs of the products were conducted under the notion that the community had the potential to carry them out commercially. Consequently, 40 design drafts were carried out consistent with the survey results of consumer needs. The drafts were collectively selected and analyzed for production feasibility and directions of product styles suitable for consumers.
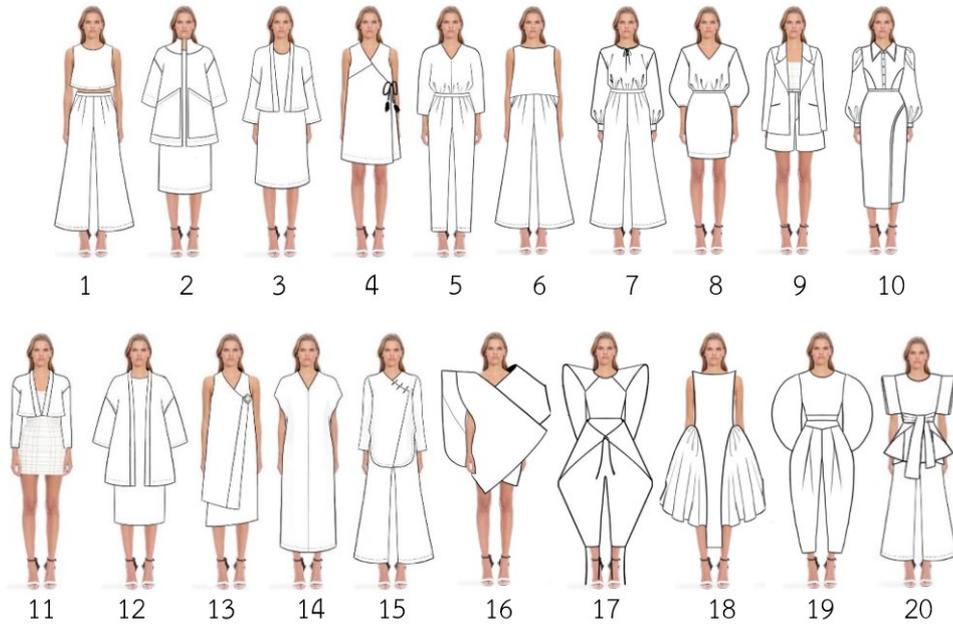
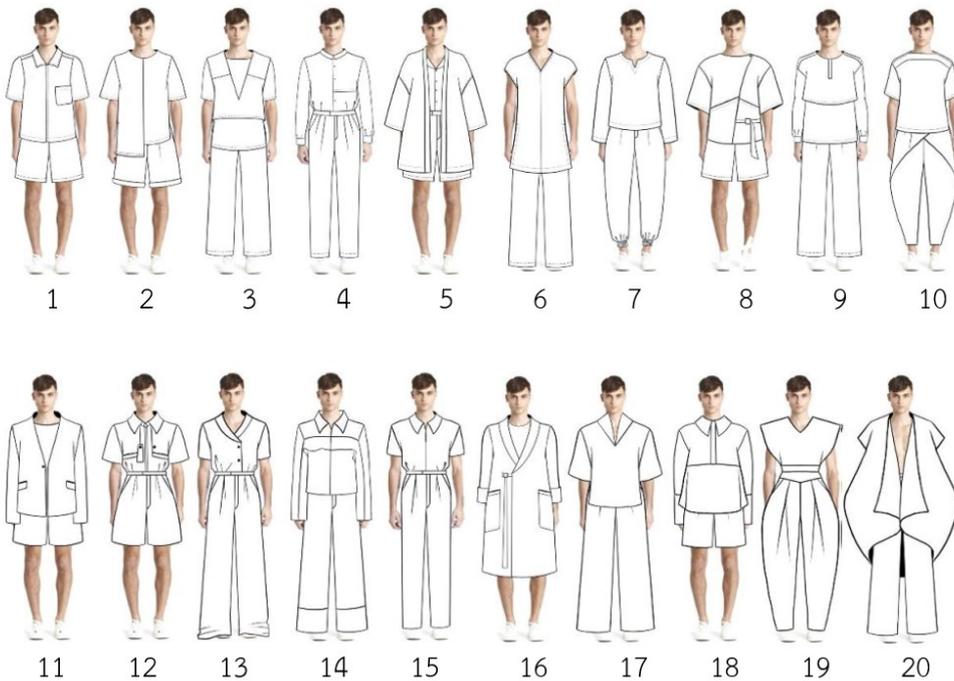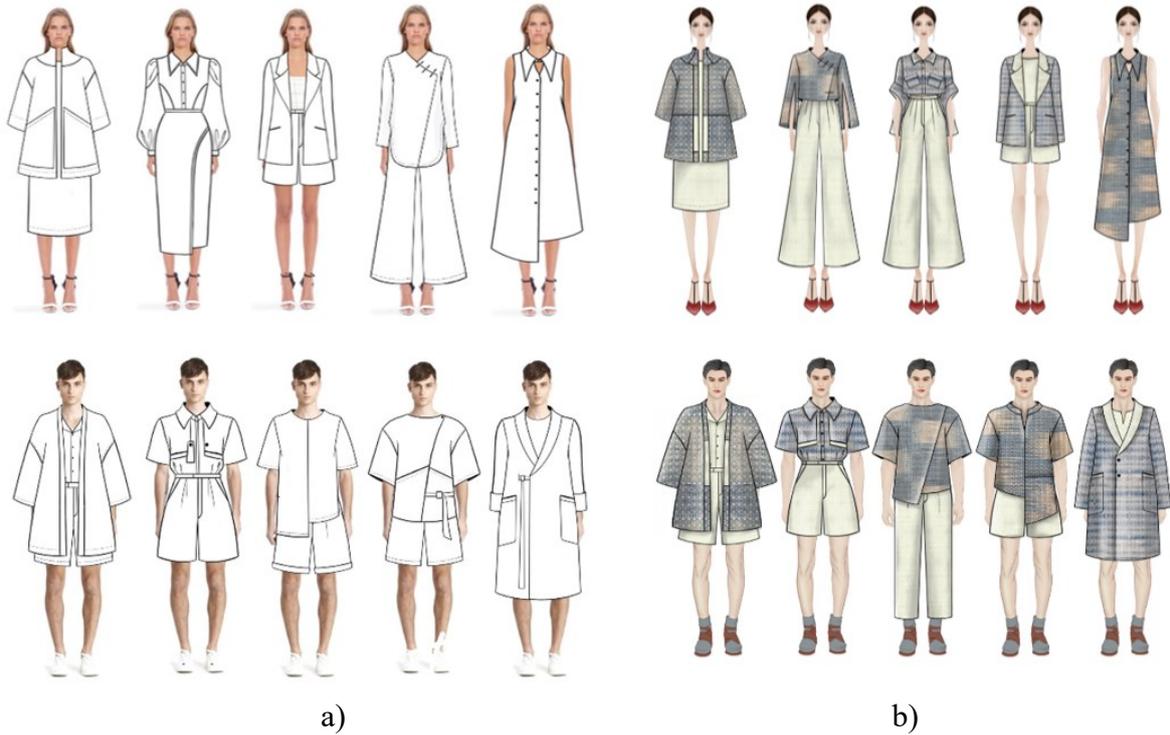**Figure 5** Women's clothing design drafts (Researcher, 2024)

Figure 6 Men's clothing design drafts (Researcher, 2024)

4. Collection: The community representatives, the specialists, and the researcher together selected 10 drafts and slightly revised the clothing patterns to suit the utility and commercial production.

a)   b)

Figure 7 Drafts for prototype production a) Selected drafts b) Revised drafts
(Researcher, 2024)

5. Prototypes of the selected prototypes: They were experimentally tailored by using calico to assess their patterns and techniques. The patterns were in both symmetrical and asymmetrical forms, as shown in the following figure.

Figure 8 The 10 prototypes made from calico (Researcher, 2024)

After the revision and correction, the creation of the prototypes was made into the final stage, as shown in the following figure.

(a) (b) (c)

(d) (e)

Figure 9 The final prototypes of women's wear (a) Blazer and dress (b) Blouse and long pants (c) Blouse and long pants (d) Suit and shorts (e) Dress (Researcher, 2024)
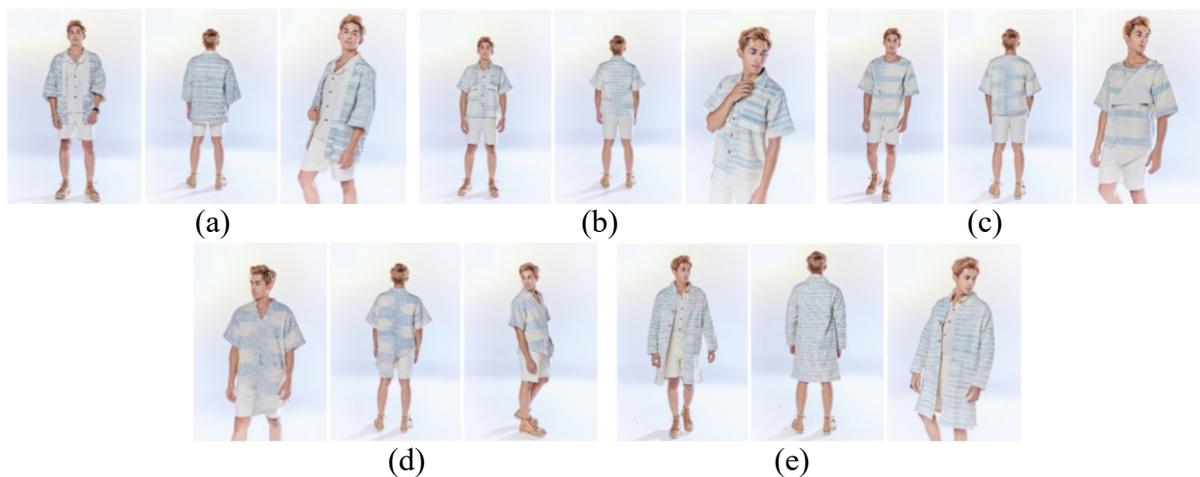

(a) (b) (c)

(d) (e)

Figure 10 The final prototypes of men's wear (a) Yukata style (b) Collar shirt (c) Overlap top shirt (d) Chinese collar shirt (e) Overcoat (Researcher, 2024)

6. Correction of the prototype products: The products were examined and corrected in small details so that they would look better with better quality and beauty in consistency with the production at the community level.

7. Publicity of the prototype products: The 10 sets of the products were exhibited at a fashion show at the Lanna Expo 2022 on July 1, 2022, held at the Chiang Mai International Exhibition and Convention Center in Chiang Mai province, Thailand, where many tourists and entrepreneurs attended.

Figure 10 The fashion show exhibition (Researcher, 2024)

8. Product acceptance testing: The test was conducted at the 7th Chiang Mai Craft 2023. For this test, 200 consumer acceptance tests were conducted and observing consumer behaviors toward clothing patterns. It was found that they were interested in the banana fiber fabric because the products were innovative, using a fiber different from what is found in the general market. Moreover, such fibers could be tailored into wearable clothes. The overall acceptance mean was 4.70, higher than the predetermined criterion of 4.00. The result indicated that the prototypes could be

Product testing was conducted to find out the acceptance of 200 domestic and customers the target areas and having an interest of textile products made from naturally dyed banana fiber blends. Specifically, those who participated in the product and watched the performance that the researcher presented. From the questionnaire, it is revealed that 74.50 % of the respondents were females, 30.50 % were in the age range between 41 and 45 years, and 45.00% were self-employed. Additionally, 59.00% held an undergraduate degree and 21% had a monthly income between 15,001 and 20,000 baht. The acceptance of the respondents on each product is shown in Table 1.

Table 1 Product testing results on the products of the respondents

Description	X̄± S.D.	Level
Aesthetics part		
1. The products are novel.	4.70±0.53	highest
2. The products are aesthetics and attractive.	4.67±0.54	highest
3. The arrangement of the patterns is appropriate.	4.79±0.49	highest
4. The colors used are appropriate for current trends.	4.76±0.51	highest
5. The aesthetics of the overall product composition	4.83±0.46	highest
Total	**4.75±0.51**	**highest**
Products part		
1. The products are modern.	4.76±0.51	highest
2. The products are diverse.	4.69±0.59	highest
3. The product can be repeated.	4.75±0.57	highest
4. The size of products is appropriate.	4.83±0.46	highest
5. The texture of the fabric is suitable for the product.	4.69±0.60	highest
6. Products can promote the transfer and extension of local wisdom creatively.	4.72±0.59	highest
7. The products are an innovation that can be made to the community level.	4.79±0.55	highest
8. The product is a cost-effective use of local materials.	4.69±0.59	highest
9. The materials used are suitable for developing new alternative textile products.	4.72±0.64	highest
10. The product is an extension of local wisdom and art for commercial benefit.	4.76±0.57	highest
Total	**4.74±0.57**	**highest**
Functionality part		
1. The products are easy to maintain.	4.35±0.76	high
2. The products are safety	4.76±0.51	highest
3. The products are easy to use.	4.62±0.72	highest
4. The products are convenient for transportation/transportation.	4.65±0.66	highest
5. The products are strong and durable in use	4.72±0.64	highest
6. The products are easily repairable if there has been a damage	4.58±0.77	highest
7. The product responds to the usage needs of the target consumer group.	4.72±0.59	highest
Total	**4.63±0.66**	**highest**

From the table, it can be summarized that the overall mean of the products is 4.71±0.58, indicating that the target consumers accepted the textile products made from naturally dyed banana fiber blends. This is because the overall mean scores are higher than the predetermined scores of 4.00. Aesthetics part have the highest average score is 4.75±0.51. In addition, the respondents also suggested that the format of the work presented was creative. The style of the set is beautiful, and the quality is very well‑crafted. There should be further development of products in various other formats. And there should be a market test in the form of actual distribution as well, that would be great. However, the development of textile product prototypes this time was carried out according to the theory and process of textile product design. To evaluate the product format that has been created. If the results are positive, they will be considered for transitioning these products into commercial production.

Leveraging the analysis and synthesis of community textile needs, we have developed successful prototypes of woven fabric mixed with banana fibers. These 10 prototypes will serve as a knowledge transfer tool for the community, teaching pattern making and color selection for textile design. This empowers the community to apply these skills in their own textile business and careers.

Discussions

The research results revealed that the creative development of community textile product prototypes from banana fibers dyed with natural dyes was done in the middle and final stages (woven fabric and processing). It was the integration between science and arts, resulting in an innovation based on local wisdom that was significant to the socio-economic conditions of community members. Constructive creation was derived from regular integration and combination. When an entity was constructed, the consideration and analysis must be executed on a regular and continuous basis to obtain innovative and different ideas. Such creativity would lead to unexpected concurrences that would emerge when the concept of creative potential was critically taken into consideration in its various forms and dimensions (Corazza et al., 2020). From this integration, new fabric designs were derived with the inspiration from parts of a banana tree for creating the product prototypes. Creative thinking was a process of creating new things for suitable and wearable benefits to the community and consumers alike. Creative achievement must be considered as a blend of attitudinal and cognitive abilities, and both elements were required to be measured accordingly (Agnoli et al., 2016). Creative thinking plays a crucial role in socio-economic development to elevate Thailand as a creativity-based center of high-valued production and services. Communities should be encouraged to add more value to their products and services to internationally accepted qualities and standards. For the development of these product prototypes, suitable techniques, methods, and materials were deliberately selected consistent with their utility attributes to produce the products according to consumer and marketing needs. A survey on consumer needs was conducted before the production and the data were used to plan for the development through analyses, syntheses, and assessments so that the developed prototypes were beautiful with quality and truly responded to consumer needs. Nowadays, banana fiber-based fabric has been used more widely in producing clothes, paper, shoes, handbags, and household furniture. This is because consumers are more aware of the sustainable and ecologically friendly values of products (Sodhi et al., 2022). These products in this study were regarded as new products and were at the 5th level of creativity, which had incorporated technology, local wisdom, and culture to create unique, meaningful, and valuable stories for products to become more value-added (Soodsang, 2015). Ulrich & Eppinger (2012) stated that the product development process is a sequence of steps that transforms a set of inputs into a set of outputs. A clear process contains quality assurance, coordination, planning, management, and improvement. The conclusion of the product development process is the product launch, and subsequently the product becomes available for purchase in the market. This is in line with the acceptance theory of Hambling (2013) in that user acceptance requires formal testing and the tests should be designed and conducted in a structured way that provides objective evidence of the acceptability of the system. The test for this investigation was formulated according to the aspects of the products, namely beauty, product, and functionality, in an attempt to derive the overall information in accordance with market needs. In addition, the research results of Inpakdee et al. (2022) it was found that they had developed a prototype product from naturally dyed banana fibers for wicker. Consumers accept the product at a very good level. As a consequence, not only does exploiting the fibers use for wicker production, but they can also be applied to developing other products by using other methods like weaving and embroidery. This attempt had empowered fashion designs or arts to become sustainable by incorporating conventional cultures with new technology so that designing could be more widespread and expanding (Zou et al., 2022). Therefore, the creation of these textile products was based on an interdisciplinary integration, resulting in the production becoming commercial as well as creating more jobs and incomes for community members, which could turn the community economy sustainable.

Conclusion and suggestions

The commercial development of the banana fiber-based textile product prototypes was to exploit banana fibers for textile benefits with an emphasis on ecological friendliness. The creation of the textile designs in this research was innovative with the inspiration from the parts of a banana tree, namely, the fibrous layers and blossom. The designs were created by using the continuous supplementary weft technique. Furthermore, the designs could be developed in handwoven fabrics using other techniques, e.g., brocade, raised wafting, or tie-and-die. This was to further local wisdom based on culture. For this commercial development, it is necessary to understand the nature of the fibers to create strengths and reduce weaknesses, which would lead to the creation of sustainable community development.

New knowledge and the effects on society and communities

Developing a prototype community textile product from a banana fiber blend to commercial scale is the use of fiber from banana tree to add value to community textile product by spinning it into open-end spinning yarn using a mixture ratio of cotton, banana fiber, and Eri silk (70:20:10) with a yarn size of 10/1. Such yarn can also be used in weaving by local loom. Because the size of the yarn is the same size that the community has ever used. Therefore, it does not affect changes in the production process. When woven into fabric, the woven fabric has a texture different from other woven fabrics in the market. Because banana fiber has shiny characteristics like silk fiber. New knowledge and effects on society and communities are as follows:

1. Woven fabric patterns inspired by banana tree components were developed using the Khit weaving technique. Theis patterns create a cohesive narrative that ca be for marketing to engage consumers.

2. Prototype textile products has been developed into lifestyle fashion clothing, which the community can replicate for commercial production.

3. The research has successfully demonstrated the potential of banana fiber, an agricultural waste material, to be transformed into higher-value products using locally sourced resources.

4. Innovative textile products made from banana fibers have been developed to cater to the growing demand for environmentally friendly options. These products represent a novel offering in the market.

Therefore, developing a prototype community textile product from banana fiber blend to commercial scale is the new body of knowledge that the community can use, develop, and expand its textile product in the future. There is a high possibility that the community produces it for commercial distribution because the target consumer group accepts the prototype textile product with an average acceptance score of the consumer group of 4.00 which is higher than the specified criteria.

Acknowledgments

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Strategic Entrepreneurship Amidst Disruption: A Qualitative Case Study of an Immigrant in Thailand

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Abstract

This study focuses on a qualitative exploration of an immigrant ethnic minority entrepreneur's journey to leverage technological opportunities within a period marked by significant market disruptions. Employing a case study methodology, this research aims to elucidate the interplay between the entrepreneur's minority immigrant status and his strategic plans to establish and scale a successful online business venture. The subject of this study is an individual from an ethnic minority immigrant who has notably thrived as an online entrepreneur amidst the challenges and opportunities presented by the disruptive era. Data were gathered in 2022 through semi-structured, face-to-face interviews and a comprehensive review of the entrepreneur's digital marketing strategies on various social media platforms. Through content analysis, the findings are narratively presented, highlighting the entrepreneur's background, the strategic exploitation of disruptive opportunities, the impact of his ethnic minority status on business operations, and his forward-looking business strategies. This research contributes to the entrepreneurial literature by offering insights into the critical factors facilitating the success of entrepreneurs from marginalized communities in navigating the complexities of the digital age. It holds significant implications for aspiring entrepreneurs, particularly those from minority backgrounds, by shedding light on the key elements of entrepreneurial success in the contemporary disruptive landscape.

Keywords: Entrepreneurship, Disruption, Ethnic minority, Online entrepreneur

Introduction

The disruptive era, characterized by rapid technological and societal changes, presents a landscape in which businesses must adapt swiftly or face obsolescence (IGI Global, 2022). This period, also identified with the Fourth Industrial Revolution, couriers an abundance of opportunities and challenges for global businesses (Fauzan, 2018). These dynamics necessitate a shift in marketing paradigms, influencing strategies and operational frameworks across industries (Kinzel, 2016). McKinsey & Company (2022) put forward that the dissemination of digital technologies during this disruptive era significantly impacts business operations, offering substantial opportunities for sectors and individuals adept at embracing these changes. Conversely, entities resistant or slow to adapt may struggle to sustain their market presence (Bughin & Woetzel, 2022).

With Thailand's population reaching approximately 70 million in 2022 (Worldometer, 2022), the Shan people, or Tai Yai, represent a significant ethnic minority group, particularly in Northern Thailand. Despite historical socioeconomic disadvantages and employment barriers due to citizenship status, a noteworthy shift has been observed among the Tai Yai. Many have transcended these limitations, achieved economic prosperity and acquired assets, reflecting attributes of diligence and entrepreneurial spirit (Chiang Mai A La Carte, 2022).

The COVID‑19 pandemic underscored these challenges, with widespread layoffs and business closures leading to increased unemployment. However, this period also unveiled new entrepreneurial avenues, with some individuals capitalizing on the emerging opportunities for business creation and success.

The objectives of this study were to explore a case study of a Tai Yai immigrant who leveraged such an opportunity to attain remarkable success. The detail of the study included background of the informant, opportunities arising during the disruptive era and how the informant seizure such opportunity, the impact of ethnic minority status and how he overcome it, and his future plans. This study researched through his journey, highlighting the traits and strategies that contributed to his achievement. Furthermore, this study examines the significance of his ethnic minority status in the context of entrepreneurship, offering insights into overcoming societal barriers to business success.

Literature Review
Entrepreneur and Entrepreneurship

Entrepreneurship is characterized by the capacity to initiate a new business venture, encompassing the assumption of associated risks and rewards as well as recognitions. Entrepreneurs are identified by their innovative spirit, contributing novel ideas, products, services, and operational methodologies to the business ecosystem (Hayes, 2022). Venkataraman (1997) articulates that entrepreneurship is closely linked to the synergy between the availability of business opportunities within a specific locale and the entrepreneurial individual's aptitude to capitalize on these opportunities. A critical attribute of successful entrepreneurs is their ability to identify and exploit business opportunities, judiciously manage resources, mitigate risks, and devise solutions to emerging challenges (Clouse et al., 2008). Adzo (2022) identifies ten pivotal characteristics that epitomize an effective entrepreneur, including creativity and innovation, a focus on growth and learning, commitment and drive, persistence and resilience, a strong work ethic, a will for risk‑taking, leadership skills, adaptability, proficient communication skills, and a deep‑seated passion for their business.

This study extends the discussion on entrepreneurship by examining the unique entrepreneurial journey of a Tai Yai immigrant entrepreneur in Thailand. It explores how the aforementioned entrepreneurial characteristics manifest in contexts characterized by

significant social and economic barriers. By analyzing how the entrepreneur recognizes and seizes opportunities within the disruptive era, this research contributes to a deeper understanding of entrepreneurship in immigrant minority communities. It also investigates the role of immigrant ethnic minority status in shaping entrepreneurial pathways, thereby bridging a gap in the existing literature on entrepreneurship in diverse cultural and socio-economic contexts.

Disruptive Innovation

Disruptive innovation, a concept introduced by Christensen and Raynor (2003), describes a type of innovation that forges new markets through the introduction of various principles, often rendering existing markets obsolete. This form of innovation typically emerges when a disruptive market entrant introduces alternative products or services that are more affordable and accessible, challenging the status quo of larger, established companies. As the process of innovation evolves, disruptors progressively enhance the value of their offerings, maintaining affordability and convenience. Importantly, disruptive innovation is not confined to tangible products alone; it also encompasses novel methodologies in production or delivery that improve accessibility or efficiency for consumers (Christensen & Raynor, 2003).

The relevance of disruptive innovation to this study lies in its potential to illuminate the entrepreneurial journey of a Tai Yai immigrant ethnic minority entrepreneur in Thailand. This research examines how the subject capitalized on disruptive innovations to carve out a new niche in the market, thereby overcoming both social and economic barriers inherent to minority status. By investigating the strategic exploitation of disruptive innovation within a marginalized community, this study contributes to a broader understanding of how entrepreneurial activities can be leveraged as a vehicle for social and economic advancement in the face of structural challenges.

Minority Group

Minority groups are defined as culturally, ethnically, or racially distinct populations that coexist within a society dominated by another group holding greater power and privilege. The role and influence of minority groups vary significantly across different social systems, largely dependent on the structural dynamics of the society and the relative strength and cohesion of the minority group itself (Encyclopedia Britannica, 2022b).

Ethnic minorities constitute a specific category of minority groups, characterized by shared attributes such as clan connections, language, nationality, or ethnicity. Often, these groups have histories of migration from their ancestral lands due to economic, political, or religious pressures, which in turn shapes their experiences and identities within new social contexts (Encyclopedia Britannica, 2022a).

This study focuses on the entrepreneurial endeavors of a Tai Yai immigrant ethnic minority entrepreneur in Thailand, a context that underscores the complex interplay between minority status and economic opportunity. By exploring the entrepreneurial journey within the framework of disruptive innovation and immigrant minority group dynamics, this research aims to contribute to a deeper understanding of how an immigrant ethnic minority entrepreneur navigates and leverages his unique positions. Specifically, it examines how the Tai Yai entrepreneur's immigrant minority status influences his business strategies and success in the digital marketplace, thereby offering insights into the broader implications of immigrant ethnic minority entrepreneurship in transforming socio-economic landscapes.

Methodology

This study employs a qualitative research methodology, focusing in-depth on a case study of a singular character. The data was collected in 2022. The research design is structured around an in-depth, qualitative case study approach, as advocated by Yin (2014), who emphasizes the utility of this method in exploring and understanding complex phenomena within the real-life contexts. Qualitative research, as noted in the literature, is particularly proficient at capturing the authentic essence of practical environments, allowing for a nuanced examination of the subject matter (Denzin & Lincoln, 2011).

Denzin and Lincoln (2011) further articulate that a case study can function as a comprehensive research method in its own right, offering a robust framework for investigating specific instances in a detailed and holistic manner. The methodology for this research is delineated as follows:

Informant

The informant for this study is an individual immigrant from an ethnic minority group who has achieved notable success as an entrepreneur by leveraging the opportunities presented during a period of technological disruption. The impact of the COVID-19 pandemic in 2019 caused a significant economic downturn, compelling many traditional retail businesses to terminate operations due to their inability to adapt to rapid technological advancements and sudden shifts in consumer behavior. This case study was chosen specifically because the informant's experience provides valuable insights into overcoming the challenges posed by an extraordinary economic climate and adapting to the profound changes in marketing technologies. To ensure ethical research practices, including the protection of the informant's identity, all personal details have been anonymized. Throughout this article, the informant will be referred to by the pseudonym "Zin."

Research Scope

The scope of this research encompasses the narrative arc of the informant's journey, beginning from his arrival in Thailand through to the establishment and successful operation of his online business within the context of a technologically disruptive era. This study meticulously applies the Kipling Method, commonly referred to as the 5W1H framework, to thoroughly investigate and understand the informant's experiences and the lessons derived therefrom. The 5W1H framework, which encompasses the queries of what, where, when, why, who, and how, serves as a comprehensive tool for data collection and analysis (Reyes, 2023; Möller, 2012). Utilizing this methodological approach enables the informant to reflect upon and articulate his experiences, offering insights from a personal perspective.

Data Collection Tools

The study utilized a semi-structured interview guide as the primary tool for data collection. To ensure the collection of comprehensive and in-depth data, additional questions were incorporated into the interview process as deemed necessary. Data collection was conducted through face-to-face interviews, facilitating a deeper understanding of the informant's perspectives, ideas, and experiences concerning the topics of interest. Moreover, the researcher engaged in an examination of the informant's social marketing efforts on TikTok, including an analysis of viewer comments, to glean insights into his business development strategies and customer engagement.

At the onset of the interview and subsequent data collection phases, the researcher explicitly sought and obtained verbal consent from the informant to record the interviews and gather data through other means. The interview guide was organized into four primary sections:

1. Background of the informant
2. Opportunities arising during the disruptive era
3. Impact of ethnic minority status
4. Future plans

This structure aimed to systematically explore the informant's journey, highlighting the critical elements of his entrepreneurial success and the influence of his ethnic minority status.

Data Analysis

Data analysis was conducted through a detailed content analysis process, which involved transcribing and summarizing the interview findings and integrating observations from the informant's TikTok livestreams. The analysis framework was structured around the 5W1H questions (what, where, when, why, who, and how), providing a comprehensive lens through which to examine the collected data. The results of this analysis are presented in a narrative format within the paper, incorporating direct quotations from the informant to enrich the discussion and provide authentic insights into his experiences and perspectives.

Results

The results are provided below following the 4-part question list as discussed in the Data Collection Tools part.

Background of Zin

Zin's journey from Shan State in Myanmar to settle down in Thailand summarizes the resilience, adaptability, and an entrepreneurial spirit of a person navigating through the complexities of migration, integration, and economic empowerment. At the age of 17, inspired by the success stories of fellow Tai Yai migrants, Zin started on a life-altering journey to Thailand, seeking opportunities that were absented in his native Myanmar, a country mired in political unrest and economic stagnation under a military regime. This backdrop set the stage for Zin's pursuit of a better life, marking the beginning of a narrative filled with challenges, learning, and eventual success.

Upon his arrival in Thailand, Zin, like many of his compatriots, entered the workforce as an illegal immigrant, finding employment at a construction site in Chiang Mai. This period of his life was characterized by hard labor and low wages, with Zin and his fellow workers earning a mere 65 Thai Baht per day. The turning point came in 2004 when the Thai government offered illegal immigrant workers the chance to legalize their status. Seizing this opportunity, Zin obtained what is colloquially known as a "White Card," granting him a legal migrant work permit. This legal recognition was pivotal, offering Zin a semblance of stability and hope for the future.

Despite the linguistic and cultural barriers, Zin's unwavering commitment to self-improvement and integration into Thai society was evident. With no prior knowledge of Thai, he embarked on a self-taught journey to master the language, relying on interpersonal interactions and educational resources. His efforts to bridge the linguistic divide underlined his resilience and determination to build a new life in Thailand. This linguistic achievement not only facilitated Zin's social integration, but also expanded his employment opportunities, marking a significant stride towards self-reliance and economic stability.

The shift from construction work to employment at a swine farm represented a significant improvement in Zin's working conditions and quality of life. Although the initial

salary was comparable to his earnings from construction, the job at the swine farm came with added benefits, including medical welfare and housing for his family. This job transition highlighted Zin＇s strategic adaptability and his continuous pursuit of better employment conditions. Over time, Zin's skill set diversified, encompassing construction, maintenance, and repair work, further enhancing his income through additional compensation. This versatility in skills not only improved his financial standing but also reinforced his value as a multifaceted worker.

Zin＇s personal life flourished in parallel with his professional growth. His marriage at 19 to a woman he met at a Tai Yai event was built on a foundation of mutual support and shared aspirations. Together, they navigated the challenges of life in Thailand, working diligently to save money and invest in their future. Their collective efforts enabled them to support their son＇s higher education, accumulate savings, and acquire significant assets, including a house and a pickup truck. These achievements are testaments to Zin's strong work ethic, commitment, and drive, qualities that have been instrumental in his journey from a migrant worker to a successful, integrated member of Thai society.

Reflecting on his journey, Zin's sense of satisfaction and accomplishment is profound. His narrative transcends the personal to highlight the broader experiences of ethnic minority migrants in Southeast Asia. Zin＇s story illustrates the transformative impact of legal status, linguistic acquisition, and employment opportunities on the lives of migrants. It underscores the potential for economic and social mobility in the face of adversity, offering insights into the resilience and entrepreneurial spirit required to navigate the challenges of migration and integration.

Through Zin's experience, this study sheds light on the complexities of ethnic minority migration, the importance of legal recognition and social integration, and the profound impact of personal agency and community support in achieving economic empowerment and stability. His journey from a state of vulnerability to one of success and fulfillment serves as a compelling case study of resilience, adaptability, and the entrepreneurial spirit among ethnic minority migrants in Thailand.

Opportunity in the Disruptive Era

The beginning of the COVID-19 pandemic in 2019 marked a significant life changing in Thailand, catalyzing a widespread lockdown that significantly disrupted traditional business operations. This period of upheaval led to the closure of numerous businesses, yet simultaneously, it paved the way for the emergence of new opportunities within the online marketplace. As physical movements were restricted, consumer behaviors underwent a dramatic shift, transitioning from in-person shopping experiences to digital platforms. This shift was not limited to commerce alone; social lifestyles also evolved, with an increasing reliance on social media for connection and entertainment. Platforms like Facebook and TikTok saw a substantial rise in the user engagement, setting the stage for innovative online business models.

Zin, whose initial use of Facebook was to maintain connections with friends and family, gradually immersed himself in the digital landscape. He began exploring live streams for both product sales and entertainment, eventually extending his digital footprint to TikTok. Zin＇s raid into content creation on TikTok, primarily through singing, garnered a modest following, enhancing his engagement with the platform. "*I started to sing and broadcasted myself online vis platform like TikTok. I enjoyed myself very much and I started to have some followers. I was delighted of their positive feedback,*" Zin reflects, highlighting the joy derived from his early digital interactions.

However, Zin＇s life took an unexpected turn following a serious accident at a construction site, which left him hospitalized and significantly impaired. During his recovery,

a friend recommended a black sesame pill, marketed for its restorative properties. Despite its steep price, Zin's experience with the product was profoundly positive, catalyzing a rapid and remarkable recovery. This personal testament to the product's efficacy was a pivotal moment for Zin, inspiring him to delve into the world of multi-level marketing (MLM) as a sales member for the host company that produced the black sesame pill.

Seizing this new opportunity, Zin embarked on a strategic journey to market the product and other company offerings through live streams. He decorated a home studio, dedicating a corner of his house for this purpose, and began broadcasting regularly. Initially, his live streams attracted minimal viewership, but undiscouraged, Zin persisted. His commitment to a fixed streaming schedule, combined with a diversified content strategy and attention to presentation, gradually built a substantial following. Zin's approach to engaging his audience was threefold: diversifying discussion topics to maintain viewer interest, ensuring a professional appearance and setting to build trust, and establishing a consistent streaming schedule to foster viewer loyalty.

These strategies highlighted Zin's entrepreneurial shrewdness, particularly his risk-taking ability, communication skills, and leadership qualities. The growth of his audience, eventually exceeding 10,000 viewers on some occasions, was a testament to his effective engagement strategies and his deep belief in the products he endorsed. Through this journey, Zin not only navigated the challenges posed by the disruptive era but also leveraged the opportunities it presented, transforming a period of personal adversity into a thriving online business venture.

Zin's story exemplifies the potential for individual resilience and innovation in the face of widespread disruption. His transition from a traditional laborer to a successful online entrepreneur encapsulates the dynamic shifts in the global marketplace, highlighting the critical role of digital platforms in facilitating new forms of entrepreneurship. Through strategic adaptation and a commitment to genuine engagement, Zin tapped into the evolving consumer landscape, marking his place within the digital economy of the disruptive era.

Effects of Ethic Minority Status

Zin's journey from Myanmar to Thailand encapsulates the resilience and entrepreneurial spirit of the Tai Yai ethnic minority amidst adversity. Under Myanmar's military regime, the Tai Yai community faced severe oppression, with their villages subjected to arbitrary raids and destruction by soldiers, leaving them without access to basic welfare and education. This backdrop of hardship underscored Zin's early life and the lives of many Tai Yai people, setting a stage of struggle that persisted even as they sought better opportunities in Thailand. As undocumented workers in Thailand, Zin and his peers were underpaid and devoid of social welfare, a testament to the challenges they faced in a foreign land.

Despite these adversities, the Tai Yai community's resilience was evident in their strengthened bonds and collective determination to improve their circumstances. The Thai government's initiative to legalize undocumented immigrants through the "white card" system offered a semblance of hope, albeit with continued challenges, particularly in the job market where Tai Yai workers found themselves at a disadvantage due to the preference for local labor and the bureaucratic hurdles of work permit renewals. Zin's reflection on these experiences highlights the persistent barriers to employment and social integration faced by the Tai Yai community in Thailand.

However, Zin perceived his ethnic minority status not as a limitation, but as an opportunity, particularly in the realm of online marketing. His bilingual broadcasts in Thai and Tai Yai resonated with the Tai Yai community, garnering a significant following on social media. This unique approach of leveraging his ethnic identity enabled Zin to connect deeply with his audience, offering products and services that met the specific needs and preferences

of the Tai Yai people. Zin's insight into the cultural nuances of health and wellness preferences among Tai Yai, as opposed to the general Thai population's skepticism towards food supplements, underscores the importance of cultural competency in entrepreneurship.

Moreover, Zin's online platform served as a conduit for sharing valuable information and experiences relevant to the Tai Yai migration into Thailand. From practical advice on legal documentation and banking to cultural engagements and events, Zin's content fostered a sense of community and support among his followers. This approach not only solidified his social media presence, but also exemplified a model of entrepreneurship that transcends mere commercial transactions to encompass social empowerment and community building.

Zin's ability to navigate the complexities of ethnic minority status, coupled with his entrepreneurial acumen, has enabled him to carve out a successful niche in the online marketplace. His story is a compelling narrative of overcoming adversity through innovation, community engagement, and the strategic leveraging of cultural identity. It highlights the potential of digital platforms to offer economic opportunities and a sense of belonging for marginalized communities, demonstrating the transformative power of entrepreneurship in bridging cultural and economic divides.

Future Plan

Zin's venture into the online business world over the past eight months has been a journey of profound personal and professional growth. Initially shy and unsure of how to engage with others, Zin discovered his voice and confidence through live streaming, transforming from a reticent individual into a charismatic and effective communicator. "*I used to be unconfident being in front of people because I do not know how to say things properly. But after getting myself familiar with broadcasting myself, I felt much more comfortable being myself in front of the camera and talk about what I like,*" Zin reflects with a smile.

This new confidence has translated into significant success, with his audience expanding from none to peak of over 10,000 viewers. Motivated by this growth and the lessons learned from fellow online entrepreneurs, Zin is committed to continuing and expanding his online business. Despite starting with modest earnings, his revenue has grown sixfold in just eight months, a testament to his dedication and the potential of his venture.

Yet, Zin remains pragmatic about his professional priorities. His work at the swine farm and additional income from construction jobs continue to form the backbone of his financial security. The online business, while increasingly lucrative, is considered an additional stream of income rather than his primary focus.

Careful due diligence on the MLM company's credibility and the safety of its products underscores Zin's cautious approach to business. The company's mission resonates deeply with him, reinforcing his belief in the business's low-risk, high-reward model. As technology evolves rapidly, Zin remains committed to continuous learning and staying open to new opportunities. Above all, his vision for the future is clear: achieving financial stability while ensuring a happy and fulfilling family life.

Discussions

This case study reveals the inspiring journey of Zin, a Tai Yai individual from Shan State, Myanmar, who migrated to Chiang Mai, Thailand, in pursuit of a better life. Through Zin's narrative, we explore the embodiment of entrepreneurial characteristics that are pivotal for success, including creativity, innovation, commitment, resilience, and a strong work ethic, among others (Adzo, 2022). Zin's story is a testament to the potential of individuals from ethnic minority backgrounds to overcome adversity and achieve entrepreneurial success.

Zin's transition from a life marked by hardship in Myanmar to becoming a successful entrepreneur in Thailand underscores the significant challenges faced by ethnic minorities. These challenges include limited access to education and social welfare, legal and socio-economic barriers in migration, and the constant need to adapt to new environments. Despite these obstacles, Zin and his peers cultivated a strong community bond and work discipline, essential qualities that have been identified as crucial in navigating the entrepreneurial landscape (Yi et al., 2022).

The literature suggests that the adversities experienced by individuals like Zin can foster a greater propensity for entrepreneurship, characterized by an enhanced tolerance for risk and a drive for innovation (Caliendo et al., 2010). This aligns with Zin's innovative approach to leveraging social media platforms for business, highlighting his creative and adaptive strategies in a rapidly changing digital economy. His ability to continuously learn and grow, despite having a limited formal education, challenges conventional narratives about the prerequisites for entrepreneurial success, echoing research that questions the direct correlation between education level and business achievement (Peters & Bridjlal, 2011).

Zin's entrepreneurial journey also illuminates the role of personal and cultural identity in business strategy. His bilingual communication skills and deep understanding of the Tai Yai community's needs allowed him to foster a strong connection with his audience, leveraging his ethnic minority status as a unique value proposition (Ivanova‐Gongne et al., 2021). This approach not only facilitated business growth, but also contributed to the preservation and promotion of Tai Yai cultural heritage, illustrating the multifaceted impact of entrepreneurship on community cohesion and cultural diversity.

The case study of Zin is a small‐scale version of the broader dynamics of immigrant entrepreneurship, which plays a critical role in the global economy. Immigrants bring diverse perspectives, innovative ideas, and a wealth of cultural knowledge, enriching the entrepreneurial landscape and fostering economic dynamism (Li et al., 2018). Studies have shown that the interaction between immigrant and native populations can lead to knowledge spillovers, enhancing creativity and innovation within the entrepreneurial ecosystem (Hernandez, 2014; Hornung, 2014; Rahman et al., 2014).

The increasing rates of migration, driven by global issues such as war and climate change, highlight the importance of understanding and supporting immigrant entrepreneurship. Zin's success story offers valuable insights into the resilience, adaptability, and an entrepreneurial spirit of ethnic minorities, underscoring the need for policies and programs that facilitate their integration and economic participation. As Zin aptly puts it, "*I insist that everyone of us have own ability and we should do what we want to do now. Do not hesitate, there is nothing without risk. Simply be mindful of how to handle the upcoming challenges. If opportunity comes into your way, grasp it*," reflecting the ethos of seizing opportunities amidst uncertainties.

In conclusion, Zin's entrepreneurial journey from a marginalized ethnic minority in Myanmar to a successful online entrepreneur in Thailand embodies the essence of resilience, innovation, and cultural identity. His story not only enriches our understanding of the

entrepreneurial potential among ethnic minorities but also calls attention to the broader implications of immigrant entrepreneurship for economic diversity and social integration. Further research is necessary to study deeper into these themes, providing a fuller understanding of the ways in which immigrants and ethnic minorities can contribute to and benefit from a dynamic, inclusive economy.

Conclusion and suggestions

While this case study provides valuable insights into the entrepreneurial journey of Zin, a Tai Yai ethnic minority entrepreneur in Thailand, it also opens avenues for further research. The nature of focusing on a singular narrative, though rich in detail and depth, means that the experiences of other ethnic minority entrepreneurs in Thailand and beyond might differ. This specificity is not a shortfall but rather a foundation upon which broader explorations can be built.

The study's concentrated scope on one individual's experience presents a unique opportunity to research deeply into the complexities and nuances of ethnic minority entrepreneurship within a specific socio-cultural and economic context. It serves as a detailed exploration of the interplay between individual agency, cultural identity, and entrepreneurial success in a challenging environment.

Acknowledging this, future research stands to gain by extending the investigation to include comparative analyses across diverse ethnic groups and geographical settings. Such expansion could enrich our understanding of the varied pathways to entrepreneurship among ethnic minorities, offering more generalizable insights and highlighting universal themes as well as distinct differences.

In embracing the study's focused approach as a stepping stone, we invite a wider academic conversation about the role of culture, identity, and resilience in entrepreneurship. This research paves the way for a comprehensive exploration of ethnic minority entrepreneurship, encouraging a multidimensional inquiry that spans different cultures, economies, and societal contexts.

Recommendation

This study has illuminated the entrepreneurial journey of a Tai Yai ethnic minority entrepreneur within Thailand, opening a vista onto the interplay between migration, entrepreneurship, and ethnic identity. Given the emerging nature of research in this domain, particularly within the Thai context, there exists a fertile ground for academic inquiry and practical exploration. To build upon the foundational insights provided by this case study, the following recommendations are proposed to extend the scope and depth of understanding in this vital area:

1. Broadening research with quantitative methods

Future studies should consider incorporating quantitative research methodologies to collect data from a broader population of Tai Yai immigrants and possibly other ethnic minority groups engaged in entrepreneurship in Thailand. This approach can facilitate the identification of prevalent entrepreneurial environments, essential skills, and traits that contribute to the success of immigrant entrepreneurs. Quantitative data will complement qualitative insights, offering a more holistic understanding of the factors influencing entrepreneurial outcomes among ethnic minorities.

2. Exploring diverse entrepreneurial environments

Further research is encouraged to examine the variety of entrepreneurial environments within Thailand, including urban versus rural settings, different industries, and the impact of

digital transformation on immigrant entrepreneurship. Understanding how these environments shape the entrepreneurial journey can provide valuable insights into support systems, policies, and initiatives that can enhance the success rates of immigrant entrepreneurs.

3. Identifying key skills and traits

Building on the rich narrative of individual experiences, subsequent studies should aim to identify and analyze the key skills and traits that are most conducive to entrepreneurial success among immigrants. This investigation can help in developing targeted training and development programs, tailored to the unique needs of ethnic minority entrepreneurs.

4. Policy implications and support structures

It is recommended that policymakers and stakeholders leverage the findings from such research to create more inclusive and supportive environments for immigrant entrepreneurs. This could include simplifying legal procedures, providing access to financial resources, offering language and business training programs, and fostering networks that connect immigrant entrepreneurs with local business communities.

5. Cross-cultural comparative studies

Engaging in cross-cultural comparative studies can provide a richer, more nuanced understanding of immigrant entrepreneurship as a global phenomenon. Such research can uncover universal challenges and opportunities faced by immigrant entrepreneurs, facilitating the exchange of the best practices and innovative solutions across different contexts.

By pursuing these recommendations, the academic and professional communities can significantly contribute to the empowerment of immigrant entrepreneurs, not only in Thailand but globally. This research trajectory not only enriches our academic understanding but also holds the promise of fostering more inclusive, and resilient entrepreneurial ecosystems.

New knowledge and the effects on society and communities

The case study of Zin, a Tai Yai immigrant entrepreneur in Thailand, provides new knowledge in understanding the intersection of ethnicity, digital entrepreneurship, and socio-economic development. This knowledge yields several effects on both societal and economic levels.

New Knowledge

1. Digital entrepreneurship as a pathway for immigrant ethnic minorities

Demonstrates how ethnic minority entrepreneurs can leverage digital platforms to overcome traditional barriers to business success, offering a model for economic empowerment and integration.

2. Cultural capital in business

Reveals the significance of cultural identity and community connections in building successful business ventures, suggesting that cultural heritage can be a unique asset in the entrepreneurial process.

3. Resilience and innovation in adversity

Highlights the critical role of resilience, adaptability, and innovative thinking in navigating the challenges of entrepreneurship, particularly for those from marginalized backgrounds.

Effects on Society and Communities

1. Economic Integration

Zin's entrepreneurial journey underscores the potential for ethnic minority entrepreneurs to contribute to economic diversity and growth, fostering a more inclusive economy that values and utilizes the unique contributions of all its members.

2. Cultural Preservation and Promotion

By integrating Tai Yai cultural elements into his business, Zin not only finds success but also plays a crucial role in preserving and promoting ethnic heritage, enriching the cultural tapestry of Thai society.

3. Inspiration for Future Entrepreneurs

The visibility of Zin's success serves as an inspiration to other individuals from similar backgrounds, encouraging them to pursue entrepreneurship. This has the potential to foster a more diverse, and innovative business landscape, strengthening community ties and enhancing social cohesion.

In sum, Zin's story adds to our understanding of the ways in which entrepreneurship can serve as a vehicle for social and economic advancement, particularly for those from marginalized backgrounds, and underscores the importance of supportive ecosystems that recognize and leverage the diversity within society.

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Sustainable Knowledge, Understanding, and Public Participation in the Construction of Water-Retaining Structures: A Case Study of Kamphaeng Sao Subdistrict, Muang District, Nakhon Si Thammarat Province, Thailand

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Abstract

        This study investigates the realms of 1) Level of the knowledge and understanding in the construction of water-retaining structures, and 2) Public participation pertaining to the construction of water-retaining structures. Employing a mixed-method approach, it combines both quantitative and qualitative research techniques. For quantitative research, a questionnaire-based survey was conducted on 363 Rural Community Members in Agriculture, underwent scrutiny through measures such as frequencies, percentages, mean, and standard deviation. Concurrently, qualitative data emanated from interviews and observations conducted with 29 key informants, comprising community members engaged in agriculture, government officials, students, and leaders. The findings of the study were as follows: 1) Level of the knowledge and understanding in the construction of water-retaining structures, in all aspects was high spanning various facets of construction, including land surveys, design, materials, site planning, and the construction process itself. 2) Public participation: the participants exhibited a profound understanding of water-retaining structure erection, underlining the significance of public participation. Community-driven construction of water-retaining structures promotes decision-making, unity, and mutual benefits. Utilizing local resources, especially bamboo, aids environmental preservation. The adoption of bamboo weirs enhances cooperation, ensuring year-round water access and strengthening community bonds. Decentralized responsibilities foster collaboration, improving community relationships. These structures yield intellectual, economic, and social gains, benefiting agriculture and reducing drought risks. Ongoing evaluation and stakeholder collaboration ensure project success, enhancing community knowledge, understanding and sustainability. This collaborative culture encourages inclusivity and long-term stability, reducing external support dependency.

Keywords: Public participation, Sustainability, Construction, Water-retaining structures

Introduction

The problem macro- overview regarding the use of water resources in Thailand, including the construction of dams to block the flow to store water for use throughout the year by government agencies. Take responsibility by pointing out issues of incorrect water use with the knowledge and understanding of general water users. The southern region of Thailand continues to grapple with torrential rainfall; however, as it transitions into the hot season, certain pockets confront drought conditions, marked by low humidity and extremely hot weather. The Thai Meteorological Department predicts a looming water scarcity trend. Consequently, local communities, in their bid to alleviate the agricultural hardship exacerbated by drought conditions and provide timely assistance to affected farmers, are resorting to a wellspring of traditional wisdom: the construction of "Fai Cha Lor Nam" or water- retaining structures. These structures play an instrumental role in assisting disaster- affected individuals and ameliorating the agricultural adversities wrought by drought (The Center for Monitoring and Addressing Agricultural Disaster Risks in Nakhon Si Thammarat Province, 2023).

Water- retaining structures, constructed manually to store water and forestall flooding, serve as the bulwark against the perilous waters originating from rivers and streams, particularly during the rainy season. Moreover, these structures offer a myriad of benefits, including shielding against soil erosion and retaining moisture for an extended duration. Water- retaining structures play a pivotal role in fortifying biodiversity, thereby benefiting insects, wildlife, and a diversity of plant species. Furthermore, they serve as reservoirs during periods of drought. These structures are crafted from indigenous materials, such as wood and stones. The construction process commences by carving wooden elements and positioning poles as markers. In areas with sandy soil, sandbags are deployed within the structure, whereas rocky terrain sees the placement of rocks. The size of the water- retaining structure correlates with the dimensions of the stream it intends to service, thereby augmenting the water supply for agriculture during arid seasons (Department of Nature Conservation and Land, 2023; Warakul, & Buddhawong, 2015).

Within the confines of Kamphaeng Sao Sub- district, Mueang District, Nakhon Si Thammarat Province, several water-retaining structures have been erected in diverse locations. In light of the escalating problem of water scarcity within the agricultural sector, the imperative to introduce comprehensive water management strategies has gained prominence. The construction of water-retaining structures has emerged as a pivotal remedy for alleviating water scarcity and enhancing the moisture content in forested areas. Various stakeholders have been at the vanguard of encouraging the proliferation of these structures, serving as a source of inspiration for community collaboration and engagement in this endeavor. Notably, this project has been achieved without the utilization of government funds, with community members contributing both resources and labor toward the realization of the project's central objectives. The initiative was inaugurated through a collective discussion, followed by consensual decision-making and hands-on implementation. Expert consultants and mentors were enlisted to augment knowledge transfer, drawing from the expertise of local villagers skilled in the art of crafting water-retaining structures from bamboo. These artisans harnessed sand from nearby streams and employed techniques involving the knotting of ropes from the water source to the structure's terminus (Ok Nation, 2015). The preservation of forests and water resources holds cardinal importance, especially for communities residing in these regions, who are reliant on the symbiosis of forests and water sources to sustain their livelihoods. This reliance becomes particularly conspicuous when communities can judiciously harness forests and water for agricultural benefits, contingent on the seasons. Consequently, the equilibrium of forests and water resources assumes paramount significance, empowering communities to become

self- sufficient and ensure their long- term survival (Nikornkul et al. , 2018) . Villagers in community have a way of life that is bound to nature, dependent on each other in terms of occupation and livelihood. The villagers in the community understand the conservation upstream forest. People pay great attention and realize the importance of watershed forests, and construction of water- retaining structures (Mangana & Vetchapitak, 2020) . The community has adeptly harnessed traditional wisdom to construct efficient water- retaining structures, using wooden stakes for support and logs as foundations to manage water flow and sediment retention. Furthermore, steel mesh containers are deployed to secure stones; thus, reinforcing structural stability. The conservation and management of natural resources have been devised as participatory endeavors, aimed at preserving the ecosystem's delicate balance. Local knowledge and indigenous wisdom have been seamlessly integrated into the management framework, effectively facilitating knowledge dissemination (Sukkorn, 2014).

The consolidation and promotion of collaboration among urban sectors that have embraced water- retaining structures have yielded substantial economic benefits for the community. Specifically, the agricultural regions have become more fertile, benefitting from an augmented water supply, which efficiently averts flooding and regulates water flow. These measures boost the chances of encountering a richer diversity of fish species. Moreover, an exhaustive analysis of cooperation models, derived from comprehensive studies and research materials, serves as an indispensable blueprint for the success of this project (Yotarak, et al., 2019). The involvement spans decision-making, implementation, public participation in benefits, and engagement in evaluation and follow- up processes (Cohen & Uphoff, 1981; Wattanasiritham, & Phetmak, 2008; Puang- ngam, 2016) . Therefore, we embark on the exploration: 1) Level of the knowledge and understanding in the construction of water- retaining structures, and 2) Public participation pertaining to the construction of water- retaining structures, using Kamphaeng Sao Subdistrict, Muang District, Nakhon Si Thammarat Province, Thailand, as our case study. The research objective emphasizes the study of knowledge and understanding about water storage correctly and correctly in order to use water resources systematically and sustainably. Water users must have knowledge about storing water to be sufficient for use. The central query revolves around the depth of knowledge, involvement, and sustainability in the creation of water-retaining structures. This holistic insight can potentially inform policy recommendations for pertinent entities, such as local government organizations and water management authorities in the area. This initiative aims to serve as a model for collaboration across all sectors. Sustainable public participation in water- retaining structure construction not only fosters economic prosperity by generating fresh income for the community and participants, particularly during activities associated with these structures but also augments earnings for local tourism and food industries in the vicinity. Furthermore, the social advantages include the consolidation of the community through activities pertaining to water-retaining structures, thereby providing opportunities for individuals to congregate, share experiences, and enrich their knowledge and understanding of cultural innovations and water-retaining structures. This, in turn, fortifies interpersonal bonds and mutual support within the community.

Literature Review

The context of Kamphaeng Sao Subdistrict, and Water- Retaining Structures: Kamphaeng Sao Subdistrict includes nine villages, namely Village 1 Suan Phol, Village 2 Na Nod, Village 3 Yan Suea, Village 4 Chan, Village 5 Tin Na, Village 6 Klang, Village 7 Huai Prang, Village 8 Paeng Sao, and Village 9 Nong Lung. The area offers a population of 8,193 individuals, with 80 percent actively engaged in agriculture. Their agricultural endeavors include the cultivation of economically significant crops, including durian, longan, rubber, cassava, and various other plants. The subdistrict covers an approximate area of 38.43 square kilometers, characterized by flat terrain and natural water sources, featuring four streams, one canal, and three rivers. Given the predominant focus on rubber plantations, fruit orchards, and crops, water scarcity issues frequently afflict the residents. Consequently, it becomes imperative to institute comprehensive water management strategies to tackle these water scarcity challenges. Hence, the construction of water- retaining structures in Kamphaeng Sao Subdistrict, Mueang District, Nakhon Si Thammarat Province, emerges as a pivotal solution to address the escalating water shortage and augment local moisture levels. The project actively encourages the involvement of diverse stakeholders, inspiring the community to join forces in this endeavor. Furthermore, the initiative entails contributions of resources and labor without reliance on government funding, aiming to empower the community and emphasize their public participation in the transformative process. The project commences with the collective generation of ideas and collaborative decision-making. Subsequently, the project transitions to the implementation phase, with the engagement of expert advisors and mentors providing guidance, drawing from the expertise and wisdom of local residents skilled in constructing water- retaining structures from bamboo, employing local sand, and utilizing techniques for tying ropes from the water source to the endpoint (Office of the Kamphaeng Sao Subdistrict Administrative Organization, 2023; Department of Health Service Support, 2023).

General Knowledge about Water- Retaining Structures: Community Organizations Development Institute (2016) highlights water- retaining structures as a means of water management, reviving local wisdom while nurturing an ecosystem that coexists harmoniously with society, improving the local economy through self- sustained practices, and rejuvenating traditional community support systems. Rakchim (2016) underscores that water- retaining structures represent a local wisdom that has emerged in the southern region of Thailand, aiming to employ natural materials within the community to address issues related to flooding, water scarcity, and groundwater resources. During the rainy season, these structures play a pivotal role in water storage and flood prevention in agricultural areas, while they release water during dry spells, ensuring a consistent year- round water supply. The Office of Conservation and Restoration of Water Sources (2017) emphasizes that water- retaining structures, also known as check dams, serve as tools for creating moisture, conserving and restoring forests, reinstating river source fertility, and promoting biodiversity. These structures act as barriers placed in small streams, rivers, or sloped areas to control water flow. Moreover, the preparation and construction of check dams, as mentioned: Sasadee et al. (2018) mention the use of mixed check dams in constructing hybrid check dams, utilizing natural materials such as branches, trees, sand, soil, rocks, and gravel, following regional wisdom and site suitability. The Royal Irrigation Department (2016) outlines the construction steps for check dams based on the royal initiative, which includes surveying suitable topography or riverbeds, specifying the type and design, and planning the construction. It further stresses the need for adhering to specified design, size, and materials, ensuring the dam's strength to withstand water flow without disrupting the ecosystem.

The concepts and theories related to public participation: The concepts and theories related to public participation, as discussed by Thongkachock & Thongkachock (2017) and Hanghon et al. (2018), describe the promotion of community and public participation and the

necessary regulations that should exist in the form of local laws. The public participation of citizens, community organizations, local leaders, local government agencies, state agencies, and private sectors fosters collaborative thinking, decision‒making, problem‒solving, shared benefits, and joint evaluation. On the other hand, Songdechtar (2021) discusses the concept revolving around the requirement of public participation and the implementation of comprehensive and inclusive strategies to engage stakeholders effectively. This entails the strategic coordination of operations across all sectors, the formulation of pragmatic policies, plans, projects, or initiatives that align with community‒centric policies. These endeavors are aimed at improving the quality of life within the community, including the identification of issues, planning, execution, and the assessment of these initiatives. Public participation is a dynamic process in which the community actively engages in decision‒making, starting from issue identification, through project engagement, and extending to monitoring and evaluation. This process guarantees that budget allocations are warranted for community development, ultimately leading to an improved quality of life within the framework of public participation. The United Nations (1998) discusses forms of public participation that include voluntary or self-organized engagement, where individuals or groups independently address issues without external aid. This form of public participation is self‒initiated and operates independently without dependence on third‒party support. It can be incentivized but requires government endorsement. This model is prevalent in developing countries. Mandatory public participation takes place when involvement is aligned with government policies, enforced by government authorities or coercion. Those who transgress these mandates face immediate repercussions, although these lack any lasting impact, as they lack public support and yield no positive outcomes.

Also, Phongphook, & Bodeerut (2021) proposed plans and decisions for the local community to collaborate effectively in development meetings. Both the community and the natural environment are pivotal to the development process, requiring collaborative endeavors and local‒level coordination. Operations and practices are executed under the oversight of a village development committee, and the involvement of the local community improves the progression. The community's cooperation in the process is predicated on individual benefits. Nevertheless, these advantages can precipitate conflicts within the community. Moreover, there is an absence of ongoing monitoring and evaluation conducted by the community, which has repercussions for long-term sustainability in the future. Bungmoom & Zumitzavan (2018) state that public participation involves community engagement in local development, beginning with problem identification, cause analysis, and finding solutions. The aim is to define operational procedures and techniques that align with the local setting and its potential. Promoting internal educational sources and employing technology facilitate convenient access to information and expression of viewpoints. Public participation serves as a vital foundation, ensuring that all community members can enjoy a content and sustainable existence in their area. Building upon the framework proposed by Muhammad-Ali et al. (2023), a cooperation and public participation network has been established within the community. Public relations campaigns serve to disseminate knowledge, motivate, and raise awareness. Adequate resources, equipment, personnel, and budget allocation should be made accordingly. In line with the findings of Andrew & Stiefel (1979), public participation includes involvement in decision‒making, engagement in implementation processes, public participation in reaping benefits, and engagement in evaluations. As per Pricklek et al. (2022), in summary, public participation includes participating in decision-making, engaging in implementation processes, taking part in reaping benefits, and participating in evaluations.

Cohen & Uphoff (1981) Wattanasiritham, & Phetmak (2008, and Puang-ngam (2016), The specified forms of public participation are as follows: Decision Making: This entails active engagement in decision‒making processes through discussions, mutual consultations, and the

selection of activities or directions deemed most appropriate or optimal. Decisions are reached collaboratively to plan for development, formulate policies, define objectives, methods, strategies, and allocate resources. Implementation: This entails offering support for resources, participating in management, and coordinating collaborative endeavors. It involves actively participating in the execution of activities. According to Namburi (2019), discussing public participation in implementation entails contributing by aiding with financial resources, materials, and labor, or engaging in the management of tasks, coordinating efforts, and seeking external assistance. The aim is to collectively achieve the shared goals of the group and promote a sense of unity and shared responsibility within the community. Public participation in reaping the benefits is also crucial. Khamphilaanont (2007) highlights that community benefits from activities include material, social, and personal gains, both tangible and emotional. Public participation in evaluation involves the engagement of the community in assessing project outcomes through various processes, which drives the entire development process. This process places emphasis on planning, implementation, and the collective utilization of benefits. It is of utmost importance to participate in a comprehensive, suitable, feasible, and beneficial evaluation and monitoring process to ensure successful development according to the objectives (Supawong & Rattanachuwong, 2022; Joomsoda, & Tirasuwanvasee, 2022). From the perspectives of various scholars, including Maslow (1943) and Balraj (2017), who address human necessities with a special emphasis on water as vital for survival, public participation becomes a guiding principle in management. This fosters cooperation to enhance community benefits. Active community involvement, efficient budget utilization, resource management, conflict reduction, and responsiveness to needs all contribute to increased community cohesion and attachment, creating a more tightly knit community.

The related research studies: Mangana & Vetchapitak (2020) highlighted that the community's way of life is intricately tied to nature, relying on it for both their livelihoods and living conditions. Villagers comprehend the vital role of conserving watershed forests and actively participate in the construction of check dams aligned with their needs. Community-based research informs their decisions, and adequate funds and resources are made available through donations. Villagers possess a strong sense of responsibility for conserving natural resources, which fosters pride and unity within the community. Varitwuttikul et al. (2021) found that communities across different areas experience common water issues such as drought, flooding, erosion, and scarcity. These problems are exacerbated by insufficient water storage. Community-led efforts involve the construction of storage facilities, check dams, and erosion barriers to mitigate challenges and ensure sustainable water management. Chasuwan & Sanpugdi (2019) emphasize that holistic water management, including the construction of check dams, necessitates the mobilization of resources and the engagement of communities at various stages. Collaboration at provincial and local levels, involving people, finances, materials, and expertise, is crucial. This approach fosters public participation, enabling them to identify issues, devise solutions, implement strategies, and monitor outcomes. Successful implementation relies on the resilience of structures, ensuring effective water distribution post-monsoon. This initiative positively impacts local economies, social well-being, and the environment, fostering sustainable development. Finally, Buntao & Thaochalee (2020) found that sustainable water management arises from applying the wisdom of the royal family in water management to address water issues in daily life. This is achieved by actively engaging community members and emphasizing collaboration as a crucial mechanism. Constructing check dams collectively is a significant component of this communal effort to ensure sustainable water resources.

Khamsaen, Chamnanputthiporn, & Yotharak (2018) underscore the importance of effective policy formulation, which stems from addressing people's concerns, translating problems into policies, and selecting optimal solutions. Governments launch water resource

initiatives, such as dams, involving communities in cooperative water management. Committees devise resource plans, which are subject to annual monitoring by government agencies. Public participation begins at policy creation, fostering self-sufficiency, and allowing locals to manage resources independently. In addition, Konwong et al. (2021) found that promoting water management involves large, medium, and small-scale systems. Government agencies have established procedures for planning and constructing water management infrastructure. Water allocation in downstream regions follows a systematic approach. Information is disseminated for water management, and user groups are formed to negotiate agreements concerning water usage in irrigation zones. Communities with robust capabilities maintain ongoing management committees. However, communities without management committees for water management structures often face damages. Panyasean et al. (2023) observed that raising awareness and enhancing the learning process of target groups and networks create a sense of forest conservation among people in the community. This engagement leads them to take part in various activities, including the establishment of firebreaks and the construction of water management infrastructure. Ajui et al. (2019) also found that there are initiatives to construct water management structures and conduct community forest development activities in collaboration with both government and private organizations. The transfer of knowledge and collaboration transpire between government officials and the community, with a focus on community forest management guided by a participatory and responsible approach to natural resource management within community forests.

Furthermore, Chiamsathit et al. (2020) address water scarcity by implementing initiatives like repairing water gates and constructing additional structures at water sources and ponds to increase storage capacity and reduce the impact of drought. Community committees, formed through participatory efforts, facilitate knowledge exchange and collaborative problem-solving, minimizing flooding and enhancing the community's resilience and understanding of effective water management. Pilert & Thanunrum (2018) observed that the community has gained a better understanding of its geographical landscape and has the potential to manage water resources effectively. This includes increasing surface water usage options and enhancing groundwater levels through the construction of water gates. They have also made innovations in developing simple household water filtration systems, with support from the sub-district administrative organization in allocating budgets to establish standardized water supply systems in the area, meeting domestic and consumptive water needs for the community. Moreover, Nikornkul et al.(2020) found that activities within the community forest area involve discussions, consultations, and negotiations between the government sector and the local community. Measures have been implemented to prevent forest fires and build water gates, guided by rules and regulations aimed at mutual benefits.

Based on these related research studies, it is essential to conduct follow-up activities as a crucial step after constructing water gates. This follow-up is essential to assess the success and effectiveness of the constructed water gates. Such monitoring will facilitate the gathering of data and experiences that can be utilized for future enhancements and advancements in water gate construction and water management. Additionally, this follow-up can provide valuable input for the efficient planning and management of projects related to water gate construction. Analyzing the outcomes of past water gate construction projects will help identify the most effective approaches and methods that yield optimal results and offer valuable insights for planning sustainable and efficient future projects. However, this research utilized the public participation concepts and theories proposed by Cohen & Uphoff (1981) and Pricklek et al. (2022) as a conceptual framework, as illustrated in Figure 1.
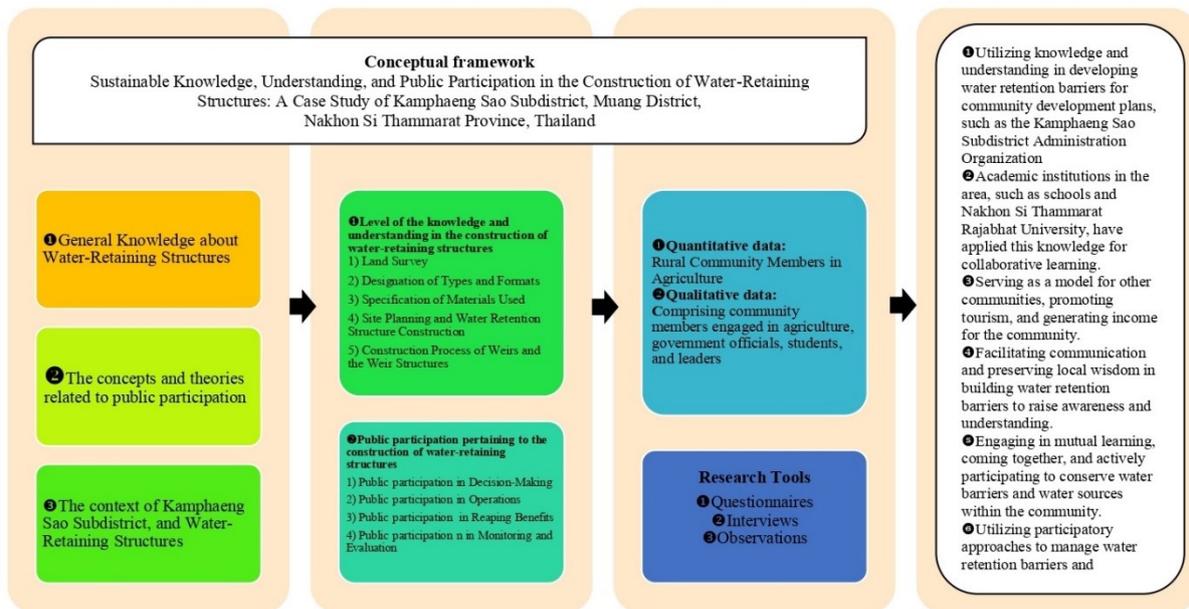
Figure 1   Framework **(Researcher, 2024)**

Methodology

Research model: This research employs a mixed- method approach, combining quantitative and qualitative research methods. It follows an explanatory sequential design, with an initial quantitative phase followed by a qualitative phase (Mahahing, & Thuraphun, 2022). The research process uses a combination of quantitative and qualitative research because we want to obtain study results that cover all dimensions.

Population and Sample Groups: Population: The population comprises residents in the agricultural sector of Kamphaeng Sao sub-district, including 9 villages, with a total population of 8,193 individuals. Approximately 80 percent of this population which totals 6,560 people, are engaged in agricultural occupations (Office of the Kamphaeng Saen Subdistrict Administrative Organization, 2023; Department of Health Service Support, 2023) . Sample Group: The sample group includes residents in the agricultural sector of Kamphaeng Sao sub- district, spanning 9 villages. The confidence level is set at 95 percent, with a margin of error of 5 percent. Consequently, the sample size is determined to be 363 individuals (Krejcie & Morgan, 1970) . Non- probability sampling is employed in this study, which involves selecting a sample group without adhering to the principles of probability. This approach suits research focused on specific or specialized groups with characteristics aligning with predefined topics or conditions (Bunmak, 2021; Mahahing, & Thuraphun, 2022). The research sample selection uses a sample group that covers and has a stake in water storage in the province. It is a systematic selection of a representative sample that does not rely on probability in selecting the sample group.

Key Informants: Consisting of 29 individuals, the key informants group includes: 1) Rural Community Members in Agriculture: 9 individuals selected using purposive sampling in Kamphaeng Sao sub- district. Each represents one of the 9 villages, possessing knowledge, expertise, and experience in natural water management using traditional methods in Kamphaeng Sao sub-district, Mueang district, Nakhon Si Thammarat province. 2) Government Officials Group: Comprising 5 individuals chosen for their direct support and promotion of natural water management efforts. 3) Students and Participants Group: Including 6 students

and participants actively involved in natural water management activities, attending check dam construction sessions in the area more than 5 times per year. 4) Community Leaders Group: This group comprises 9 community leaders, with one representing each village in Kamphaeng Sao Subdistrict. They were selected as individuals with knowledge about check dam construction and who actively participate in building natural water management structures. Inclusion Criteria: Inclusion criteria for public participation in the study are individuals aged between 18–70 years, residing in Kamphaeng Sao Subdistrict for at least 5 years, having experience and knowledge in check dam construction, displaying a volunteering spirit to participate in check dam construction activities, or having participated in the activity at least 5 times per year. Additionally, participants should have learned from, promoted, or benefited from check dam constructions in Kamphaeng Sao Subdistrict. Exclusion Criteria: Exclusion criteria for public participation in the study include individuals who are unable to participate during the specified time, experience discomfort or psychological stress, and wish to withdraw from the study at any point. Participants may also withdraw if they experience psychological discomfort during research interviews or activities. Additionally, individuals who pass away during the research process or are unable to provide information throughout the interviews due to urgent tasks or physical conditions are excluded.

Research Tools: 1) Research Tools Used in Quantitative Research: In the realm of quantitative research, the principal research instruments include questionnaires devised by researchers through a meticulous process. This process entails several stages, including a comprehensive literature review, analysis of pertinent documents, and the formulation of the questionnaire. To initiate, researchers explore concepts and theories pertaining to sustainable water-retaining structures from various sources, including books, documents, and related research endeavors. Subsequently, a comprehensive framework that encapsulates content and objectives is defined. The construction of the questionnaire is guided by this conceptual framework, and theories, divided into three distinct sections.

Part 1 is dedicated to gathering general demographic information about the respondents, such as their gender, age, level of education, monthly income, and marital status.

Part 2 focuses on delving into the understanding of water-retaining structure construction. This includes examining public participation in decision-making, engagement in practical activities, involvement in benefiting from the project, and public participation in monitoring and evaluation. This section is assessed using a Numerical Rating Scale with five levels, as delineated by Bunmak in 2021 (Bunmak, 2021). In this scale, five points denote the highest level of public participation, four points represent a high level, three points signify a moderate level, two points indicate a low level, and one point denotes the lowest level. Moreover, criteria have been established for interpreting the significance of the average scores pertaining to knowledge and comprehension in sustainable water-retaining structures, also according to Bunmak in 2021. These criteria entail an average score of 4.51 to 5.00, indicating the highest level; an average score of 3.51 to 4.50, indicating a high level; an average score of 2.51 to 3.50, indicating a moderate level; an average score of 1.51 to 2.50, indicating a low level; and an average score of 1.00 to 1.50, signifying the lowest level.

Part 3, which deals with problems and suggestions, consists of open-ended questions. Following the completion of the questionnaire, the subsequent step involves an assessment of the tool's quality. The questionnaire, once developed, is subjected to scrutiny by five experts to make necessary adjustments and improvements for suitability. These experts meticulously review the content and structure of the questions. Subsequently, questions that attain an IOC (Item-Objective Congruence) index within the range of 0.80 to 1.00 are selected for a trial run, employing a sample group comprising 30 individuals. This sample group shares similar characteristics with the research sample but is not part of the actual study, as articulated by Worabumrungkul and Wongsasilchai in 2017. Following this, the reliability of the tool is

determined using Cronbach's Alpha coefficient method, as proposed by Cronbach in 1990. The research yielded a coefficient of 0.850, as documented by Worakam in 2019. After revising and confirming the accuracy of the questionnaire, it will be finalized and printed in its entirety. This final version will be distributed to the sample group for the upcoming research study.

Regarding the qualitative research tools, the following methodologies were employed: 1) Interviews: Researchers conducted in-depth interviews related to sustainable water-retaining structures. The process of constructing these interviews involved an examination of concepts and theories from sources such as books, documents, and pertinent research works. These were structured within a framework that outlines the content and objectives. Questionnaires were developed based on this specified framework and theories, following established protocols. The interview itself is structured into three sections: Part 1 covers general information about the interviewees. Part 2 centers on sustained public participation in sustainable water-retaining structures, including involvement in decision-making, practical activities, benefit reception, and follow-up evaluation. Part 3 addresses issues and suggestions. A quality-checking process entails seeking recommendations from advisors and experts to assess the tools created. Subsequently, modifications are made to adapt the tools appropriately for interviewing key informants. 2) Observation Record Form: Researchers employed both participatory and non-participatory observation methods. Participatory observation involves active engagement in activities alongside the studied group, while non-participatory observation entails observation from an external perspective without direct public participation in certain activities.

Data Collection: Step 1: The quantitative research was conducted as follows: 1) Initially, the researcher privately contacted the participants to explain the research objectives and benefits, as well as the various research procedures, seeking their cooperation. In addition to this, the following procedures were followed: Participants were provided with a questionnaire in advance to allow for preparation before responding. 2) Appointments were scheduled, specifying the date, time, and location. 3) The researcher acquired official approval documents to collect research data and distributed authorized letters to request information from the agricultural communities. 4) Data collection took place on the designated date and time, which was from 1:00 PM to 6:00 PM. The researcher utilized the participants' residence as the survey location, personally administering the questionnaire while ensuring consent and willingness to participate before proceeding. The agricultural community members themselves directly answered the questionnaire. 5) The researcher rigorously verified the accuracy of the collected data. Any information not provided by the participants was duly recorded, following strict adherence to guidelines. If any unusual circumstances arose during the participants' engagement in the research project, the researcher was promptly notified. 6) The data collection process included distributing questionnaires to a total of 323 participants and subsequently collecting them, resulting in a total of 323 responses. This resulted in a 100 percent response rate. The collected data were then cross-checked for accuracy.

Step 2: Qualitative Research. In this step, the following data was collected: 1) The researchers personally contacted individuals to explain the objectives and benefits of the research, along with the various research procedures, seeking their cooperation. Relevant documents and questionnaires were provided to prepare participants ahead of the interviews. Appointments for the interviews were scheduled, specifying the dates, times, and locations. 2) The researchers obtained official permission letters from Nakhon Si Thammarat Rajabhat University to collect research data, which were then presented to the key informants. The researchers studied and prepared the interview questions as per the provided guidelines. Necessary recording equipment and notebooks were prepared before conducting the interviews. 3) Data was collected on scheduled dates and times. Interviews were conducted using questionnaires with key informants. The interviews lasted between 1 to 4 h and were typically held during weekends or on Saturdays and Sundays, approximately between 1:00 PM

and 6:00 PM, at the participants' residences. Deep interviews were conducted using the attached questionnaire, ensuring the success of this research project. The researchers sought cooperation and consent from the participants, ensured their comprehension, and requested permission to record audio and video during the discussions. It was explicitly stated that any recorded data, images, or sounds would be kept confidential. If participants opted not to record particular information, the researchers honored their preferences. Participants were encouraged to promptly notify the researchers of any issues or concerns that emerged during their involvement in the research project.

Data analysis: Quantitative Research, Analysis of General Information: Data acquired from the questionnaire in Part 1, including gender, age, education, monthly income, occupation, and marital status, underwent analysis and interpretation using computer software for statistical analysis. The analysis involved generating counts and percentages. Analysis of Knowledge and Understanding: Data pertaining to knowledge and understanding of sustainable water-retaining structures in Part 2 was analyzed and interpreted using computer software for statistical analysis. This analysis included the calculation of the mean and standard deviation. Qualitative Research Section: Qualitative research aimed to assess information regarding sustained public participation in sustainable water-retaining structures. This was achieved through in-depth interviews with key informants. Vital insights gleaned from these interviews were summarized, synthesized, and presented through a content analysis process.

Results

Preliminary Respondent Information: The predominant demographic in the sample group comprises males, totaling 240 individuals, constituting 66.12 percent of the participants. A total of 137 respondents (31.41 percent) have educational qualifications below a bachelor's degree. Furthermore, 114 respondents (37.74 percent) fall within the age range of 35–50 years. In terms of monthly income, 82 individuals (22.59 percent) earn between 8,001–10,000 baht. The primary occupation for 193 respondents (53.17 percent) is engaged in agriculture. Additionally, 165 respondents (45.45 percent) are in married status. The survey responses indicate a predominance of male participants, potentially influenced by their perceived leadership roles and physical strength. The age distribution suggests individuals within this range exhibit physical robustness, a volunteer spirit, and a deep commitment to their community. The marital status, predominantly married, implies a stable family life. Despite lower educational levels, the respondents demonstrate a commitment to community knowledge. Their income sources are primarily linked to agricultural occupations, emphasizing the vital role of water for their agricultural activities.

Level of the knowledge and understanding in the construction of water-retaining structures:

1) Land Survey: The overall knowledge level was notably high ($\bar{x} = 4.05$, S.D. = 0.57). The highest average score pertained to the Availability of Fertile Land, rated as high ($\bar{x} = 4.07$, S.D. = 0.56). Suitability of Location closely followed, also rated as high ($\bar{x} = 4.06$, S.D. = 0.55). The Environmental Suitability for Water Retention Structures was likewise considered high ($\bar{x} = 4.05$, S.D. = 0.55). The item with the lowest average score was Selection of Construction Sites for Water Retention Structures, rated as high ($\bar{x} = 4.03$, S.D. = 0.63).

2) Designation of Types and Formats: The collective understanding was high ($\bar{x} = 3.95$, S.D. = 0.58). The highest average score related to Improving the Efficiency of Water Retention Structures, rated as high ($\bar{x} = 4.03$, S.D. = 0.60). Designing Formats According to Project Objectives closely followed, rated as high ($\bar{x} = 3.99$, S.D. = 0.57). Appropriateness of

Project Duration was also rated high ($\bar{x}$ = 3.92, S.D. = 0.57). The item with the lowest average score was Organizing Management Meetings and Establishing Learning Foundations, rated as high ($\bar{x}$ = 3.88, S.D. = 0.57).

3) Specification of Materials Used: The study revealed an overall high level of understanding regarding materials used ($\bar{x}$ = 3.99, S.D. = 0.55). The highest average score was achieved in the context of Durable Materials for Water Retention Structure Construction, rated as high ($\bar{x}$ = 4.06, S.D. = 0.55). Closely following was Every Equipment Material Being Useful for Water Retention Structure Construction, rated as high ($\bar{x}$ = 4.04, S.D. = 0.52). The Readiness of the Equipment Used was also rated high ($\bar{x}$ = 3.98, S.D. = 0.55). The item with the lowest average score was Appropriate Quantity of Sandbags, rated as high ($\bar{x}$ = 3.89, S.D. = 0.57).

4) Site Planning and Water Retention Structure Construction: The study found that the overall understanding of site planning and water retention structure construction was at a high level ($\bar{x}$ = 3.88, S.D. = 0.64). The item with the highest average score was Planning and Pre-construction Layout for Water Retention Structure, rated as high ($\bar{x}$ = 3.95, S.D. = 0.60). Following closely was Assignment of Roles Suitable for Individual Capabilities, rated as high ($\bar{x}$ = 3.93, S.D. = 0.54). The Budget for the Operation was also rated high ($\bar{X}$ = 3.83, S.D. = 0.64). The item with the lowest average score was Communication and Coordination with Authorities, rated as high ($\bar{x}$ = 3.80, S.D. = 0.75).

5) Construction Process of Weirs and the Weir Structures: The study found that the overall understanding of the construction process of weirs and the weir structures was at a high level ($\bar{x}$ = 4.00, S.D. = 0.55). The item with the highest average score was Post-construction Site Conditions, rated as high ($\bar{x}$ = 4.08, S.D. = 0.53). Following closely was the Management of Weir Construction Areas, rated as high ($\bar{x}$ = 4.01, S.D. = 0.54). The Construction Techniques and Methods for Weirs were also rated high ($\bar{x}$ = 4.00, S.D. = 0.55). The item with the lowest average score was the Transmission System for Water Distribution, rated as high ($\bar{x}$ = 3.91, S.D. = 0.58).

6) Overall, in every aspect, the findings indicated a high level ($\bar{x}$ = 3.97, S.D. = 0.58). Land Survey had the highest average score, rated as high ($\bar{x}$ = 4.05, S.D. = 0.57). The Construction Process of Weirs and the Weir Structures also attained a high level of understanding ($\bar{x}$ = 4.00, S.D. = 0.55). Specification of Materials Used was at a high level ($\bar{x}$ = 3.99, S.D. = 0.55). Designation of Types and Formats was also rated highly ($\bar{x}$ = 3.95, S.D. = 0.58). The aspect with the lowest average score was Site Planning and Water Retention Structure Construction, rated as high ($\bar{x}$ = 3.88, S.D. = 0.64). These findings indicate a significant level of sustainable knowledge and understanding in the construction of water retention structures, likely rooted in the community's traditional wisdom and their recognition of the agricultural benefits of water use. Consequently, the community places great importance on the construction of these check dams and values their continued involvement in this sustainable endeavor, as presented in the subsequent steps.

Table 1 Level of the knowledge and understanding in the construction of water-retaining structures

The knowledge and understanding in the construction of water-retaining structures	Level		
	$\bar{X}$	S.D.	Interpreting the average
Land survey			
- The availability of fertile land	4.07	0.56	High
- Suitability of location closely followed	4.06	0.55	High
- The environmental suitability for water retention structures	4.05	0.55	High
- Selection of construction sites for water retention structures	4.03	0.63	High
Overall	**4.05**	**0.57**	**High**
Designation of types and formats			
- Improving the efficiency of water retention structures	4.03	0.60	High
- Designing formats according to project objectives closely followed	3.99	0.57	High
- Appropriateness of project duration	3.92	0.57	High
- Organizing management meetings and establishing learning foundations	3.88	0.57	High
Overall	**3.95**	**0.58**	**High**
Specification of materials used			
- Achieved in the context of durable materials for water retention structure construction	4.06	0.55	High
- Every equipment material being useful for water retention structure construction	4.04	0.52	High
- The readiness of the equipment used	3.98	0.55	High
- Appropriate quantity of sandbags	3.89	0.57	High
Overall	**3.99**	**0.55**	**High**
Site planning and water retention structure construction			
- Planning and pre-construction layout for water retention structure	3.95	0.60	High
- Assignment of roles suitable for individual capabilities	3.93	0.54	High
- The budget for the operation	3.83	0.64	High
- Communication and coordination with authorities	3.80	0.75	High
Overall	**3.88**	**0.64**	**High**
Construction process of weirs and the weir structures			
- Post-construction site conditions	4.08	0.53	High
- The management of weir construction areas	4.01	0.54	High
- The construction techniques and methods for weirs	4.00	0.55	High
- The transmission system for water distribution	3.91	0.58	High
Overall	**4.00**	**0.55**	**High**
Overall, in every aspect	**3.97**	**0.58**	**High**

Public participation pertaining to the construction of water-retaining structures is Presented as Follows:

1) Public participation in Decision-Making: During interviews, it was observed that meetings and joint discussions played a crucial role in decision-making, activity selection, and goal setting. Decisions were made collectively on various matters, including development planning, policy formulation, objectives, methods, operational strategies, and resource allocation. These interviews revealed that holding meetings or preparing for them was a vital step, ensuring that everyone involved understood the objectives and had the necessary information for decision-making. Individuals possessing essential information or significant updates concerning the sustainable construction of check dams shared their findings during these meetings. This practice allowed everyone to stay informed and collectively evaluate the

presented information. Participants in the meetings had the opportunity to deliberate and discuss to find suitable approaches or activities. Decision-makers, including leaders and meeting participants, based their decisions on the received information and feedback. These decisions were then used to plan and execute activities in line with the defined objectives, ensuring desired outcomes were achieved: (1) Natural Resource Cost: The cost of natural resources involves constructing check dams using materials sourced from the community's natural resources, such as bamboo and timber, readily available within the community. These materials serve as the primary structure during the initial stages of check dam construction. In some cases, they are later replaced by other materials like vetiver grass and bamboo. This approach ensures the preservation of the ecosystem on both sides of the canal, maintaining stability and preventing erosion throughout the dry season. These trees play a crucial role in preventing erosion on both sides of the canal. (2) Human Resources: Human resources refer to community leaders and individuals who collaborate in the construction of check dams. This collaborative effort ensures that the community has year-round access to water without the need for external contractors. The community's ability to engage in this cooperative endeavor is rooted in the concept of "working together" and the collective spirit within the community. This mutual effort in constructing check dams has proven successful and is beneficial to the entire community. (3) Sustainable Living: In this community, people live harmoniously, working as a team, demonstrating unity, and assisting one another in times of difficulty. Alongside these cooperative efforts, another aspect contributing to the community's potential is the absence of conflicts or disputes. Community members coexist as equals, always ready to lend a helping hand to one another. There is a sense of joy and willingness to collaborate in constructing check dams, contributing to a sustainable way of life where people coexist harmoniously with nature.

2) Public participation in Operations: Public participation in these activities entails supporting the internal resources of the community to efficiently carry out the construction of check dams. This involves engagement in the management processes as part of the community's leadership or management team. Public participation in decision-making and activity planning for check dam construction facilitates coordination among those with vested interests in these activities. This collaborative effort ensures that the work proceeds in the right direction and establishes links between different aspects. In some cases, external assistance may be necessary, such as requesting equipment support to facilitate ongoing construction activities. Active involvement in operations is a fundamental principle in check dam construction, with the goal of creating sustainability and achieving long-term success. (1) Inspiring Initiative: Due to the adverse impacts of drought, the villagers convened to deliberate on ways to restore their previous conditions. Inspiration was drawn from the "bamboo weir" concept, which they had encountered and learned about. They resolved to implement this concept by arranging sandbags into a step-like structure, resulting in the construction of a weir. The community had been grappling with severe water shortages for domestic use, leading to significant hardships. They had observed similar practices elsewhere and desired to implement them within their own community. Furthermore, they recognized the imperative during the 9th Royal Development Plan to establish check dams for water usage during droughts. The community felt it was essential to construct check dams to secure their water supply during dry periods. Consequently, the community collaborated to build these dams, ensuring a year-round water supply. Moreover, the villagers were motivated to conserve water sources and the environment, inspiring them to create these structures. Through collective public participation and cooperative work, the community found the inspiration to establish sustainability, resulting in a stable water supply and fostering a sense of unity and cooperation among its members. This shared inspiration ultimately led to the successful construction of check dams, providing a sustainable water source for daily life. Additionally,

this endeavor set a positive example for the younger generation, strengthening the bond within the community and promoting love and harmony among the villagers. (2) Volunteerism and Unity: The spirit of volunteerism arose from a sense of unity and love within the community. Individuals volunteered their time, effort, and resources selflessly to contribute to the construction of weirs collectively. This act demonstrated the power of love and unity within the community, nurturing a spirit of sharing and mutual assistance. Assistance was rendered without expectations of personal rewards, as everyone collectively benefited, especially in ensuring an abundant water supply for the community. This exemplifies the volunteerism of community members, showing their collaborative and cooperative nature. Furthermore, their joint efforts and sacrifices were driven by mutual benefits, with volunteers willingly setting aside personal interests for the common good. As a result, a robust spirit of volunteerism emerged within the community, reflecting its potential and inner strength. (3) Community Bonds and Networks: The construction of weirs, aimed at conserving soil and water resources and slowing down the flow of water during rainfall, has nurtured strong community bonds. When villagers collaborate in building these weirs, a sense of cooperation and support emerges without hidden agendas. The entire community shares a common bond, exemplifying unity and solidarity. This unity is undivided and signifies a shared heart and camaraderie within the community. Additionally, various governmental and non-governmental organizations have actively participated, creating synergy to ensure that the construction of water weirs aligns harmoniously with the community's way of life. (4) Decentralization of Responsibilities: To allocate tasks and responsibilities, the community establishes teams in which each individual is assigned specific roles and procedures. Collaborative planning is used, promoting unity, cooperation, and mutual support. Village elders or community leaders organize and delegate responsibilities based on individual abilities and skills. There are no designated leaders or followers; instead, everyone assists each other. At times, the community organizes teams, distinguishing between female and male teams. The female team is responsible for filling sand into sacks, while the male team is tasked with tying and pounding stakes for constructing the water weirs.

3) **Public participation in Reaping Benefits:** The construction of water weirs has brought numerous benefits to the villagers, including intellectual gains, tourism advantages, financial income, social benefits, and agricultural revitalization. Moreover, it helps in addressing challenges associated with drought and decreasing the impact of forest fires. These weirs supply both drinking water and household water for the community. (1) Preservation of Local Wisdom: The construction of water weirs embodies an art and local cultural knowledge that has been transmitted through generations, reflecting the rich heritage within the region. (2) Tourism and Economic Opportunities: The construction of water weirs shows the local wisdom drawn from the community's capabilities, attracting the attention of tourists who visit to observe the process. Furthermore, the production of water weirs serves as a source of income and enables the community to promote their products. (3) Strengthening Social Networks: The construction of water weirs promotes collaboration and solidarity among the community, instilling confidence and pride in the local expertise related to water weir construction. (4) Agricultural Revitalization: One of the advantages of building weirs lies in their role in preserving life within the community. By erecting barriers in streams to retain and slow down the water flow, they conserve soil and water resources. This, in turn, enriches the soil, fostering the healthy growth of trees and creating a more humid environment that supports forest development and regeneration. (5) Mitigating Drought and Forest Fire Risks: Another agricultural benefit of weirs is their role in reducing problems associated with drought and the severity of forest fires. They help address drought-related challenges and lessen the impact of forest fires, ensuring a reliable water supply that enhances the overall well-being of community members. Additionally, during years with excessive water, some houses may be damaged due

to fluctuating forest water flow. Weirs serve as barriers that regulate water flow, necessitating careful planning and timely measures to address such challenges. (6) Access to Drinking and Household Water: Access to potable and household water is essential for any community. The construction of weirs guarantees a consistent supply of drinking and household water. This, for example, reduces the reliance on purchasing water during dry seasons, ensuring the community has dependable access to water for consumption and domestic use. Weir construction brings substantial benefits to the community in terms of water availability.

4) Public participation in Monitoring and Evaluation: Community involvement in weir construction, which includes planning, decision-making, implementation, and mutual benefits, is a multifaceted process that necessitates communication and cooperation among all stakeholders. Public participation in monitoring and evaluation is a crucial step that facilitates feedback for the project and enables necessary improvements. It offers the project valuable suggestions and insights, thereby enhancing its chances of success and allowing adjustments based on the community's needs: (1) Drawing Lessons: Drawing lessons from this experience, it becomes evident that the community has embraced the construction of weirs and successfully integrated them into their daily lives. For instance, the community has fostered love and harmony, promoting unity among its members. There is a spirit of mutual assistance, resource sharing, punctuality, and fulfillment of duties to contribute to the future development of the community. Additionally, a harmonious balance between environmental factors and natural resources is observed due to the storage of water in river streams for essential use. The knowledge gained from weir construction has significantly benefitted agricultural practices, resulting in improved livelihoods and increased income for farmers. Another critical aspect is the collective effort of the community in collecting debris and materials carried downstream by the water. This practice prolongs the lifespan of lower water sources, mitigates sedimentation, and enhances water quality by reducing turbidity. It also promotes biodiversity in the area, serving as a habitat for aquatic and forest animals. Additionally, it furnishes a clean water source for drinking, household needs, livestock, and wildlife within the community. (2) Community Knowledge: The community has acquired valuable knowledge concerning weir construction and related environmental systems. This knowledge has been imparted through the process of constructing weirs and by various relevant organizations. Topics covered include weir construction and water management. The community members have embraced principles of cooperation, unity, and sustainable economics. Furthermore, they have learned how to design weirs to ensure year-round water availability. They have gained fresh insights into weir construction, witnessing collective efforts and mutual support. Additionally, community members have expanded their knowledge by exploring projects beyond their area and adapting external experiences to construct weirs within their own community. Moreover, the community has received knowledge about weir construction, maintenance, and conservation practices, ensuring the longevity of the weirs and reducing reliance on government resources during water scarcity seasons. All of these accomplishments are the result of collaborative discussions and knowledge-sharing initiatives among community members regarding weir construction, fostering a sense of inclusivity across all sectors.

Discussions

Level of the knowledge and understanding in the construction of water-retaining structures: Land surveys, the designation of types and formats, the specification of materials used, site planning, water retention, structure construction, and the construction process of weirs and weir structures are integral components of this endeavor. On the whole, this undertaking attains a commendable level in all aspects ($\overline{X}$ = 3.97, S.D. = 0.58). This performance aligns with the findings from the Royal Irrigation Department (2016), which investigated the procedures for erecting sustainable check dams, as per the Royal Initiative. The construction process includes several key stages. At first, the preliminary task involves conducting a survey of the suitable topography or riverbed for construction, which is pivotal. Subsequently, it is imperative to determine the type and design of the check dams. This entails meticulous planning of their dimensions, proportions, and the materials employed in their assembly. Furthermore, the positioning and construction of the check dams must strictly adhere to the specified patterns, sizes, and materials. This meticulous approach is essential to ensure the structural stability and strength necessary for the check dams to withstand water flow without detriment to the environmental ecosystem. It is noteworthy that the villagers demonstrate a profound comprehension of check dam construction, likely stemming from their awareness of traditional wisdom concerning the sustainable utilization of natural resources. For example, their judicious selection of appropriate trees for check dam construction and their inventive methods for enhancing water systems during drought seasons have proven advantageous for agricultural water utilization. Given the critical importance of water resources, the community places significant emphasis on effective water management. Consequently, the villagers enthusiastically partake in the construction of check dams, contributing to the overarching concept of "sound water management" as articulated by Buntao and Thaochalee in 2020. The discernible outcomes of these endeavors, including the mitigation of flooding, the enhancement of agricultural productivity, and increased income from tourism, engender a sense of confidence and comprehension within the community regarding the construction of water-retaining structures.

Public participation pertaining to the construction of water-retaining structures: Public participation in decision-making provides access to information concerning the costs of natural resources. This is facilitated by the presence of a thriving ecosystem rich in trees and abundant water resources. Additionally, the community possesses human resources in the form of leaders who foster unity and friendship, demonstrating their commitment to resource restoration along the canal's perimeters; thus, ensuring the preservation of forests and water sources, as highlighted by Mangana and Vetchapitak in 2020. This collective sustainable cohabitation is realized through the collaborative construction of check dams, aiming to establish a harmonious relationship between humans and nature. Operating as a unified team, the community emphasizes unity, mutual assistance during challenging times, and the avoidance of conflicts. This approach aligns with the principles expounded upon by Andrew & Stiefel (1998), and the Office of The Public Sector Development Commission (2021). Public participation commences with being well-informed about operations and expressing opinions regarding the community's requirements. It is indispensable for the intricacies of change planning and needs to be perceived as a long-term process rather than a one-time consultation, as discussed by Simon et al., in 2020.

Active public participation, which underscores the significance of inspiration, draws from the collective wisdom of peers, where ideas are gathered and collaboratively shared as a form of social capital and community engagement, in line with the research of Chiamsathit, et al. in 2020, and Miller & Buys in 2008. This realization motivates the community to effectively

construct these barriers, grounded in their understanding that water is indispensable for daily consumption. In previous years, the community experienced a severe scarcity of clean and usable water, which greatly distressed the residents (Maslow, 1943; Balraj, 2017). In response, the power of volunteerism was harnessed among the people who possessed a spirit of volunteering to construct these water barriers. This collaborative effort enabled the community to conserve water, ensuring an adequate supply for agricultural purposes. The emphasis on volunteerism united the community, people joined forces and hearts, successfully building the water barriers. Through this collaboration, the community developed strong relationships and networks. Villagers collaborated effectively in building the barriers, indicating improved community relations. The community exhibited mutual assistance and support in constructing the water barriers, reflecting a sense of self‒reliance in their management and the principle of "self‒sufficiency" (Khamsaen et al., 2018). Without expecting any rewards, the community fostered unity, shared a common spirit, and actively participated with various agencies. Duties and responsibilities were distributed among teams, each with specific roles and tasks. One team focused on tree cutting for the framework, another on filling sandbags for water barricades, and a third on barrier construction. Subsequently, all teams collaborated to build the water barriers. This division of labor and teamwork paralleled their collaborative implementation approach, which involved resource support, public participation in management, coordination, cooperation, and active involvement in operations, as described by Namburi (2019). Public participation in implementation includes contributing to the project by providing financial resources, materials, labor, as well as involvement in project management, coordination, and operations, while seeking external assistance, in accordance with the research of Chasuwan & Sanpugdi (2019). The study revealed that achieving sustainable water management through the construction of bamboo weir dams necessitates the mobilization of various resources, including human capital, financial assets, raw materials, effective management, and the coordination of collaborative networks.

Furthermore, participating in the benefits helps to acknowledge the diverse local wisdom inherited from ancestors, transforming the community into a tourist destination, generating income, and promoting the sale of local products. This fosters social networks that encourage cooperation and unity within the community, particularly in the face of challenges such as droughts and water shortages (Varitwuttikul et al., 2021). This enables farmers to construct water‒retaining barriers for agricultural water storage, mitigating drought‒related issues and reducing the risk of forest fires (Panyasean et al., 2023; Nikornkul et al. (2020). Having access to household drinking water reduces the need to purchase water during dry periods (Pilert, & Thanunrum, 2018). The construction of water‒retaining structures exemplifies local wisdom and the utilization of natural resources, constituting a form of "community innovation." This involves blending traditional knowledge with sustainable modern technologies for the community's benefit, as knowledge and technology are key to innovation (Chasuwan & Sanpugdi, 2019; Wawan et al., 2023). However, it is essential to consider the issue of check dams during periods of fluctuating water flow in the forest, as the construction of water-retaining structures can disrupt the natural river flow in a similar manner. This necessitates active public participation in reaping the benefits, as described by Khamphilaanont (2007), when the community benefits from various activities or projects, including material, social, and individual benefits derived from development. This active public participation extends to monitoring and evaluating the outcomes, requiring the involvement of villagers in planning, decision‒making, implementation, and mutual benefit sharing. This complex process demands communication and cooperation from all involved parties.

Furthermore, active public participation in the monitoring and evaluation process is a critical step that facilitates the provision of feedback and the implementation of improvements. This enables the water barrier project to adapt to the community's evolving needs, thus enhancing its potential for long‑term success and sustainability. The interconnection between various aspects, sustainability assessments, and resilience building necessitates a comprehensive analysis (Gunaratne et al., 2023), which aligns with the research by Chunta (2018). It is suggested that public participation should include monitoring and evaluation to keep everyone informed about the progress and any emerging issues. This should be accomplished through appropriate monitoring methods, ensuring continuous community management and care. Without proper maintenance, water barriers are susceptible to damage (Konwong et al., 2021). Therefore, there is a need for knowledge exchange and "knowledge transfer" to promote collaboration across various sectors, including communities, government agencies, non‑profit organizations, and the private sector, without seeking profit (Ajui et al., 2019)

From the research findings, it is evident that every step is crucial and requires collaboration from the community and various stakeholders. This is because, in the future, the constructed water barriers will deteriorate over time and have a reduced lifespan without proper maintenance. Thus, a collaborative approach in the entire process, including public participation in decision‑making, implementation, benefit‑sharing, and monitoring and evaluation, is essential. This aligns with the research conducted by Pricklek et al. (2022), explaining that community involvement includes public participation in decision‑making, implementation, benefit‑sharing, and public participation in monitoring and evaluation which aligns with the studies conducted by Cohen & Uphoff (1981), Wattanasiritham, & Phetmak (2008) and Puang‑ngam (2016), indicating that public participation includes involvement in decision‑making, implementation, benefit‑sharing, and public participation in monitoring and evaluation. Therefore, the collaborative effort to construct check dams significantly impacts the community's economy, particularly in areas where the community is more prosperous, resulting in a clear increase in water quantity. It aids in flood prevention and effective water flow control, while also enhancing the diversity of fish species encountered. Furthermore, exploring collaborative models serves as a prototype for achieving success (Yotarak et al., 2019). The analysis reveals significant economic impacts stemming from the construction of check dams, as they provide new income sources for the community without incurring water usage costs. Moreover, they create opportunities for tourism and businesses in the area. Socially, the construction of check dams offers chances for communities to meet and share experiences, fostering communication about local knowledge and ways of life. This can serve as a model for other communities interested in tourism and community development (Khaenamkhaew et al., 2023).

Conclusion and suggestions

The thematic analysis highlights the effectiveness of a community‑driven approach in constructing water‑retaining structures. This approach not only builds infrastructure but also strengthens community bonds, enhances local knowledge and skills, promotes environmental sustainability, and fosters economic and social benefits. It's a holistic model that goes beyond mere construction, touching on various aspects of community development and empowerment.

Policy Recommendations: Pertinent agencies, including the Kamphaeng Sao Subdistrict Administrative Organization and the 15th Irrigation Office in Nakhon Si Thammarat, are urged to take action. They should promote community involvement by clearly explaining roles and responsibilities to the local residents. Enhancing public relations is

necessary to ensure the community comprehends the objectives, principles, and operational procedures regarding the precise and transparent construction of water barriers. This is vital because the research findings indicate that water barriers efficiently store water for consumption and agricultural purposes. The Kamphaeng Sao Subdistrict Administrative Organization should formulate a policy to support the budget for building water barriers or for continuous maintenance and repairs.

Operational Recommendations: The construction of water barriers, despite being backed by extensive research, is currently at a minimal average level in terms of position planning and actual construction. It is crucial to plan the positions and construct water barriers while also specifying and organizing tasks in advance. This process should align with individual capabilities, requiring communication, coordination, and budgeting for execution. Effective public relations should include the operation and summary of activities to ensure community members and the public are well-informed. Active public participation in monitoring operations to identify problems and requirements should be encouraged to mitigate issues and challenges effectively. Collaboration among the community, government sectors, and private sector development organizations should be fostered. This collaboration aims to use collective thinking and public participation to successfully achieve objectives and goals related to ongoing activities and development initiatives. Water retaining structures require adequate design and input of environmental engineering for sustainable environment, effective performance, and durability. This aimed at looking at the design and sustainability of water retaining structure for enhanced environment. Sustainability has always been a question of whether the materials used for construction are of good quality and also whether the design methods used are of high standards. Water retaining structures were designed and checked based on important parameters such as cracking and deflection checks, strength of materials and detailing done with adequate attention to factor of safety and minimum clear distance. Quality materials and latest development in structural engineering must be incorporated with adequate check for sliding, earth pressures, hydrostatic forces, and overturning moments. Appropriate geotechnical tests and checks for factor of safety should be carried out. Global environmental impact was found to be the major problem resulting to the lack of sustainability. It was concluded that water retaining structures can be designed with engineering standards, relevant codes of practice, and application of process engineering for sustainable environment. Quality control, correct workmanship, and appropriate tests should be carried out on all materials during construction and other aspects of project implementation.

Recommendations for Subsequent Research: It is advisable to conduct research on the existing issues and potential solutions, assessing ongoing projects to identify specific challenges and potential resolutions in the current context. Research should focus on understanding the needs of leaders, community members, and stakeholders to determine their current requirements and how effective assistance can be provided. Research should be policy-oriented, ensuring precision and efficiency in the measures implemented, which will significantly impact practical applications. Utilize the research findings to benefit both academic knowledge and practical management. This will contribute to the dissemination of knowledge and provide validation for future development initiatives.

New knowledge and the effects on society and communities

From the research findings, it was discovered that every step is pivotal and necessitates collaboration from the community and various networks. This is because, in the future, the constructed weirs will deteriorate and become vulnerable over time, with a reduced operational lifespan without proper maintenance. Therefore, there is a need for a collaborative approach in weir construction, involving the following phases: Public participation in Decision- Making, Public participation in Operations, Public participation in Reaping Benefits, and public participation in Monitoring and Evaluation. To utilize the research findings as a guide for stakeholders, they can be integrated into an efficient water management plan for the benefit of user groups. This has economic implications, generating new income sources for the community and contributing to revenue for local tourism and businesses in the area. Additionally, there are social impacts, including community involvement in activities related to weir construction, promoting public participation, and providing opportunities for people to meet and share experiences. This facilitates knowledge exchange regarding local wisdom and weir construction methods, serving as a model for other communities aiming to enhance tourism and community income. At the same time, there are favorable environmental outcomes, including the enhancement of environmental systems, rainwater collection, and agricultural water utilization. These actions diminish problems linked to drought and alleviate forest fire hazards, as depicted in Figure 2.
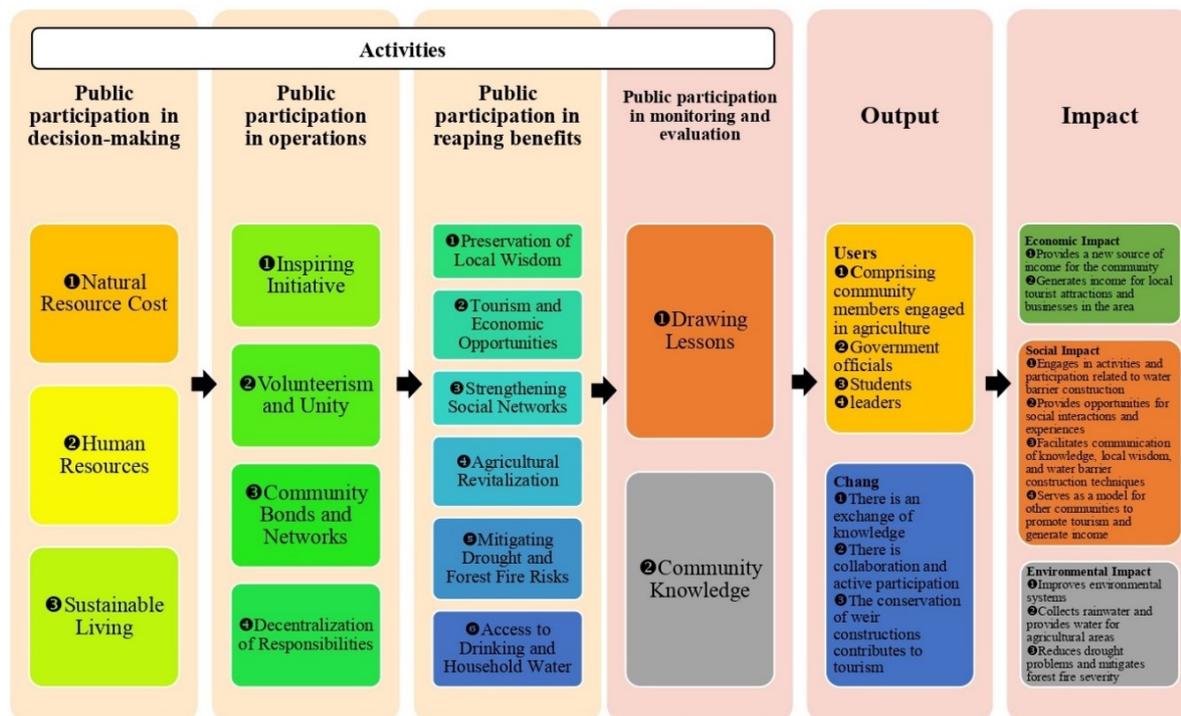

Figure 2 New Knowledge and The Effects on Society and Communities (Researcher, 2024)

Acknowledgments

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The Development of Healthcare Model and Memory Rehabilitation of Elderly with Dementia by Using Community-based Participation

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Abstract

This research aimed to develop a healthcare model and memory rehabilitation of the elderly with dementia by using community-based participation and to examine the satisfaction of the participating elderly towards the healthcare model and memory rehabilitation. The population in this research was the elderly people, whose age was 60 years and over, living in Nong Phueng, Yang Noeng and Saraphi subdistrict municipalities, Chiang Mai province. The purposive sampling method was applied to select the sample group of 100 male and female elderly people. The data collection instruments comprised a structured interview about dementia and community contexts, a focus group discussion, Thai Mental State Examination (TMSE), and a satisfaction questionnaire for the elderly. The data were statistically analyzed using mean and standard deviation. The results showed that the healthcare model and memory rehabilitation of the elderly with dementia by using community- based participation was developed. It was composed of three phases, including community preparation phase, research phase, and post-research phase. Furthermore, the questionnaire results revealed that the overall satisfaction of the participating elderly was at a high level, with the mean of 4.46 ($\pm$0.52).

Keywords: Dementia, Elderly, Healthcare model, Memory rehabilitation, Community-based participation

Introduction

Because of the changes in the global demographic structure as the results from economic and national development and advances in science, technology and medicine; the proportion of the elderly populations has been increasing rapidly from 5.9% in 1980 to 9.7% in 2020 (Jitapunkul et al., 1999). Similarly, in Thailand, the number of elderly people has been increasing rapidly from three million in 1987 to 10.78 million in 2020 (Senanarong et al., 2001). This information shows that Thailand has officially become an aging society. The result of the population structure change in Thailand causes a great increase in health problems due to the deterioration of the functions of various systems that decreases both physically and mentally in the elderly population (Jaroensin, 2017). According to World Health Organization (2023), it has been reported that one of the top 7 causes of death among the elderly is dementia. It is predicted that dementia will become one of the top five causes of death among the elderly in the future.

According to the effects of dementia on the elderly, it can be seen that dementia brings about enormous burdens on patients themselves, their families and society (Brodaty et al., 1998). From the analysis of long-term care costs in the elderly, it was found that caring for the elderly with a high level of dependency or total dependency had an average total cost of 44,329 baht per year. However, the cost of long-term care for households was approximately 4,953 million baht, which included 2,567 million baht for the opportunity cost of a caregiver, 783 million baht for hiring a caregiver from outside the household, 634 million baht for daily life care, and 1,341 million baht for others (Suwanrada & Kamwachirapitak, 2009). It is evident that caring for the elderly results in a large burden of expenses. It affects not only the patients themselves, but also other people such as their families and community members. Therefore, new ways to reduce health problems that cause all-round effects should be sought in an attempt to slow down the onset of dementia among the elderly in the community. According to Jinantaya (2006), there is a concept of community-based health promotion for the elderly. It is the concept of building community beliefs in developing health promotion processes. This concept will focus on developing strong community potential to jointly solve health problems of the elderly by creating cooperation and exchanging integrated knowledge between the elderly, family, and all stakeholders in the community. From the concept above, the process of developing personal skills must be emphasized. The individual, group and community systems should be emphasized to be able to control and improve one's physical, mental, social, intellectual and spiritual health and wellbeing; as well as to develop an environment conducive to health-promoting behaviors. Additionally, the 13th National Economic and Social Development Plan requires that community empowerment be promoted and encouraged for communities to solve their own problems and become self-reliant as well as interdependent, which would ultimately lead to sustainable human resource development (Office of the National Economic and Social Development Council, 2022).

Saraphi District is one of the first five districts with the highest number of elderly people (24.45%) (National Statistical Office (NSO), 2021). This has made the district to become an ageing society and the elderly are likely to encounter increasing risks of dementia as they age. It was found from the interview of the people in the area that the behavior of many elderly in the area can cause faster dementia because they rarely use their brains for doing activities. In addition, there is no screening and survey for the risks of dementia in the primary level of the elderly in the community. In the past, Thai Mental State Examination (TMSE) was used by only medical personnels to patients. It was also in the paper form which was difficult and take time to interpret the results. As a result, this research aimed to develop a healthcare model and memory rehabilitation for the elderly with dementia by using community-based participation

in order to respond to the needs of the community and in line with the Action Plan for the Elderly, Phase 2 (2002 - 2022), 2nd revised edition, 2020. Strategy 2 of this plan focuses on promoting health, preventing illness and supporting basic self- care. It also encourages health promotion activities in a variety of formats that are appropriate for the elderly and their families.

Objectives

1. To develop a healthcare model and memory rehabilitation of the elderly with dementia by using community-based participation.

2. To examine the satisfaction of the participating elderly towards the healthcare model and memory rehabilitation.

Methodology

This research was a participatory action research with the participation of the research team; together with medical personnel, public health volunteers, and community representatives to develop a healthcare model and memory rehabilitation of the elderly with dementia in the community.

Population and sample

The population in this research was 6,985 elderly people, whose age was 60 years and over, living in Nong Phueng, Yang Noeng and Saraphi subdistrict municipalities, Chiang Mai province. The purposive sampling method was applied to select the sample group of 100 male and female elderly people. The criteria were that they could be either male or female who had education from elementary school onwards, owned Android smartphones, resided in Nong Phueng, Yang Noeng, and Saraphi municipalities, Saraphi district, Chiang Mai province, and were able to help themselves. They needed to have an Android smartphone and be willing to cooperate until the end of the research project with the research team. Moreover, they had to be screened by implementing the Thai Mental State Examination (TMSE) and the result scores must be less than 23 points which were considered as having dementia (Train the Brain Forum Committee, 1993). The sample comprised an equal distribution of males and females. They were further stratified based on geographical location, with 35 participants recruited from Nong Phueng subdistrict municipality, 30 participants from Yang Noeng subdistrict municipality, and 35 participants from Saraphi subdistrict municipality.

Research method

1. The process of developing a healthcare model and memory rehabilitation of elderly with dementia by using community-based participation.

The research method for developing a healthcare model and memory rehabilitation of elderly with dementia by using community-based participation was divided three phases as follows:

Phase 1: Community preparation phase

1) Documentary research on dementia in the elderly, caregivers of the elderly with dementia, health promotion for the elderly, community participation- based model in health promotion, and community- based health promotion for the elderly with dementia was reviewed.

2) Official letters were sent from Chiang Mai Rajabhat University to the mayors of Nong Phueng, Yang Noeng and Saraphi Municipalities for their permission to conduct the study with the sample group.

3) A meeting was convened for the mayors and heads of the elderly association of the three municipalities in order to clarify the purposes of the research and to request their collaboration for data collection.

Phase 2: Research phase

1) The purposive sampling method was applied to select the sample group of 100 male and female elderly individuals, who passed all the criteria mentioned earlier.

2) A focus group discussion was organized with the sample group by the research team; together with medical personnel, public health volunteers, and community representatives. This was to assess their health needs and to find out about dementia problems among the elderly in the community, operational goals, operational guidelines, and procedures for determining the healthcare model and memory rehabilitation for the elderly with dementia through community-based participation.

3) Each process of developing the healthcare model and memory rehabilitation for elderly with dementia was executed based on the operational plan that was formulated.

Phase 3: Post-research phase

The research team examined the effectiveness of the community participation-based healthcare model for the elderly with dementia.

2. The measurement of participant satisfaction towards the healthcare model and memory rehabilitation.

1) The satisfaction of the participating elderly was examined about the implementation of the healthcare model and memory rehabilitation. The questionnaire was used in this part. It consisted of 18 five-point-rating scale, divided into three aspects. The results were calculated to obtain the mean and standard deviation of the questionnaire items, based on the Likert scale questions that rated the satisfaction levels from highest, high, moderate, low, and lowest, yielding a description of the elderly's satisfaction with the healthcare model and memory rehabilitation. The elderly's satisfaction levels were interpreted (Best, 1986) as follows.

4.50 – 5.00 Highest
3.50 – 4.49 High
2.50 – 3.49 Moderate
1.50 – 2.49 Low
1.00 – 1.49 Lowest

The satisfaction questionnaire was checked by three experts using the index of item-objective congruence (IOC). The average result of the IOC was 0.925 indicated the content validity of the questionnaire.

2) The assessment results were submitted to a civil society forum in order to incorporate the results for further community development.

Research tools and data analysis

Research tools included a structured interview about dementia and community contexts, a focus group discussion, Thai Mental State Examination (TMSE), and a satisfaction questionnaire for the elderly. The data were statistically analyzed using mean and standard deviation.

Rights protection of the sample group

This research was approved by the Board of Human Research Ethics, Chiang Mai Rajabhat University, under the research project, "The Development of a Community Participation-Based Healthcare Model and Memory Rehabilitation for the Elderly with Dementia". The registration number is IRBCMRU 2022/165.08.08, dated October 26, 202

Results

1. The development of a healthcare model and memory rehabilitation of elderly with dementia by using community-based participation.

The development of the healthcare model and memory rehabilitation for elderly with dementia involved the following three phases.

Phase 1: Community preparation phase

1) Preparations for entering the areas were conducted. Official letters were sent from Chiang Mai Rajabhat University to the mayors of Nong Phueng, Yang Noeng and Saraphi Municipalities for a permission to conduct the research.

2) The fundamental information about the community was investigated, which included the lifestyles of the elderly in the municipalities.

3) Staffers participating in these research activities were well prepared and informed. They included the researchers, the participating elderly, public health volunteers, the involved medical personnel, and the representatives from the local administrative organization, namely the mayors and their deputies.

At this phase, all aspects of the community were prepared. The research was approved to do in Nong Phueng, Yang Noeng and Saraphi Municipalities. Moreover, it was found that the lifestyles of the elderly in these municipalities were various. However, on every Sunday, the municipalities provided courses or activities for the interested elderly to do with one another, such as, painting, gardening, touring and so on. In addition, all staffers were prepared before the research phase.

Phase 2: Research phase

1) Research assistants were prepared. In this research, extraneous variables caused by the experimenter's bias were controlled. Two research assistants who were professional nurses with a five-year experience in health promotion, were recruited. The research assistants were involved in collecting the data from the sample group concerning the patients' memory measurements by using Thai Mental State Examination (TMSE) in the pre-experimental phase and after the experiment. The research assistants were informed about the research objectives, research methodology, and data collection.

2) The sample group was selected based on predefined eligibility criteria. Prior to participation, all participants were provided with detailed information regarding the study objectives, duration, and venues for research activities. Written informed consent was obtained from each participant, indicating their voluntary participation in the study. Participants were required to complete the Thai Mental State Examination (TMSE), a standardized assessment tool widely used in Thailand for screening cognitive impairment and dementia. The TMSE comprises 30 items and is structured into six sections: orientation, registration, attention, calculation, language, and recall. Administration of the TMSE was conducted by qualified medical professionals with expertise in cognitive assessment. In this study, a TMSE score of 23 or less out of a possible 30 was employed as the threshold for identifying cognitive impairment. Participants who scored below this threshold were classified as elderly individuals with dementia. The mean TMSE score for the sample group was 17.23, with a standard deviation of 2.214.

3) The data were collected from the sample group according to the qualifications in the pre-experimental phase by means of the interview.

4) There were four steps in the operation of promoting healthcare for the elderly with dementia by using community-based participation as follows:

Step 1 was the participation in health needs assessments. In this step, the researchers together with the medical personnel, the nurses, the public health volunteers, and

the representatives from the local administrative organizations in the three municipalities organized a civil society forum in order to obtain preliminary information about the situational contexts of healthcare of the elderly with dementia in Saraphi District, Chiang Mai Province. This included determining the prevalence of dementia among the elderly population, assessing the current healthcare services available, identifying specific dementia-related challenges faced by the community, and exploring potential risk factors contributing to dementia in the elderly.

Step 2 was concerned with an establishment of the operational goals and guidelines, role and responsibility assignments, and a plan for operating the project to promote healthcare for the elderly with dementia by using community-based participation. To establish an appropriate healthcare model for the elderly with dementia, subgroup meetings were held. After that, a symposium was organized to find out solutions and share conclusions with stakeholders in caring for the elderly with dementia.

Step 3 was an establishment of the healthcare model for the elderly with dementia by using community‑based participation, which was based on the needs of the community in the district.

Step 4 was concerned with carrying out the activities to promote healthcare for the elderly with dementia according to the concept of participation of local government organizations in collaboration with civil society. There were two main activities with a total duration of one month as follows:

Main activity 1: The first main activity was concerned with health promotion for the elderly to prevent dementia. In the first week, a relationship was established among the researchers, caregivers of the elderly, and the elderly. The research team introduced themselves, informed the purposes of building a healthcare model for elderly with dementia by using community‑based participation, and then provided a chance for the elderly to introduce themselves. This could help the team and the elderly to get to know one another and to create mutual trust, which resulted in a good relationship between the research team and the elderly group. After that, the research team presented the information about dementia, which includes its meanings, symptoms, stages of the disease, factors affecting dementia, and self‑care guidelines.

Main activity 2: From week 2 to week 4, the operation of each week consisted of the following sub-activities:

- Sub‑activity 1: There was a preparatory activity with easy physical exercise starting from simple postures in order to gradually stimulate and strengthen the muscles and tendons. Then, the participants were encouraged to focus on breathing by taking deep breaths in order to help lower blood pressures, relax muscles, increase blood circulation, and regulate their heartbeats.

- Sub‑activity 2: This was the memory training activities based on the Montessori Philosophy. The activities were divided into three sub‑activities which took place in week 2, week 3 and week 4 respectively.

☐ Sub-activity 2.1: It was a connection activity by using events and stories to connect big things to small things or vice versa.

☐ Sub-activity 2.2: It was a connection activity by grouping things. The participants were required to group things together, tools, devices or data, in order to make them easy to remember.

☐ Sub-activity 2.3: It was a connection activity by sorting things. The participants had to prioritize what came before or after and what was important, so that what was more important would be dealt with first.

- Sub‑Activity 3: It was a memory rehabilitation activity presented in the form of mobile games for the elderly with dementia, by implementing the memory training application to rehabilitate memories of the elderly with dementia, as shown in Table 1.

Table 1 The memory training application activity in the form of mobile games

Weeks	Games	Mobile Phone Screen
Week 2	Egg Games	
Week 3	Medicine Preparation Games	
Week 4	Shopping Games	

After the elderly were taught how to play each game, they were asked to play the games at home every day in order to practice their brains and train their memories. Moreover, each game had a progress display system which allowed the research team or the elderly themselves to monitor the progress of their game scores. Playing the games would be an incentive to do thoughtful activities of the elderly, which could stimulate the brain's cognitive functions and brain training. This could ultimately result in the prevention and memory rehabilitation of the elderly, which could lead to a better quality of their lives.

- Sub-Activity 4: It was the summary of the activity results. The participating elderly were encouraged and provided an opportunity to ask questions if they had any.

Phase 3: Post-research phase

The post-intervention phase focused on evaluating the effectiveness of the community participation-based healthcare model for elderly individuals with dementia. The research team collected assessment data and integrated it with feedback gathered from the community during a civil society forum. The mean TMSE score for the post-intervention assessment was 23.07, with a standard deviation of 2.268. Statistical analysis revealed a significant improvement in memory function among elderly participants following the implementation of the healthcare model and memory rehabilitation program. This finding suggests that the community participation-based approach was effective in enhancing cognitive outcomes for elderly individuals with dementia.

2. The satisfaction results of the participating elderly towards the healthcare model and memory rehabilitation.

After the implementation of the healthcare model and memory rehabilitation, the satisfaction of the participating elderly was explored and the results were shown in Table 2.

Table 2 The satisfaction results of the participating elderly towards the healthcare model and memory rehabilitation

Statements	Level of Satisfaction		
	Mean	S.D.	Level
1. Participation			
1.1 The activities are new and interesting.	4.68	0.47	Highest
1.2 There are opportunities for the elderly to express their opinions on various activities.	4.44	0.48	High
1.3 The elderly recieve information about various activities which is clear and easy to understand.	4.04	0.49	High
1.4 The elderly are well taken care of while doing activities.	4.40	0.49	High
1.5 The elderly receive step-by-step instructions and steps in doing activities.	4.54	0.50	Highest
1.6 The elderly have opportunities to participate in various activities	4.66	0.48	Highest
1.7 The elderly receive the benefit of participating in the activities.	4.68	0.50	Highest
1.8 Various activities can actually train the memory of the elderly.	4.40	0.50	High
1.9 The elderly gain knowledge about dementia, recognize the symptoms of the disease and know how to take care of themselves.	4.04	0.47	High
Total	**4.43**	**0.48**	**High**
2. Time and Venue			
2.1 The venue is spacious.	4.40	0.47	High
2.2 The arrangement of the venue is in line with the guidelines for preventing the spread of COVID-19	4.40	0.49	High
2.3 Time for each activity is appropriate.	4.54	0.55	Highest
2.4 The environment of participating in the activities is appropriate.	4.40	0.50	High
Total	**4.44**	**0.50**	**High**
3. Activity Manual			
3.1 The colors and designs of the manual are interesting.	4.66	0.48	Highest
3.2 The font types of the manual are easy to read and beautiful.	4.54	0.65	Highest
3.3 The contents of the manual are easy to read and understand.	4.44	0.71	High
3.4 The arrangement of the manual contents is in a logical order, consistent and well connected.	4.36	0.48	High
3.5 The manual contents can facilitate the elderly to play the memory training games of each activity.	4.54	0.55	Highest
Total	**4.51**	**0.57**	**Highest**
Grand Total	**4.46**	**0.52**	**High**

From Table 2, the results of satisfaction assessment of the elderly towards the healthcare model and memory rehabilitation indicated that the overall satisfaction was at a high level with the mean of 4.46 (±0.52). When each aspect was taken into consideration, it was found that the highest satisfaction was with the activity manual aspect, with the mean of 4.51

($\pm$0.52); followed by the time and venue aspect with the mean of 4.44 ($\pm$0.50); and the participation aspect, with the mean of 4.43 ($\pm$0.48) respectively.

Discussions

       This research is concerned with the healthcare model and memory rehabilitation of the elderly with dementia by using community-based participation together with a set of collective operational guideline. It consisted of the purposes of the activities, the formulation of the activities, and the implementation of the activities by allowing the elderly to express their views on the types of organized activities. There was a collective problem-solving between the elderly and the research team during the participation. This enabled the team to realize and adjust in the activities so that they were most consistent with the community context. Furthermore, there was an adjustment of the method in offering activities to suit the needs of the elderly so that they could easily understand and benefit from those activities effectively. The established healthcare model for the elderly was composed of a dementia awareness activity in combination with memory training activities based on the Montessori Philosophy by exploiting the memory rehabilitation application in the form of games, which include Egg Games, Medicine Preparation Games, and Shopping Games. The results of the activities actually contributed to the memory improvement of the elderly as their memory scores after the experiment were higher than before the experiment. It was consistent with Robrujen (2017), who developed the elderly healthcare model for caregivers using the system theoretical framework (Sanguannam, 2002). This system comprised four phases including the study and analysis of the context and problem condition phase, the model development phase, the trial and evaluation phase, and the model improvement phase. According to the implementation of the aforementioned model, the findings showed that the mean of caregivers' knowledge after using the healthcare model was significantly higher than before the experiment with a statistical significance of .01. Furthermore, their satisfaction with the model was at the highest level. Therefore, this community participation-base healthcare model and memory rehabilitation for elderly with dementia was derived from the collaboration among all concerned parties within the community in designing the activities in the form of game application based on the Montessori Philosophy principle. This philosophy is a concept based on non-competitive and cooperative activities (Meinke, 2019). The research model emphasized and improved the elderly's personal skills in a balanced and holistic manner from simple activities to more difficult and complicated ones. This would lead to the three aspects of skill development, including life experience, sensory and academic aspects. These game-based activities would be able to enhance brain performances that could protect and restore memories of the elderly with dementia. This was corresponded with Chanthapremchit, Ruksapollmuang, and Prachuabmoh (2014) that the community participation-based learning for the elderly was essential. It should be cooperated by various sectors in the community. Similarly, the development of social networks has made caring for the elderly more beneficial (Rodjarkpai & Rojpaisarnkit, 2019). The participation of the community in caring for the elderly could raise awareness on the damage caused by dementia in the elderly and the created activities should be used on a regular basis in order to find out the disease at the beginning and curable stages. In addition, the elderly were satisfied with the model because the activities in the model were based on a focus group discussion which provided firsthand information that met the needs of the elderly. Furthermore, even the mobile activity, the elderly could play the games in their mobile phones as they had help and clear explanation from the staffs. Besides, the elderly often engaged in these types of activities provided in the games as part of their daily routine, such as cooking, shopping, or even preparing medicines. It was consistent with a long-term care model for the patients that the community should encourage health promotion by creating activities

to the early-stage patients including the elderly (Kokethong, 2012). This could make them comfortable and satisfied with the activities as well as could help improve the efficiency of the activities.

Conclusion and suggestions

The developed healthcare model and memory rehabilitation of elderly with dementia by using community-based participation consisted of three steps which were community preparation, research phase, and post-research phase. Additionally, overall satisfaction of the elderly with dementia towards the healthcare model and memory rehabilitation of elderly with dementia by using community-based participation revealed that there was a high level of satisfaction with the mean of 4.46 and the standard deviation of 0.52.

This healthcare model and memory rehabilitation for the elderly with dementia should be implemented in other areas in order to generate healthcare models suitable for and consistent with local situational contexts and needs.

New knowledge and the effects on society and communities

The research team obtained a community-based activity model for health care for elderly people with dementia. This model can be used or applied in other societies to slow down the deterioration of the brain of the elderly with early-stage dementia; as well as to reduce the burden on medical personnel and the costs of government hospitals that must be spent on caring for the elderly with dementia.

Acknowledgments

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The Processes of Ethnic Identity Reconstruction among the Karen Ethnic Group in Galyani Vadhana District, Chiang Mai Province

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Abstract

This study endeavors to explore the ethnic identity reconstruction through practices implemented in Galyani Vadhana's schools. It aims to explore how cultural knowledge is developed in educational environments using the framework of Culturally Responsive Pedagogy (CRP). It seeks to examine the methods used and offer insights into the knowledge and changes occurring within these communities. Employing qualitative methods, the research centers on two primary objectives: first, to examine the impact of CRP on promoting ethnicity identity reconstruction among Karen people including students, teachers and communities in the schools setting in Galyani Vadhana disrruct, Chiang Mai province; and second, to study the participation of Karen ethnic groups in educational institutions in fostering the reconstruction of Karen ethnic identities within schools. The key informants included teachers, students, and community members from a school at the study site. Data were collected through interviews and observations, then analyzed using a phenomenological approach.

The research underscores the importance of reconstructing ethnic identity among the Karen people, particularly within the educational context of Galyani Vadhana district. Collaboration between schools and the Karen communities is essential for fostering ethnic identity through a CRP. This approach involves developing a curriculum that aligns with community needs, embeds cultural values, and enhances the self-esteem of Karen students, teachers, and community members. By doing so, it reduces marginalization and preserve local heritage within the Thai education system. Second, active participation of the Karen ethnic group in educational institutions plays a significant role in promoting ethnic pride and identity reconstruction. The research suggests that increasing the representation of local Karen teachers, as opposed to Thai lowlander teachers who frequently relocate, could provide more continuity and cultural relevance in education. However, it is noted that ethnic minority teachers are underrepresented in the schools, partly due to the lack of emphasis on ethnic identity concepts in their teacher training programs. To address this gap, integrating multicultural education into university curricula for student teachers is essential for fostering a deeper understanding and appreciation of ethnic identity within educational institutions.

Keywords: Culturally responsive pedagogy, Multicultural education, Ethnicity, Identity, Galyani vadhana

Introduction

The integration of cultural knowledge into educational institutions is one of the avenue to enable younger generations to recognize the importance of their national and ethnic identities. In its essence, Multicultural Education aims to foster inclusive learning environments where students from diverse cultural backgrounds feel respected, understood, and represented (Banks, 2010). Cultivating awareness among the new generation of ethnic communities involves fostering an understanding of differences and recognizing the importance and pride in their own ethnic identity, which serve as a potential solution to the identity crisis that often arises among the younger population. This crisis is characterized by a tendency to neglect their ethnic identity and strive towards a more generalized Thai identity which lead to an identity crisis. Consequently, when attempting to transition from their local communities to urban societies, these individuals find themselves unable to compete effectively in the Thai social milieu. Subsequently, upon returning to their original communities, they struggle to reconcile with their previous identity, facing difficulty aligning with their initial cultural identity. (Buadang, 2006)

However, the Thai government has not been cognizant of this crisis. The state significantly shapes national education, influencing curriculum, textbooks, access, and outcomes to instill knowledge aligned with societal ideals and a national identity. Historically, assimilation efforts aimed to integrate the central Thai language and supplanting local languages began in King Rama VI's era, which intensified patriotic indoctrination, confining identities within a Thai framework and suppressing non-Thai identities. Measures enforcing the Thai language as the official and controlling information sources solidified this identity. Schools function as government instruments, molding individuals into a Thai-centric identity through their curricula, cultural activities, and teacher-led directives, reinforcing a singular national culture (Nawarat, 2008; Vaddhanaphuti, 2012; Winichakul, 2017). In rural areas of northern Thailand with diverse hill tribe communities like the Karen, younger generations gravitate towards modern, globally accepted values endorsed by the Thai state as "Thai-ness," drifting away from their ethnic identities and local cultures. This transition prioritizes a unified national identity, overshadowing individual diversity and marginalizing indigenous cultures. Ancient traditions and beliefs diminish in significance being challenged by modern influences, eroding traditional wisdom. State-appointed teachers assimilate the younger generation into the Thai cultural framework through the educational system, diluting their ties to ancestral cultures. Schools, beyond their educational role, serve as arenas for power struggles and the transmission of diverse beliefs among teachers, students, and staff.

Even though most teachers follow directives received from the Thai state in instilling a sense of Thai identity in students, some educators aim to promote multiculturalism within schools, employing varied strategies such as diverse teaching methods, integrating local wisdom, and formulating inclusive policies. However, for these practices to be sustainable, schools cannot operate in isolation; they must receive cooperation from the surrounding community. Hence, "participation" is often highlighted as a discourse tool to develop school environments in the Galyani Vadhana district.

However, numerous projects in the past have been discontinued. This is due to the characteristic feature of Galyani Vadhana District as a "transit zone," where newly recruited teachers often reside for a short period, typically 2-4 years, before relocating outside the area. As a result, the majority of practitioners are newcomers who often stay in the area for a brief period. In contrast, local residents who have been residing for an extended period are usually a minority and do not hold significant positions in schools. For this reason, various projects and initiatives within schools in Galyani Vadhana tend to be small-scale, short-lived endeavors

without sustained leadership (Field Note, interview with the principal, July 8, 2021) . Nevertheless, amidst the various short-lived projects, there is one particular space where the discourse of participation plays a central role in the development of both schools and communities, yielding successful outcomes and has been ongoing since 2013. The intriguing question arises as to why this school stands out, demonstrating successful practices in fostering a multicultural environment. There is a deeper significance beyond the mere adoption of the discourse of "participation," and the answer lies in the establishment of a Culturally Responsive Pedagogy (CRP), with schools serving as focal points ready to design curricula that meet the needs of the community. These needs include fostering pride and creating opportunities for youth in the local area through various teaching method and learning activities organized by both educational staffs and knowledgeable members of the cultural community spanning across the entire Galyani Vadhana district.

This research seeks to investigate the development of cultural knowledge within educational settings through the framework of CRP. It aims to analyze the methodologies employed and provide insights into the knowledge and transformations taking place within these communities. Additionally, the study explores how CRP can address the identity crisis prevalent in the region, identifies factors contributing to the discontinuation of multicultural education projects, and examines the impact of the transient nature of teaching staff on the sustainability and effectiveness of CRP in fostering ethnic identity among students. By filling this research gap, the study endeavors to enhance our understanding of how CRP can effectively facilitate the reconstruction of ethnic identity within educational institutions and the role of local communities in this process.

Research Objective
    1. To examine the impact of CRP on promoting ethnicity identity reconstruction among Karen people including students, teachers and communities in the schools setting in Galyani Vadhana disrruct, Chiang Mai province.
    2. To study the participation of Karen ethnic groups in educational institutions in fostering the reconstruction of Karen ethnic identities within schools.

Concepts and theories in conducting research
    Culturally Responsive Pedagogy (CRP) is an educational approach that emphasizes the incorporation of students' cultural knowledge and backgrounds into teaching practices. By integrating local wisdom and cultural traditions into the curriculum, CRP aims to foster a strong sense of pride and identity among students, particularly in communities where traditional cultural identities are at risk of being diminished by dominant national or global influences. This approach not only enriches students' educational experiences but also plays a crucial role in preserving and reconstructing ethnic identities within educational institutions.

    CRP stands as a pivotal framework in education, advocating for teaching methodologies that recognize and integrate students' cultural backgrounds, experiences, and identities. Rooted in theories of multicultural education, critical pedagogy, and social justice, CRP aims to establish inclusive learning environments that empower a diverse student body. CRP draws upon a range of theoretical perspectives, including critical pedagogy, cultural competence, and constructivism. Ladson-Billings (1995) asserts that CRP is deeply grounded in critical pedagogy, which urges educators to question power dynamics and societal norms within educational settings. Moreover, Gay (2010) underscores the significance of cultural competence, emphasizing educators' grasp of varied cultural backgrounds and their capacity to integrate culturally pertinent content into teaching practices. Constructivist theories further accentuate the importance of students' prior knowledge and experiences in shaping their

learning (Banks, 2015), aligning with CRP's emphasis on the valuation of students' cultural identities.

CRP embraces several guiding principles and strategies aimed at nurturing culturally inclusive classrooms. The development of culturally relevant curriculum entails the selection of materials and resources reflecting diverse perspectives and experiences (Ladson‑Billings, 1994). Integrating culturally responsive teaching methods, such as cooperative learning, narrative approaches, and the incorporation of students' cultural strengths into instruction, fosters student engagement and academic achievement (Gay, 2010; Villegas & Lucas, 2002). Additionally, establishing robust connections with students and their communities cultivates trust and fosters a supportive learning atmosphere (Howard, 2003). Research suggests that CRP can yield positive outcomes for student's learning. Scholarly investigations have demonstrated that culturally relevant instruction correlates with heightened academic achievement, enhanced attendance rates, and increased levels of engagement among students from diverse cultural backgrounds (Gay, 2010; Ladson‑Billings, 1995). Moreover, CRP has been associated with augmented self‑esteem and cultural appreciation among students, contributing to their overall well-being (Nieto, 2004).

While CRP holds promise, educators may encounter hurdles in its implementation. These challenges may encompass resistance to change, resource deficiencies, and inadequate training in culturally responsive methodologies (Milner, 2010). Addressing these obstacles necessitates ongoing professional development and support for educators, alongside systemic reforms within educational institutions to foster equity and inclusivity.

Methodology

This study utilized a qualitative research methodology with a phenomenological design to explore the deeper meaning of the phenomenon beyond surface‑level observations. The phenomenological approach centers on investigating individuals' lived experiences to uncover the essential structure of those experiences (Creswell, 2013). Instead of focusing on measurement or quantification, this method prioritizes understanding how individuals perceive and interpret their experiences. Researchers provide detailed accounts of participants' experiences to capture the richness and complexity of their subjective realities (Van, 2014). Ultimately, the phenomenological approach offers valuable insights into individual experiences, deepening our understanding of human behavior, perceptions, and meanings (Moustakas, 1994).

The phenomenon was explored by engaging with individual experiences within school settings in the Galyani Vadhana district. The study aimed to understand the process of reconstructing ethnicity using an analytical framework that involved collecting, analyzing, and synthesizing data into contextual concepts. This approach seeks to address the research question of how CRP can help resolve the emerging identity crisis.

In this study, data collection methods comprised documentary research, involving the review of relevant literature, and field research, where data was gathered on‑site through purposive sampling. The validity of the research instruments was confirmed using triangulation to ensure the data's accuracy.

The research data, collected from literature reviews and field research, will be analyzed qualitatively using Chai Pothisita's methodology (2016). The analysis process includes:

1. Data Organization: Arranging and categorizing information from observations, interviews, and documents to facilitate analysis.

2. Data Display: Presenting and linking the data systematically according to the analytical framework to interpret and narrate its significance.

3. Conclusion, Interpretation, and Verification: Formulating conclusions and interpreting the findings, while also verifying the accuracy and reliability of the results.

Research area

This study investigates the phenomenon occurring at Sunshine School (a psedonym), located in the Galyani Vadhana district of Chiang Mai province. The contextual significance of this educational setting lies in its cultural diversity, with a predominant population of Karen ethnicity, followed by Hmong, and a small Thai minority. According to Buadang's research (2006), the area grapples with identity crisis among the younger generation, who strive to assimilate into Thai identity, gradually forsaking their ethnic heritage, leading to various community issues. In the past, several organizations attempted to address this problem, and many schools initiated short-term projects to meet community needs. However, many school projects often tend to be short-term initiatives and lack continuity, resulting in minimal tangible outcomes. Consequently, Sunshine School was purposively sampled to explore why it is one of the few schools capable of designing learning programs that cater to community needs in such a context.

Participant

This study involved educational staffs, students and stakeholder of Sunshine School as key informants. The informants were selected using purposive sampling techniques based on the research objectives (Phothisita, 2019). This study involved one principle (Thai), four teachers (3 Thai 1 Karen), four student teachers (Karen), two contract teachers (Karen), sixteen students (Karen), three business owners in school area (1 Thai 2 Karen), and five local villagers (5 Karen) as the key informants. The informants were selected using purposive sampling techniques based on specific criteria that aligned with the research objectives.

Data collection and data analysis

The quantitative data collection methods were used into two parts as follows:

1) Documentary research: The contextual conditions, historical backgrounds, issues, and processes that various agencies utilize to address problems in the Galyani Vadhana were studied in this research (Buadang, 2007; Ruethaikrim, 2013; Sitthikriangkrai et al., 2015). Additionally, the utilization of CRP processes is examined to elucidate the phenomena occurring within the research area.

2) Field Research: The key informants in the research area were engaged through observation and in-depth interviews. The interviews primarily focused on their attitudes and perspectives regarding their ethnicity, school activities, and how to manage learning methods integrating local wisdom and the concept of multicultural education. Additionally, the study examined the changes that occurred after the school collaborated with the community and other school networks to establish CRP, and how these changes influenced the ideologies and attitudes of the individuals interviewed. The phenomena were analyzed through observation and in-dept interview, and recorded details during the field process from May 2021-October 2021 and Follow up again in January 2023. The obtained responses will contribute to addressing both research questions. Inquiries regarding curriculum, teaching methods, attitudes, and observations of various activities will be analyzed to answer research question 1, which investigates how the process of using CRP reconstructs Karen identity. The in-depth questions concerning the participation and work practices of the teaching staffs will help find answers to research question 2 regarding the involvement of the ethnic group teacher cohort in the implementation of CRP in educational settings.

Results

The researcher discovered through on‑site investigation that schools in the Galyani Vadhana district are actively using the "participation" discourse to reconstruct local ethnic identity. However, these efforts often lack continuity and tend to be short‑term due to the transient nature of the educational staff, who typically stay for only 2-4 years. Long-term local teachers, who are usually underrepresented in decision‑making roles, have limited influence on driving change.

To address this issue, a new principal initiated a project in 2013 that employed "participation" to engage the community. Initially, the project focused on small-scale cultural activities, such as wearing traditional attire and participating in community events. Over time, the school developed a CRP by integrating community members and local knowledge into the curriculum. They introduced vocational training in skills such as weaving and traditional music "Teh-Nah" and created income-generating opportunities for students through local and online sales of student-made products. The project has been ongoing since 2013 and has expanded to neighboring schools, highlighting the importance of community involvement, cooperation, and continuity. The principal's dedication, demonstrated by relocating permanently to the community, has significantly contributed to the project's success, establishing the principal as a valued community member rather than a transient outsider (Field Note, Interview with the Principal, July 8, 2021).

The impact of CRP on promoting ethnicity identity reconstruction among Karen people in the schools

From the observed phenomenon, the investigation results have shown that Sunshine School has undertaken the reconstruction of ethnic identity within the educational institution through the informal establishment of CRP in collaboration with the community and various organizations.

Sunshine School has chosen cultural knowledge as the primary domain for establishing CRP in the research area. The school's strategy involves finding a common ground between the community's desire to instill ethnic identity in the school and the Thai government's interest in controlling knowledge according to its agenda. The negotiation results in incorporating the curriculum desired by the villagers into school club hours and in Friday afternoon activities. This approach minimizes the school's need to modify the core curriculum received from the government. It also opens opportunities for the discourse of "participation" to play a role in engaging community members in curriculum design. The school provides opportunities for both the community and students to determine their learning objectives and presentations, in line with Ladson‑Billings' assertion that CRP encompasses multiple principles and strategies aimed at fostering culturally inclusive learning environments. Developing a culturally resonant curriculum involves selecting educational materials and resources that reflect diverse perspectives, experiences, and knowledge sources originating from within the community. The school serves as a conduit to adapt these elements, fostering confidence and empowerment among students (Ladson-Billings, 1994).

From the observed phenomenon, it is evident that the restoration of ethnic identity is not solely the result of collaboration from educational personnel in the school but also involves individuals from various sectors, including:

1. Educational personnel who serve as key operators, with the school principal leading the development of the school curriculum and coordinating with various agencies to provide knowledge in areas that school staff cannot adequately explain.

2. Students who participate in various activities jointly organized by the school and the community, exchanging knowledge with teachers through various activities. For example, students in the school prepare local meals, exchanging cooking methods between Thai and Karen cuisine.

3. The local community of Sunshine Village provides knowledge on weaving, with the female village chief serving as the main leader. They act as instructors, preparing necessary tools and equipment for weaving. On the male side, they take responsibility for sharing knowledge in rotational farming, building irrigation channels, and teaching local beliefs, including ceremonies such as Reak‑Kwan ceremonies, wrist tying ceremonies, and forest ordination ceremonies. They also facilitate communication for selling products with local businesses.

It was found that the policy of Sunshine School was changed in 2017, focusing on developing vocational skills for students, leading to the integration of indigenous knowledge into the school curriculum. This directly impacted the majority of teachers, who are Thai lowlanders, requiring them to learn about the local culture and adapt their teaching methods. Alongside, students sometimes became knowledge providers about their own cultural heritage to the teachers, fostering a sense of pride in themselves and changing their attitudes towards their ethnic identity to a more positive direction. This transformation was reinforced by community support, promoting the purchase of locally made products by students. Consequently, students gained pride in their craftsmanship and believed in the sustainability of their local knowledge to sustain their livelihoods. The community also benefited from participating in knowledge exchange with the school, allowing the transfer of indigenous wisdom to the younger generation.

The participation of Karen ethnic groups in fostering the reconstruction of Karen ethnic identities within schools.

Based on the researcher's data collection through in‑dept interview, it was found that the main actors involved were local villagers and local business owners who actively participated in designing policies and activities used in teaching and learning within schools. The key participants included village chiefs who served as community leaders, engaging in teaching weaving to female students and facilitating the provision of various equipment to the school, such as weaving machines and materials. Additionally, they coordinated with knowledgeable individuals from other communities to exchange learning experiences, fostering connections with other communities across the Galyani Vadhana region.

Local businesses have contributed to expanding opportunities for schools by accepting clothing and accessories produced by students to sell in local shops, as well as providing homestays available in the village. Regarding village temples, local religious leaders have played a role as spiritual guides in organizing religious ceremonies that incorporate the core beliefs and folklore of the Karen people, aiming to pass down stories, legends, and the history of the Karen people for younger generations to learn. There is also an exchange of knowledge with Wat Huay Bong, located in Wat Chan sub‑district, which has a CRP focused on indigenous cultural learning through cultural images and riddle.

However, despite receiving substantial cooperation from external communities, within the school itself, the indigenous community remains largely limited to a minority of teachers who participate in cultural exchange activities. Especially among student teachers from ethnic minority groups, their involvement is primarily limited to participating in learning activities rather than taking a leading role in disseminating their knowledge. These lack of participation mainly because the absence of multicultural education in their school years and they lack a deep cultural understanding compared to guest speakers and knowledgeable individuals from the Sunshine Village community.

Discussions

Through the study of the practice of reconstruction of ethnic identity within educational institutions, the significance of CRP was recognized in influencing the success of operations. This is achieved by utilizing participatory discourse aligning with the work of Buadang and Sitthikriangkrai, who examined operations and integrated the concept of participation into their research (Buadang, 2007; Sitthikriangkrai et al., 2011). It can be observed that addressing local problems and needs as the basis for operations has motivated community members to participate in various projects and initiatives. Therefore, it becomes imperative for educational institutions to develop curricula that are responsive to community needs as a foundation for initiating collaboration with the community. This collaboration serves as the basis for establishing CRP that will serve as the focal point for operations in the long term.

However, in educational institutions, there was the phenomenon show that ethnic minority teachers, who should ideally be leading these operations, have very limited involvement in activities. Most often, they merely carry out tasks assigned by the principal and handle simple tasks such as representing the school in coordinating with knowledgeable individuals in the community. The main reasoning is being from the same ethnic group, they share language and culture, which makes them more cooperative than involving Thai lowlanders in coordination efforts. However, when it comes to transmitting knowledge related to Karen culture, these teachers often act merely as supervisors, overseeing students' participation in activities led by external lecturers.

Through data collection via interviews with four student teachers, it was revealed that they are students from a university in Chiang Mai province, each with diverse backgrounds. However, they all share a commonality of being Karen ethnicities from various villages in the Chiang Mai province. They unanimously reported that the teacher training programs they underwent did not emphasize the importance of multicultural education or the incorporation of such curriculum elements. Instead, they primarily learned basic ethnic diversity concepts in only the social study courses. Furthermore, all four experienced identity crisis issues within their communities as well. For instance, in their villages, traditional cultural knowledge has gradually diminished, such as radio programs in Karen language disappearing, lack of inheritance of indigenous music like Teh-Nah, or even assimilating into Thai culture through marriage, language use, and adopting a lowlander lifestyle and abandoning the way of life that once coexisted with the forest. (Field Note, Interview on October 10, 2021)

This phenomenon was not exclusive to the university they attended; contact teachers who graduated from other universities in Chiang Mai also reported a lack of multicultural education in teaching curricula. The concept of ethnicity was only present in social studies courses, without delving deeper into anything beyond teaching basic definitions, while their participation in ethnic activities was limited to extracurricular activities organized by ethnic student groups. These findings underscore the importance of embedding multicultural curriculum components into teacher training programs. Educating teachers about the significance of ethnic diversity can help mitigate educational disparities, reduce cultural gaps, and enhance ethnic pride, aligning with Bank's concept (Banks, 2010). If there are improvements made to the curriculum to emphasize the importance of diversity and the significance of local culture to a greater extent, teachers are likely to receive training that enables them to transmit these values to students when they become teachers in their own communities (Field Note, Interview on October 10, 2021).

Furthermore, receiving low compensation as contract teachers is another reason why they lack motivation to perform duties beyond their assigned tasks. Therefore, promoting the production of indigenous teachers to return to their hometowns with cultural knowledge could

be another solution that creates continuous efforts to rebuild indigenous identity. This approach contrasts with short-term projects led by lowlander teachers who often leave schools every two years.

Conclusion and suggestions

Based on the research findings, it is concluded that instilling pride in oneself and one's roots through the reconstruction of ethnic identity holds significant importance for the younger generation. Collaboration between schools and communities is indispensable in this phenomenon. Schools serve as primary sites for establishing practices, necessitating the development of curricula tailored to meet the community needs. Additionally, instilling cultural ideas in students reduces marginalization, fostering self-esteem, and preserving local culture within the Thai education system. Communities, as bearers of the schools' outcomes, play a crucial role in extending these practices into aspects of daily life and business, contributing to fostering national pride. However, these efforts yield results when conducted as sustained long-term practices. Therefore, creating CRP by uniting individuals within the community or producing new teachers from the community might better meet the needs of Galyani Vadhana compared to relying on transient government-appointed educators.

New knowledge and the effects on society and communities

To establish ethnic reconstruction practices in schools in remote areas like Galyani Vadhana, it is essential to have local teacher or individuals who're willing to immerse themselves in the community for an extended period. This fosters continuity and community familiarity, making it easier to solicit cooperation from the community. Therefore, recruiting new teachers who are Thai lowlanders for permanent positions is not a suitable solution for driving change in schools, because Thai lowlander teachers often relocate outside the area every 2 years. Consequently, teacher training institutions may focus on increasing the production of teachers from ethnic minority groups and instill knowledge and importance regarding ethnicity to support their voice in schools before assigning them to permanent positions. This ensures that they can utilize their knowledge to further develop their local communities, as envisioned by their community's own aspirations.

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Development of Career Skills Model Based on Sufficiency Economy Philosophy Toward BCG Economy Model for Youth

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Abstract

The purpose of the project were to establish a career skills model for young entrepreneurs based on the sufficiency economy concept toward business and community development (BCG) and to study the career skills based on the sufficiency economy philosophy towards BCG of young entrepreneurs.

In order to investigate the career skills of young entrepreneurs in Chiang Rai and provide recommendations for career skill development based on the sufficiency economy ideology toward BCG Economy Model for youth entrepreneurs, a focus group methodology including 160 key informants was employed in the qualitative research method. Additionally, 400 participants in the quantitative study approach employing the professional skills exam for adolescent entrepreneurs were used.

The findings of the research showed that young people had a high degree of confidence in themselves. They were fast to self-discover and determined. They might modify technology to suit their needs. Learning and inventive, informational, life and career, problem-solving, creative thinking, and emotional regulation abilities were today's vital life and professional skills. The integration of professional skills upgrading with the sufficiency economy ideology is a recognized strategy for sustainable business among youth entrepreneurs. It is based on two requirements: knowledge and virtue, honesty, responsibility, and transparency; and three principles: moderation, rationality, and immunity. Ultimately, it points toward the BCG (Bio Economy, Circular Economy, and Green Economy).

Keywords: Career skills, Sufficiency economy philosophy, BCG economy, Youth entrepreneur

Introduction

The world situation in the 21st Century is different from the previous centuries. Therefore, it is necessary to develop the educational system to cope with the world and social changes. For this reason, many sectors: the leading private companies, national career institutes, and government educational offices, collaborate to develop the concept of "21st Century skills" and establish the Partnership for 21st Century Skills (Wongkitrungrueang and Jitrerk, 2019). The emphasis of 21st-century skills is on personal learning, from the kindergarten to university level, and throughout life via the 3R x 7C approach. 3R involves Reading, (W) Riting, and (A) Rithemetics, and 7C includes Critical Thinking and Problem Solving, Creativity and Innovation, Cross-cultural Understanding, Collaboration, Teamwork and Leadership, Communications, Information, and Media Literacy, and Career and Learning Skills (Panich, 2015).

This research aimed to examine careers or career skills because it is crucial and essential skills of the 21st Century skills, which enable the person to obtain self-analysis to choose the career to fulfill oneself, consider the optimal career that suits the personality, environment, values, and background, so the person has stability and is successful (Anne, 1964). In other words, career skills development is to enhance competency, so the person can make a living and live happily. Sufficiency economy philosophy (SEP) is the connection in this research. From the literature review, the researcher selected two relevant components to the career skills: Money Management (M) and Entrepreneur (E), which would enable the youth to have career development, get a good job, and become an entrepreneur who possesses good quality of life and becomes the valuable social member to develop the country. The SEP-based career skills development is in accordance with current development guidelines, which indicate that economic and social development is moving toward the BCG Economy Model, a modern pattern that can enhance Thailand's strength in a number of areas, including biodiversity and cultural diversity, by using creative, scientific, and technological mechanisms to produce high-value goods and services. BCG corresponds to the SEP regarding collective growth promotion and sustainable development achievement. The statement at the BCG in Action: The New Sustainable Growth Engine is "the triple-added value will be generated to the agricultural products, and the resource consumption would reduce two-thirds in 20-year time" (Office of the Ministry of Higher Education, Science, Research and Innovation, 2020).

From the aforementioned vital issues, the researcher would like to study and extend the career skills development based on the SEP toward the BCG for youth entrepreneurs aiming to develop the career skills development model based on the SEP toward the BCG for youth entrepreneurs. The researcher hopes the information and knowledge gained from this research will alert the awareness of the community and society of education and lifelong learning that strengthen the youth's technical and career for employment, good jobs, entrepreneurship, good quality of life, and valuable assets of the nation. With research results, the communities and society will comprehend and recognize the significance of the SEP as a crucial tool to upgrade the youth's quality of life and achieve sustainable development goals, educational institutes, and lifelong learning management. The directions for establishing and organizing the career skills development policy based on the SEP toward BCG for young entrepreneurs will be acquired by the municipality, local and provincial administration, and relevant authorities to youths. It makes sense in light of the provincial and national development plans that aim to achieve the sustainable development goal.

Objectives

1. To develop the career skills model based on sufficiency economy philosophy toward BCG for youth entrepreneurs.

2. To study the career skills based on the sufficiency economy philosophy towards BCG of young entrepreneurs.

Theoretical Framework

The research on "Development of career skills model based on sufficiency economy philosophy for youth entrepreneur" employed the 21st Century career concept. A new generation was born with technologies in the digital world and can intuitively use them from an early age, which is called digital native. For this reason, technology is playing a vital role, and becoming more intelligent. For instance, artificial intelligence (AI) that computer replaces the human workforce or English will not be the strength in the future because Thai youths will use English as their mother tongue. Meanwhile, human skills or soft skills: creative careers and strategic planning, which are the tasks that cannot be replaced by technology would be the labor market demand. At the same time, the world is turning into an aging society, so the demand for jobs concerned with elderly care is increasing. The change in career is explicit in the 21st Century. Therefore, people must be prepared for the shift (Siam Commercial Bank, 2021), particularly new generations. The idea of 21st-century jobs and the devolution of life skills for children and young people follows from this: educational programs are now designed to provide young people with the necessary skills to live in a way that is consistent with society of the future. As a result, educational curriculum reform is necessary as the curriculum frames the vision and guidelines for the learning goals and desired achievement for students. Thus, the educational reform finally fosters the essential knowledge, skills, attitudes, and values for youths to grow up efficiently and retain career skills (Delany, 2019), particularly entrepreneurship. The concept of entrepreneur explains the key factor of the entrepreneur is an ability to perceive the business opportunity (Keh, et al., 2002). The entrepreneur sees the opportunity, while others do not, and will see the possibility in it, but others do not (Keh, et al., 2002; Mueller & Thomas, 2001; Shane, 2003). Opportunity is the future situation, in which the entrepreneur foresees its possibility and demand, depending on the individual's perspectives (Littunen, 2000). Therefore, this concept proves skills and practices of youth entrepreneurs are required for the success. The concept of youth entrepreneur describes that business operations can be successful or failed. Some entrepreneurs lose their opportunity for other suitable careers. They have the potential to be responsible for their assets and outcomes, which rely on environmental factors (Kovacheva, 2014). In particular, the youths should have more awareness of this: the more skills they have, the more achievements they will get. Consequently, it invents new businesses, generates income for the country, transforms society, and improves the community. In addition, the research applied the concept of sufficiency economy philosophy or SEP, which is the philosophy guiding the living and practices of people, from the family and community level to the state level, in terms of development and administration to move forward in a middle path, especially the economic development to catch up with globalization. Thus, the SEP is adapted to the entrepreneurship of the youth to set the balance. The development based on the SEP is founded on the middle path and carefulness considering the moderation, reasonableness, immunity, knowledge, and virtue to plan, make decisions, and take action (Chaipattana Foundation, 2010). Operating a business holds a chance of failure, so running the business with the SEP would get it through the problems. The last concept is the BCG concept, which connects to the SEP concept perfectly. The BCG Model is the holistic development of three economics. It is a bioeconomy that focuses on the utilization of biological resources to add value by upgrading them to high-valued products. It links to the

circular economy, in which the focus is to reuse the materials. These economics fall under the category of "green economy," which prioritizes environmental protection for sustainability and security as well as the economy and society. From the relevant theories, it can be conluded as the following research framework.
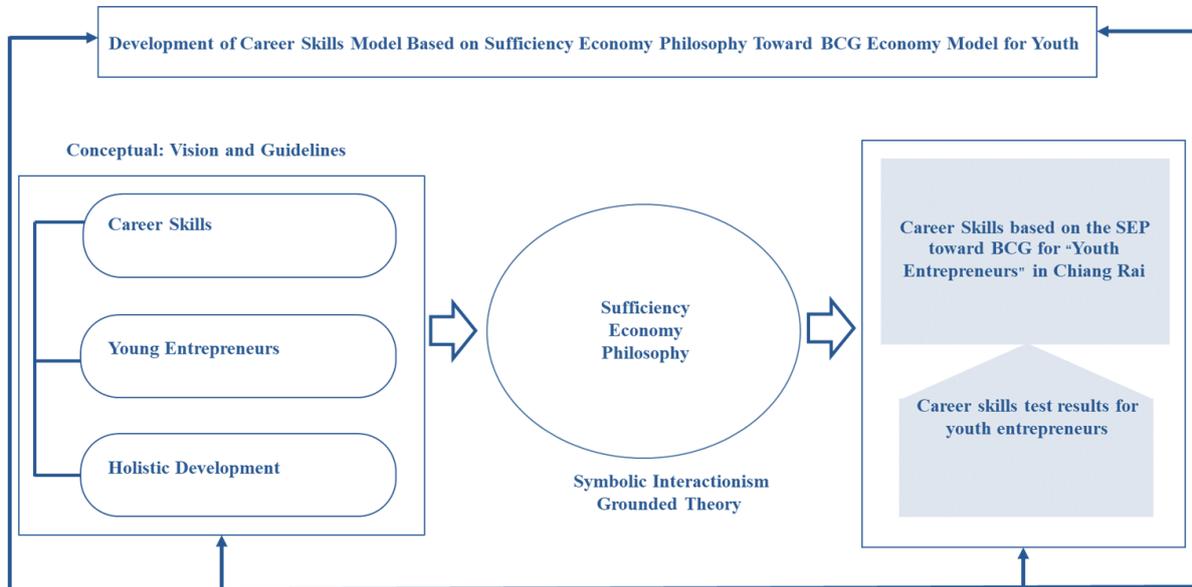

Figure 1 Research conceptual framework **(Researcher, 2024)**

Methodology

Research Design

This is mixed methods research applying the qualitative and quantitative research methods.

1. The qualitative method applied the focus group to study the career skills of youth entrepreneurs in Chiang Rai and the guideline for developing career skills based on the SEP toward BCG for the youth entrepreneurs.

2. The quantitative research method included the career skills test for youth entrepreneurs.

Respondents

The sample of included:

1. The sample group of the qualitative research method was 160 key informants who were acceptable for knowledge and expertise in career skills for the SEP, sustainable development goal, BCG economy, and education, and stakeholders in youth development, which were the educational personnel, personnel from the local administration, community leaders, BCG and Start-up experts, youth leaders and relevant organizations to youths. They were selected with the purposive sampling method.

2. The population of the quantitative research method was 101, 359 youths in Chiang Rai aged 15-25 years (Registration Administration Office, 2017). The sample group was youth entrepreneurs in Chiang Rai aged 15-20 years who had the average score of career skills for youth entrepreneurs from percentile 25 and lower, according to the Clark-Carter criteria (Clark-Carter, 2005). A sample size of 385 samples was obtained to cover all populations. The researcher reserved 5% of the sample, so the final number was 400 samples.

Data Gathering Tool

The researcher utilized the following tools to develop the career skills development model based on the SEP toward BCG for youth entrepreneurs.

1. Focus group - The researcher set the open-ended questions to ask the key informants. The sample of questions is as follows.

Table 1 Questions for focus group

No.	Questions
1	From your point of view, what are the career skills of youth entrepreneurs?
2	What are the characteristics of the youth entrepreneurs who have career skills?
3	Do you agree that the components of the career skills for youth entrepreneur are T-Thinking, D-Digital Literacy, C-Communication, L-Leadership, M-Money Management, and E-Entrepreneur?
4	Apart from T-Thinking, D-Digital Literacy, C-Communication, L-Leadership, M-Money Management, and E-Entrepreneur, any other components do you think relate to career skills for youth entrepreneurs?
5	What is the guideline for strengthening career skills based on the SEP toward BCG for youth entrepreneurs?
6	ET et cetera

2. Creating career skills test for youth entrepreneurs

The questionnaire consisting of two sections was used as the research tool.

Section 1 General information - The questions are about the general information of the sample group. It is the multiple choices and open-ended questions, such as gender, age, education, occupation, house location, etc.

Section 2 Career Skills test for youth entrepreneurs. The 5-rating scale questions (Likert): Outstanding, Very Satisfactory, Satisfactory, Fair, and Poor, are about the characteristics of the career skills for youth entrepreneurs.

Rating Scale	Rating Ranges	Descriptive
5	4.51 – 5.00	Outstanding
4	3.51 – 4.50	Very Satisfactory
3	2.51 – 3.50	Satisfactory
2	1.51 – 2.50	Fair
1	1.0 – 1.50	Poor

Data Collection Procedure and Treatment

The researcher delivered the questions at the focus group to the sample group: educational personnel, personnel from the local administration, community leaders, BCG and Start-up experts, youth leaders, authorities and organizations concerned with youths to consider and decide if they would like to participate in the focus group or not. Then, send the formal letter to interview them.

The researcher informed the sample group, who are the youth entrepreneurs, before completing the career skills test that they can stop at any time if they are uncomfortable with the question.

The information obtained from the focus group and questionnaire is anonymous. It is the summary of data from the interview and test for confidential purposes and privacy of the sample group.

Results

1. Results from the focus group

The discussion topic at the focus group regarding the career skills model development based on the SEP toward BCG for youth entrepreneurs is divided into three aspects.

Aspect 1 Context and characteristics of youth entrepreneur The Spatial context of Chiang Rai and business patterns relate to the physical and social conditions and cultural diversity. Chiang Rai follows a creative tourism development strategy. Consequently, new generations are eager to become entrepreneurs. More Thai people want to become entrepreneurs because their education is under a bachelor's degree, so they want to operate their own businesses. At the same time, people with a bachelor's degree or higher have different demands; some want to be entrepreneurs whereas some want to work with a foreign company or in the government sector.

Aspect 2 Career skills of youth entrepreneurs that support the BCG drive The sample group agreed that the career skills for youth entrepreneurs included thinking skills because they could think and manage products and services during the challenging economic crisis and uncertainty. Another one is digital literacy, which is the ability to comprehend, access, and apply digital technology efficiently. This is an essential fundamental skill for everyone because it can be extended to other specific skills. Communication skills are equally vital because communication is the necessary factor for living that supports the BCG move and success. It will function more effectively when combined with leadership abilities, which are essential for achieving goals and objectives since they are the means of managing staff and forming cohesive teams that enhance the firm. Furthermore, money management assists in wise spending, managing and handling taxation, saving, and investment. In addition, entrepreneurship skills can help the youth entrepreneur to set up and operate new businesses to generate jobs, inspire innovations, and set the framework and new products.

Aspect 3 Application of SEP to strengthen career skills of youth entrepreneurs toward BCG The SEP is applied to strengthen the career skills of youth entrepreneurs toward BCG based on the three principles and two conditions. Three principles comprised of 1) Moderation: Youth entrepreneurs should be in the middle path: less worried about profit to affect society 2) Reasonableness: Youth must be reasonable and careful for making decisions, and think about the economic, social, and environmental impact resulting from business operation 3) Immunity: Youth must conduct the business under reliance, adjust to cope with the disruption, and has a plan to manage the risk in terms of competition, product replacement, and finance. Two conditions consist of 1) Knowledge because expertise is the foundation of initiation and 2) Virtue so the business is conducted sustainably with zero impact on society.

2. Career skills test results for youth entrepreneurs

2.1 General information

Most youth entrepreneurs were females (55.70%) aged 24-25 years (42.75%). Their education was a bachelor's degree (73.80%) and had been working for 1-3 years (39.00%). Their income was 5,001 – 10,000 Baht per month (45.00%), and their debt was 10,001 – 20,000 Baht (24.25). 66.25% of them had money savings. Most youth entrepreneurs were from the nuclear family structure (consisting of father, mother, and child) (47.75%).

2.2 SEP and BCG information

Table 2 SEP information

SEP (Sufficiency economy philosophy)	M	S.D.	Descriptive Rating
1. Debt-free because of knowing how to spend, economizing, and spending moderately on investment, business, and daily life.	4.26	0.77	Very Satisfactory
2. Creating an income and expense account is necessary.	4.31	0.71	Very Satisfactory
3. Living a life based on reasonableness promotes a good quality of life.	4.19	0.83	Very Satisfactory
4. The family cultivates the good practice for the family members.	4.33	0.76	Very Satisfactory
5. Follow up with new information to catch up with the situation.	4.21	0.79	Very Satisfactory
Total	**4.26**	**0.52**	**Very Satisfactory**

From Table 2, the total average of SEP was 4.26. The standard deviation was 0.52, which was at a high level. Most youth entrepreneur's families fostered them to behave well (M = 4.33, S.D. = 0.76), followed by creating income and expense accounts is necessary (M = 4.31, S.D. = 0.71), and debt-free is from economizing (M = 4.26, S.D. = 0.71).

Table 3 BCG information

BCG Economy	M	S.D.	Descriptive Rating
1. Natural products reduce garbage and help environmental conservation.	4.04	0.79	Very Satisfactory
2. Environmental-friendly products should be produced from natural materials for simple decomposition, reducing unnecessary components, and using the fewest material for the structure.	3.98	0.90	Very Satisfactory
3. BCG economic model comprises the concept of bioeconomy, green-economy, and circular economy.	3.87	0.91	Very Satisfactory
4. The resources in the production system can be reused and recycled.	3.89	0.94	Very Satisfactory
5. To develop the country, society and economy should be developed along with environmental conservation.	4.16	0.88	Very Satisfactory
Total	**3.99**	**0.61**	**Very Satisfactory**

From Table 3, the total average of BCG was 3.99. The standard deviation was 0.61, which was at a high level. Most agreed that the society and economy should be developed along with environmental conservation (M = 4.16, S.D. = 0.88), followed by natural products reduce garbage and help environmental conservation. (M = 4.04, S.D. = 0.79), and environmental-friendly products should be produced from natural materials for simple decomposition, reducing the unnecessary components, and using the fewest materials for the structure. (M = 43.98, S.D. = 0.90).

2.3 Standard of career skills of youth entrepreneurs

Table 4 Standard of career skills of youth entrepreneurs

Career Skills	M	S.D.	Descriptive Rating
1. Thinking skills	3.83	0.66	Very Satisfactory
2. Digital literacy	3.88	0.67	Very Satisfactory
3. Communication skills	4.29	0.61	Very Satisfactory
4. Leadership skills	4.01	0.64	Very Satisfactory
5. Money management	3.89	0.61	Very Satisfactory
6. Entrepreneurship	4.01	0.64	Very Satisfactory
Total	**3.99**	**0.61**	**Very Satisfactory**

From Table 4, the total average of career skills was 3.98. The standard deviation was 0.51, which was at a high level. Most had communication skills (M = 4.29, S.D. = 0.61), followed by leadership skills and entrepreneurship (M = 4.01, S.D. = 0.64), money management (M = 3.89, S.D. = 0.61), digital literacy (M = 3.88, S.D. = 0.67), and thinking skills (M = 3.83, S.D. = 0.66).

Discussions

Research results from the focus group and career skills test for youth entrepreneurs can be concluded as follows.

1. Summary and analysis of qualitative data from the focus group Youths were confident; they were decisive, assertive, self-confident, and quick self-discovery. They were capable of adapting technology for activities. The essential life and career skills today were learning and innovative skills, information skills, life and career skills, problem-solving skills, creative thinking skills, and coping with emotion skills. The essential careers for living in the current world and in the next five years are concerned with technology, such as programers or occupations related to Start up technology, or new occupations that generate jobs or income. Therefore, the enhancement of life and career skills for youths is urgently required to prepare them to withstand rapid changes. The skills involved efficient communication skills, creative thinking skills, life skills, which comprised of knowledge, attitude, and skill in handling problems, decision-making skills, critical thinking skills, efficient communication skills, interpersonal skills, empathy, and digital literacy. Most important is the SEP must be integrated to acquire a sustainable business operation based on three principles: moderation, reasonableness, and immunity, and two conditions: knowledge and virtue, honesty, responsibility, and transparency.

2. Summary of study results on career skills based on the SEP toward BCG for youth entrepreneurs in Chiang Rai Most youth entrepreneurs were females (55.70%) aged 24-25 years (42.75%). Their education was a bachelor's degree (73.80%) and had been working for 1-3 years (39.00%). Their income was 5,001 – 10,000 Baht per month (45.00%), and their debt was 10,001 – 20,000 Baht (24.25). 66.25% of them had money savings. 26.50% of them had 20,001-30,000 Baht in their bank account. Most youth entrepreneurs were from the nuclear family structure (consisting of father, mother, and child) (47.75%).

Regarding the SEP information, the total average of SEP was 4.26. The standard deviation was 0.52, which was at a high level. Most youth entrepreneurs' families fostered them to behave well (M = 4.33, S.D. = 0.76), followed by generating income and expense

accounts is necessary (M = 4.31, S.D. = 0.71), and debt-free is from economizing (M = 4.26, S.D. = 0.71).

Regarding the BCG information, the total average of BCG was 3.99. The standard deviation was 0.61, which was at a high level. Most agreed that the society and economy should be developed along with environmental conservation (M = 4.16, S.D. = 0.88), followed by natural products reduce garbage and help environmental conservation. (M = 4.04, S.D. = 0.79), and environmental-friendly products should be produced from natural materials for simple decomposition, reducing the unnecessary components, and using the fewest materials for the structure. (M = 43.98, S.D. = 0.90)

Regarding the standard of career skills for youth entrepreneurs, the average of career skills was 3.98. The standard deviation was 0.51, which was at a high level. Most had communication skills (M = 4.29, S.D. = 0.61), followed by leadership skills and entrepreneurship (M = 4.01, S.D. = 0.64), money management (M = 3.89, S.D. = 0.61), digital literacy (M = 3.88, S.D. = 0.67), and thinking skills (M = 3.83, S.D. = 0.66).

Conclusion and suggestions

The career skills of youth entrepreneurs are founded on the SEP because they are fostered by the family to behave well, and making the income and expense account is necessary. It implies that constructing the awareness of career skills should be cultivated from an early age. It is in line with the project of Liunanon (2013), who summarized that the construction and promotion of mindfulness in the youth is essential. As a result, the SET Young Generation Project is established. Anyhow, the development of the career skills model should contain the guidelines for career skills promotion based on the SEP. Khakhiao, Srisuwanand & Weeraponkan (2002) stated that the development of the career skills model must involve the career skills standard: thinking, digital literacy, communication, leadership, money management, and entrepreneurship. The gathered data on the thinking skills of youth entrepreneurs in Chiang Rai illustrates the overall thinking skills of the new generation is 3.83, and the standard deviation is 0.66, which is a high level, particularly the higher order or more complex thinking skills. It is consistent with Khaemmanee (2001), who said that complex thinking skills contain multiple thinking steps that rely on the interpretation and core thinking skills at each step: formulating hypothesis, prediction, definition, analysis, system thinking, structural arrangement, and fundamental hypothesis. Given that shifting perspectives from the old paradigm to the new one is a critical 21st-century skill, especially when it comes to developing complex thinking skills that are essential for greater creativity and problem-solving proficiency, it is clear that young entrepreneurs must develop these kinds of skills in order to succeed (Thongjuea & Tummake, 2017). Another aspect is digital literacy, youth entrepreneurs possess this skill at 3.88, and the standard deviation was 0.67, which is a high level, especially the use of social media in earning and living. It is undeniable these businesses and trading are on social media, which is good for entrepreneurs and consumers as it saves cost and is two-way communication with immediate response (Sinasang, 2020). Further, social media is the professional network adapting its benefits to publish self-biography and connect with others. Additionally, the companies are able to search for excellent applicants posted on social media (Charoenthep, 2022). For this reason, digital is vital, and digital literacy is one of the desired skills for youth entrepreneurs. Regarding Communication, the overall is 4.29, and the standard deviation is 0.61, which is a high level, particularly the empathy and understanding of multi-culture. Youth entrepreneurs know what language should be used in which situation. This is another crucial skill for professional development because the entrepreneur with efficient communication skills can be successful. Thongsamrit & Yooyen (2012) said communication

is when the senders convey their thoughts, emotions, and feelings to the receiver to have the same understanding or follow the sender's instruction. Speech is the most popular method because it is simple, convenient, and fast. However, the unclear speech may be misleading or confusing, so the social and cultural context of the receiver should be taken into consideration to create efficient communication. Intercommunication impacts career or work performance. Chaenghiran (2018) stated that communication is the most important thing for administrating the organization to achieve the goal because it enables everyone to work together. Providing knowledge to build comprehension and collective power is one of the communication's objectives. It's not overly easy or too hard to communicate. Therefore, youth entrepreneurs must enhance these skills constantly for effective outcomes. As for Leadership, the average score is 4.01 and the standard deviation is 0.64, which is a high level, especially giving an opportunity to the colleagues to make a decision and believe that honesty and sincerity are created by the leader. Being a leader who listens to the team's opinions supports the success of entrepreneurs. Ekaphet (2018) said leadership is the ability of the leader to work and lead the group to success. It is the art of work in a person who motivates people to work successfully, and the skills and processes that lead to the achievement. Thus, leadership is a skills that requires training and development. Likewise, Surichamon (2019) mentioned that entrepreneurship, leadership, entrepreneur preparedness, and technological literacy affected the entrepreneur's success. The results are in line with this research, which discovered that leadership and digital literacy affect the success of youth entrepreneurs. In addition, the average score of money management in youth entrepreneurs was 3.89, and the standard deviation was 0.61, which is a high level, especially the expense estimation in daily routine and planning for savings in emergencies. This quality can be applied to entrepreneurs and other careers because estimation and savings are crucial. Most importantly, the new generation must be fostered with skills to earn and generate income. Lorpenphop (2022) pointed out that youth is a young seedling growing in its own way. Cultivating, fertilizing, and watering are needed. That said, the youth needs skills enhancement and earning income is one of the critical skills to focus on. Similarly, Liunanon (2013) established the project to promote income generation via the SET Young Generation Project on the Sufficiency Path in cooperation with the SET. This project emphasizes the significance of financial responsibility, which stimulates the recognition of positive and negative ongoing financial and social impact that finally results in the responsible use of resources and the propagation of the way of life based on the SEP. Last but not least, youth entrepreneurs have entrepreneur skills, which is very crucial, at 4.01 and the standard deviation is 0.64, which is a high level, particularly the belief in virtue and business ethics that would lead to success, and the competency in management as the essential quality of social entrepreneur. Nukulsomprathana (2020) highlighted that business ethics is the most important quality of large-scale, SME, and online or offline businesses, otherwise, no one would support their products and services. Business ethics involve business values that should be represented via the standard or work regulations to encourage the employees to perform work behavior with ethics. Additionally, Piros & Chaiyachan (2022) mentioned that business uncertainty results in the advance of technology and social changes that affect business growth. Therefore, a business operation founded on business ethics presents confidence and loyalty to customers, which finally influences business sustainability and survival.

The core SEP towards BCG relates to the career skills model development for youth entrepreneurs. During the past decades, the Thai economy expanded slowly, and the income of most Thai people was low. Moreover, Thailand had been trapped in the moderate-income circumstance. Therefore, the government has urgently steered up the economy by changing the economic and social development model into the BCG Economic Model to strengthen the strengths of Thailand for the higher values regarding biological and cultural diversity through the scientific, technological, and innovative mechanisms to produce high-value products and

services and transform the economic system from "doing more getting less" to "doing less getting more." For this reason, the BCG Economic Model is the vital mechanism to steer the growth of Thailand's economy, distribute opportunities and income, and bring wealth to the local communities thoroughly. Ultimately, Thailand will leave the trap of middle-income to high-income country and have sustainable economic and social development (National Science and Technology Development Agency, 2021). For this reason, the new generation of Thai youth must comprehend and recognize all these matters to develop the career skills model based on the SEP toward BCG for youth entrepreneurs.

Recommendations

1. Educational management and social development authorities can extend the development result of the career skills model based on the sufficiency economy philosophy toward BCG for youth entrepreneurs to the policy development to steer the development based on the SEP and support the business employing the BCG concept to promote the career skills of the youth entrepreneurs.

2. The research results can be developed for the trial of career skills development curriculum based on the SEPtoward BCG for youth entrepreneurs in various contexts, national and international levels, to upgrade the potential of people and foster the career skills in the entrepreneurs.

3. further studies should examine the factors promoting the construction of innovation knowledge for the youth entrepreneurs to correspond with the economic and social changes, which can be integrated with the career skills based on the SEP toward BCG. Furthermore, research on the SEP adaptation to design the strategy toward the international-level practice, as well as the study and creation of appropriate media for the future society, should be carried out.

New knowledge and the effects on society and communities

In order to support BCG for young entrepreneurs, this project develops new information in the form of a career skills development model based on the sufficiency economy concept. In order to accomplish sustainable development goals, it is essential that competent entrepreneurs are supported in their efforts to succeed in business, social development, and environmental responsibility all at the same time.

Acknowledgments

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The Investigation of Problems and Translation Strategies from Thai into English of Sakon Nakhon Rajabhat University Students

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Abstract

The main objectives of this study were to explore the difficulties that SNRU students encountered when translating sentences and to examine the translation strategies they used when translating from Thai into English. Using the purposive sampling method, 74 SNRU students were chosen to participate in this study. These students were divided into three major disciplines of study: 32 B.E. students, 21 B.A. students, and 21 B.Ed. students. Semi-structured interview questions and a questionnaire were used to collect data. The questionnaire was used to examine quantitative data, which was then presented as percentages. Content analysis was used to analyze qualitative data which are collected from semi-structured interview. Three inter-raters were asked to verify data from the semi-structured interview. The findings showed that five types of translation issues were identified. Word choice problems were the most common, accounting for 30%, followed by grammatical issues at 24.75%. Rhetorical and cultural translation challenges were also frequently encountered, making up 17.36%. Pragmatic problems were the least frequent, representing 10.60% of the issues. In addition, the study identified several strategies used by participants to overcome translation challenges, some of which were innovative while others were familiar. In comparison to the other newly revealed strategies, the most common strategy was translating using internet resources.

Keywords: Translation strategies, Translation problems

Introduction

The significance of English in the 21ˢᵗ century cannot be overstated, as it serves as an essential tool of communication, exerting influence in various fields including career tasks, educational endeavors, public health initiatives, and beyond. In the study by Wankong (2016) highlights the significant influence that the English language has had on both Thai society and the broader global community. The indispensability of the English language is underscored by its widespread use in many forms of direct communication, Internet access, television, film, and academic computer applications. Lack of proficiency in English might result in major repercussions. For people, it can result in missed chances for career growth, restricted availability of educational materials, and difficulties in engaging in international communication (Crystal, 2003). The lack of English fluency in societies may hinder international cooperation, decrease competitiveness in global markets, and raise obstacles to accessing the extensive amount of information primarily available in English (Graddol, 2006). Thailand, as a member of the Association of Southeast Asian Nations (ASEAN), continues to align with the ASEAN charter, which designates English as the official working language, underscoring its critical importance. This commitment remains central to cooperation activities across ASEAN nations, particularly in facilitating effective communication in interactions with both public and private sectors (ASEAN Secretariat, 2021).

The necessity of translation courses is emphasized in the Ministry of Education's TQF1 and Bachelor's Degree Qualifications standards (2017), which support the inclusion of English in the curriculum. Translation courses play a vital role in improving the proficiency of students studying English as a Foreign Language (EFL). The literature on translation pedagogy highlights the importance of teaching translation not only as a linguistic exercise but also as a skill that involves critical thinking and decision-making (Pym, 2012). Mathieu (2003) suggests that the process of translation entails making decisions that have the potential to modify the intended message of the text being translated. Consequently, it is essential to consult appropriate dictionaries and prioritize linguistic precision in order to achieve accurate translation. According to Newmark (1988), it is important to comprehend the writer's intention and choose appropriate words in order to maintain the intended meaning in the translated text.

The English language, due to its significance and impact, is pervasive in numerous aspects of existence, encompassing communication, professional advancement, and education. Sneddon (2003) underscores the significance of language within the context of international relations, highlighting its pervasive influence in significant organizations such as educational institutions. The integration of English language usage into everyday activities as a major component of educational instruction highlights the importance of comprehending various socio-cultural settings within each linguistic framework. As for the challenges associated to translating English to Thai and Thai to English among students at Sakon Nakhon Rajabhat University, they still remain, as can be noticed and quantified in translation classes. However, no statistical investigation has been undertaken to identify these specific difficulties. Therefore, this study examines problems and strategies in translation at the sentence level by Sakon Nakhon Rajabhat University (SNRU) students. Given that this study reveals the inherent content with which students struggle, it is likely to have a positive impact on translation as well. By identifying these challenges, the study will help educators and course designers create more effective translation courses, ultimately enhancing students' translation skills and their understanding of the complexities involved in translating between Thai and English.

Research objectives
The two main research objectives of this study are:
1. To explore the difficulties that SNRU students encountered when translating sentences.
2. To examine the translation strategies they used when translating from Thai into English.

Literature Review
1. Translation Problems
Translation as previously established is the transfer of ideas from the source language to the target language, not the modification of the text's substance or intentions. Moreover, translation, like any other English skill, primarily addresses issues arising from translation, such as discrepancies between the translated work and the original language text. Furthermore, the study of Napu and Hansan (2019) studied about translation problems according to the research questions, "What are the translation problems made by students of the English department in translating academic essays? by examining the ten essay translations, argumentative essay, comparison and contrast with Mathieu's (2003) theory which consisted of several translations problems themselves," this study aimed to investigate the students of translation class problems in translating academic essays and the causal factors of the translations problems themselves. Furthermore, the research revealed that grammatical issues were the most commonly detected problems in the work of translation students. The both in argumentative, comparison and contrast essays. Importantly, this research will focus on the outcome of short story translations performed by SNRU EFL students who have taken translation classes and have prior translation expertise. The aim of the study was to examine the issues they encountered and the solutions they came up with. Therefore, the further explanation information of the translation problems was found in the research study (Napu & Hansan (2019); Mathieu (2003)), the problems stated earlier are as follows:

1) Word-choice problem
During translation, the word-choice problem, also known as lexical choice, was always present. Word-by-word translations can yield diverse interpretations. The lexical choices made by translators are impacted by the meaning of the target text.

2) Grammatical problem
Translators cannot ignore the topic of grammatical features in translation. When translating the source text, many translators try to adapt the grammatical structure of the target text without changing the content or intent of the source. Despite translating the content into their first languages, readers will still enjoy the original text.

3) Rhetorical problems
The translator's failure to interpret the figurative language in the source-language text is known as a rhetorical difficulty in translation. It leads to incorrect translations of figurative words and sentences. This results in the loss of figurative words and sentences during translation into the target language.

4) Pragmatic problems
Pragmatics in translation refers to the process by which translators interpret the meaning of a source language text before translating it into the target language. In addition, pragmatic issues arise when translators fail to convey the intended meaning of the source language text to the target language.

5) Cultural issues
Mathieu (2003) defined cultural problems as "questions that deal with the contrasts of cultural background between two countries, values, and ideological views." Cultural references such as foods and festival cultural implications may be difficult to translate into the target

language. Therefore, translators need to explore methods for transforming the meaning or intent of the source language into the target language, and effectively translate texts that incorporate various cultural terms. Moreover, the translator must be aware of the target reader's culture, as target readers will comprehend it if the translator can adapt it into a close equivalent.

To summarize, all of the aforementioned translation issues, this study concludes that translators must be aware of the significance of carefully selecting words from the dictionary, as most of the issues mentioned above involve lexical uncertainty, where words have various meanings. Also, a specific discourse context will enable proper comprehension of the words. Another important factor is grammatical structure, as we all know that the source and target texts have various sentence structure norms.

2. Translation Strategies

The purpose of this study was to investigate translation issues and examine SNRU EFL students' translation tactics based on their Thai-English translation practices. As a result, other academics have conducted studies on translation efforts, such as Chanthong & Kaowiwattanakul (2024), who employed in translating English idioms in the subtitles of TV series 'Riverdale' into Thai. Altogether, 510 idioms were examined using Baker's taxonomy. The eight translation strategies of Baker (1992) they are follows:

1) Translation by a more general word (superordinate), this method is used to deal with the target language's lack of specificity in comparison to the source language.

2) Translation by using a word that is more neutral or less expressive, this approach is used when there is no equivalent in the target text. Replace the source content with a near-equivalent in the target language. This alternative is less expressive and more formal.

3) Translation by cultural substitution as a strategy of translation If we provide unusual information, readers may not understand the concepts of another culture. When the source culture is too complex to understand, and the translators want their readers to understand it easily, they can choose a concept from the target culture that the readers are familiar with.

4) Translation by using a loan word or a loan word plus explanation as a translation When translating a culture-related material and finding an equivalent is difficult. However, in other cases, clarification of the loan word is required to ensure that the readers fully comprehend its meaning.

5) Using a closely related word as a paraphrase, when the idea in the source item helps in understanding the target language, but in a different form, this method is applied (Baker, 1992). Translators utilize related words to express the same idea in the target language, but if there is no equivalent, they may have to use other words or structures.

6) Translation by paraphrase and using words that aren't connected to each other can make a translation that when the source item's semantic complexity prevents it from being lexicalized in the target language, this method is applied. Instead, the translator uses a broader word that is unrelated to the source item.

7) Translation by omission, also because the length of explanation may confuse readers, translators may remove some words or expressions if the meaning supplied by a particular item or term is not important or unnecessary to the development of the text.

8) Translators use illustration as a method of translation. When there are limitations in translation or no equivalent in the target language, translators utilize the illustration technique.

Baker's (1992) eight approaches are also recommended for translators to use in order to produce high-quality work for their audiences. The researcher used these strategies to analyse the data for this study. Another linguist, Boonyasaquan (2006) proposes the following translation strategies: Ignorance and avoidance. When a translator is translating a text and does not know the equivalent in the target language, they will choose a first-language substitute. Errors may occur during the translation of the first language due to the translator's ignorance.

If a translator cannot discover a first-language equivalent for a lexical item, he or she will use another word instead of translating it.

In the meantime, Farghal & Obiedat (1995), and Huang (2001) suggest translation strategies. Boonyasaquan (2006) quoted them, as do many other researchers.

1) Synonymy: When a translator does not know the equivalent, this strategy refers to using a word or phrase that has the same or almost the same meaning as another word or phrase.

2) Avoidance: When translators are unable to understand the meaning of lexical items in the target language, they employ this strategy.

3) Transfer: This strategy assumes a one-to-one relationship between the first and target languages. The target language utilizes this assumption.

4) Paraphrasing: This strategy dedicates itself to providing a definition for a word, phrase, or explanation using various words to clarify the original meaning. Translators sometimes use this strategy when they are unfamiliar with the equivalent concept in the target language.

Finally, there are a variety of translation strategies. The translators can choose the best translation technique. This, of course, is dependent on the source text and the issues at stake. Undoubtedly, translators employ multiple techniques to produce high-quality translated works. Therefore, this study will showcase the various strategies that SNRU EFL students have been using in their classes and practice sessions. Furthermore, they may employ other strategies that are not discussed in this paper, or alternative translation strategies.

Research Conceptual Framework

This exploration is essential to understand the specific difficulties students encounter during the translation process. The primary objective highlighted in the framework is to utilize the research findings to inform and enhance the planning and creation of translation instruction. This is aimed at overcoming the identified challenges, ultimately leading to more effective and contextually appropriate translation courses that can better prepare students for the complexities of translating between Thai and English. To completely understand this study, Figure 1. represents the concept through this conceptual framework.
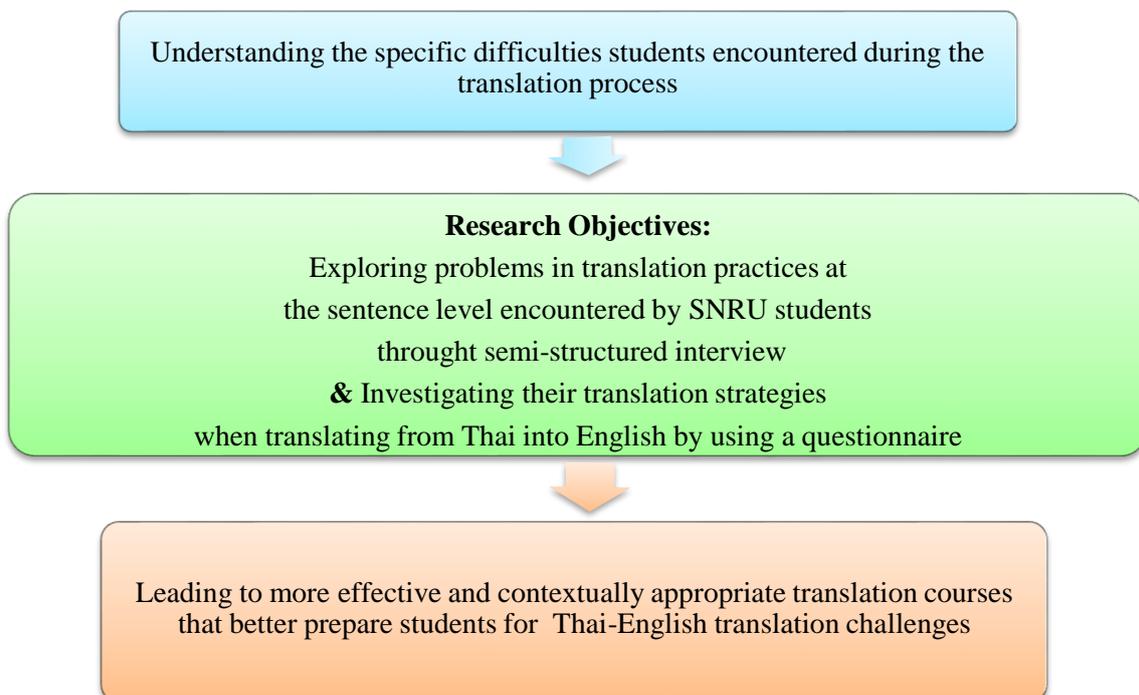

Figure 1 Research conceptual framework of the study (Researchers, 2023)

Methodology

The methodology of the research consists of four main aspects for selecting and gathering information: the samples, research instruments, data collection, and data analysis. The method to select the sample for this current study is presented as follows:

1. Population

The research population is SNRU students who are studying in the faculty of Humanities and Social Sciences, and faculty of Education. They enrolled in the translation course from Thai to English in the academic year 2019–2020, and they also had experience translating messages from Thai to English. According to the setting of the population that was mentioned earlier, the total population is 255 students.

2. Sample

The sample of this current study was selected by using the purposive sampling method. The size of the sample is calculated based on the formula of Dr. Anuwat Koonkaew (Koonkaew, 2019). As a result, the sample from the English for Business Communication (B.E.) program is 32 students, the sample from the English (B.A.) program is 21 students, and the sample from the Education Program in Special Education and English (B. Ed.) is 21 students.

3. Research Instruments

The research instrument for this current study is classified into two main sets, there are questionnaires to collect quantitative data and semi-structured interview questions to gather qualitative data. The instruments in this current study are divided as follows:

3.1 Questionnaire

The first set of research instrument is a questionnaire that is utilized for collecting quantitative data. It is used to collect demographic information of informants and strategies they apply to solve the problems facilitating their translation. There are 4 opened-ended questions, which relates to strategies during their translation practice. This questionnaire is applied to response to research purpose no. 2.

3.2 The semi-structured interview questions

The second set is semi-structured interview questions that are utilized to collect information for qualitative data, it is utilized to response to research objective no. 1. This instrument is aimed to interview by using open-ended questions for confirming their answers that were gained from the questionnaire, the experience in translation from Thai to English including problems of the informants faced in their practices. There were 4 questions that address problems encountered in translation.

The research instrument used for collecting the data is as mentioned earlier. The questionnaire and semi-structured interview questions were validated by three experts through using the index of item objective congruence or IOC (Laksana, 2016). The IOC value of questionnaires and semi-structured interview questions were 0.915 and 1 respectively.

4. Data Collection

The data collection process in this study was divided into two separate phases, employing both quantitative and qualitative methodologies. The initial phase involved the presentation of the qualitative data collecting. The explanation of the quantitative data gathering was provided during the second phase. The explanation of the complete data collection process was provided as follows:

The first phase of the data collection

The data qualitative collection is the first phase in which semi-structured interview questions were used to collect the data. This data collection is gathering the data from the sample by interviewing about their translation practice which are the qualitative data from an open-ended questions interview. The informants were asked their permission for a recording before starting the interview. In the primary interview, the informants or the sample were interviewed about demographic information, their experiences including the level of translation work they ever translated, especially translation from Thai to English. Next, the sample were asked about the problems that they faced during their translation, it was an essential point according to the purpose of the current study.

The second phase of the data collection

Quantitative data collection was used to collect the data in the second phase which is the questionnaire, the sample questions in the questionnaire were explained to the informants. This component contains questions in questionnaires related to informant demographics.
The questionnaire was used to collect data in the second phase to back up the qualitative data.

5. Data Analysis

The analysis of the present study is classified into two parts, which consist of the data analysis for quantitative information and the data analysis for qualitative information.
The data analysis is as follows:

5.1 Data analysis for quantitative information

To response to research objective no.2, the quantitative information was collected by using the questionnaire which is stated to the translation strategies. The data were analyzed and presented the data in the form of percentage. In addition, the form of percentage was shown from the highest percentage to the lowest percentage, it shows the percent of strategies that the informants applied. Further, the standard statistical formula for quantitative data analysis was percentage.

5.2 Data analysis for qualitative data

To response to research objective no.1, the part of data analysis for qualitative data was explored by using semi-structured interview questions that were clarified in the form of content analysis. The interview data from semi-structured interview questions were identified in content analysis. Three inter-raters were asked to verify data from the semi-structured interview. For this reason, the coding of the data in the form of content analysis was numerous used in qualitative research. Further, the content analysis was coded from the interview information. The purpose of the content analysis is to transform the data into extremely organized and compacted information. The raw data analysis, which included word-by-word coding of data from interviews, resulted in the creation of categories and themes, which were used to extract further information at each step of the analysis: from the literal meaning to the latent meaning or from lower level to higher level (Erlingsson & Brysiewicz, 2017). The component of data analysis includes the step of the content analysis, they were detected using the concept of Erlingsson & Brysiewicz (2017), the step of the content analysis is presented as follows;

- The meaning unit is the raw data or the literal meaning of the interview information.
- The condensed meaning unit step is about selecting only essential keywords from the step of the meaning unit.
- Code is the third step for interpreting the meaning of all keywords from the step of the condensed meaning unit.
- The category is the fourth step of the group all lists from the first-three steps before, in terms of the similarity or difference of the text were together including the problems and the strategies that are obviously seen in the data.

- The theme is the last step. It is the summary of all steps mentioned earlier, shown in the data at the analysis level, it is a theme to lead purpose for analysis, including shows theme is the problems or the strategies that are analyzed which is the main goal of the current study.

All in all, the code grouping depends on the aim of the study which was the theme of this current study, to explore the translation problems and to study the translation strategies of SNRU students as they were the informants of this present study.

Results

The data were analyzed and presented in two different sets. The first set is presented for qualitative data by using the method of content analysis, which is based on the theory of Erlingsson & Brysiewicz (2017). The data from the interview was analyzed as qualitative data in the form of tables. The second set is quantitative data. The standard statistical formula, like percentage, is used for quantitative data analysis. The results were presented in response to the research objective as follows:

The results in response to the research objective 1: The findings identified problems in translation practice at the sentence level of SNRU students. Whether they ever enrolled in a translation course or had any experience in translating, they were still facing problems in translation. The findings revealed that there were five translation issues, with word choice issues being the most prevalent (30%) and grammatical issues coming in second (24.75%). Translation problems about rhetorical problems and cultural issues were found to be frequently faced (17.36%). The pragmatic problems were found to be the last problems (10.60%), respectively.
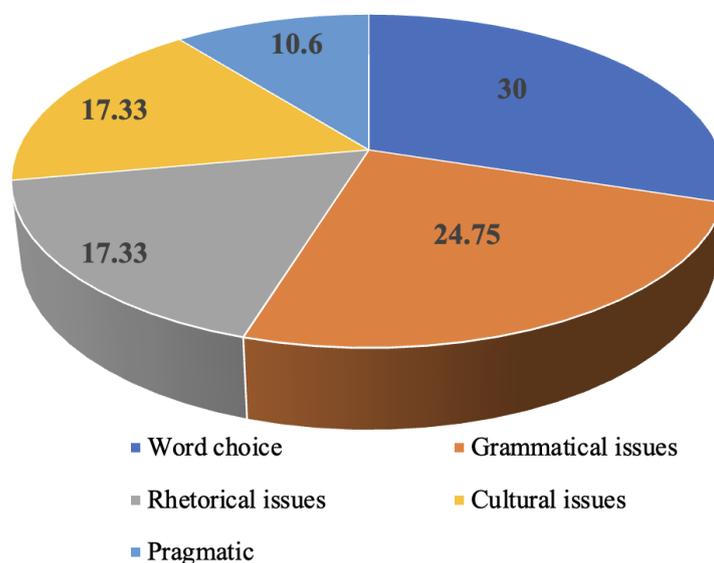

Figure 2 The results of translation problems encountered by SNRU students
(Researchers, 2023)

The research results presented as percentages above were obtained through content analysis, where the frequency of themes was counted to display the results as percentages. A sample steps of content analysis is shown in the following table.

Table 1 One sample of the grammatical problem of the informant

Overarching theme: The most problem of SNRU students faced while they were translating.

Step of Content Analysis	Meanings
Theme	The most problem faced while translating
Category	faced grammatical problems in translation
Code	Grammatical problem
Condensed meaning units	grammatical problem, translate from English to Thai and vice versa, use of grammar may not be 100% accurate
Meaning unit	When I was studying translation, I encountered a grammatical problem. I need to translate from English to Thai and vice versa. The use of grammar may not be 100% accurate.

Source: Erlingsson & Brysiewicz (2017)

Table 1 shows one sample of the problem of B.Ed. student. The informant expressed confusion regarding the grammatical structure of the text. Therefore, it is interpreted his/her problem as grammatical problem.

The results in response to the research objective 2: The second objective was to study the translation strategies of SNRU students. The results addressing this objective were obtained from interview data and can be presented in two main categories: findings related to translation strategies based on translation theories and the translation techniques used by the target group during their translation process. The study's findings are as follows:

The findings related to translation strategies based on translation theories

The findings showed that the most frequently used strategy was finding synonymy (20.04%), followed by surfing the internet (19.00%), then consulting an expert (17.36%). The context clues were surveyed before translating (9.48%); this strategy was frequently used. Utilizing the application (8.93%) was almost as common as using the back translation (8.43%) and then using the omission translation (7.34%). Then, the use of translation by loan word or loan word plus explanation (4.16%) or using a dictionary was rarely used (2.63%).

The translation techniques used by the target group

The rest were translated by using more neutral or less expressive words (1.59%). The last, ignorance and avoidance were barely used (1.04%), respectively.
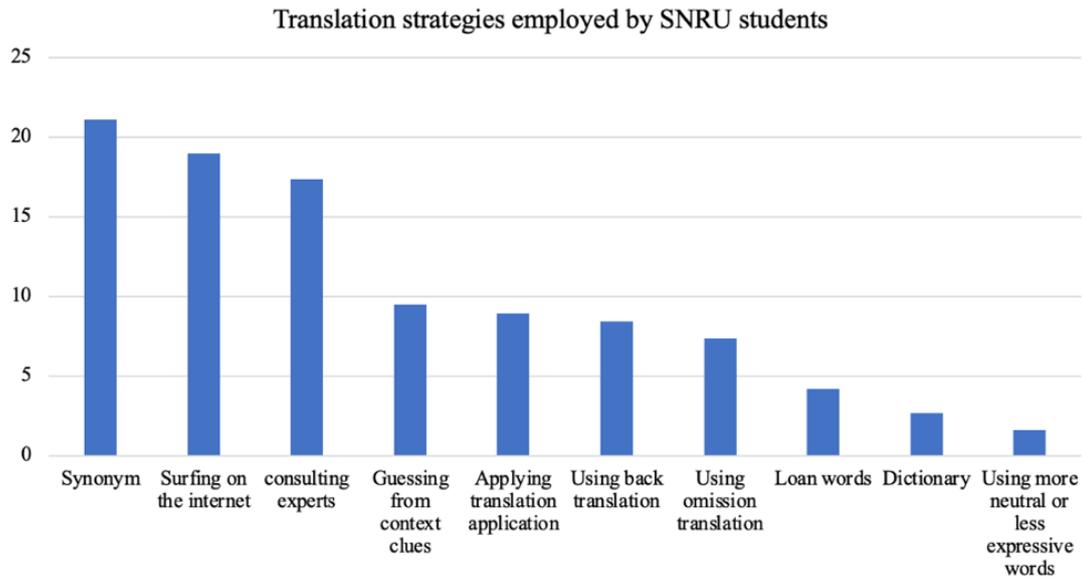
Figure 3 The results of translation strategies employed by SNRU students
(Researchers, 2023)

Discussions

The findings revealed that the SNRU students faced five significant issues in their translation practice, which persisted despite their prior translation experience or enrollment in a translation course. This suggests that translation challenges are complex and require more than just instructional exposure to overcome. The prevalence of word-choice issues (30%) highlights the inherent difficulties in selecting the correct meaning among multiple possibilities, a problem noted in recent translation studies as a key challenge for non-native speakers (Laviosa, 2014). This issue is exacerbated when the vocabulary in the source language has multiple meanings in the target language, leading to confusion and potential inaccuracies in translation (Mellinger &Thomas, 2017). The grammatical issues encountered by students, which were the second most common at 24.75%, underscore the importance of grammatical competence in translation. Similar to the findings of Napu & Hasan (2019), grammatical errors are a significant challenge for EFL learners, which can compromise the accuracy of the translated text. Rhetorical and cultural problems, which accounted for 17.36% of the issues, indicate the difficulty in preserving the original text's intent and cultural nuances during translation. This is supported by House (2014), who argues that effective translation requires not only linguistic competence but also a deep understanding of the cultural context in which the source text was produced. The pragmatic problems, which were the least frequent at 10.60%, nonetheless highlight the complexity of translating language that carries implicit meanings or requires context-specific knowledge. When it comes to addressing these translation challenges, the study found that SNRU students employed a variety of strategies. The most frequently used strategy was finding synonymy (20.04%), followed closely by surfing the internet (19.00%) and consulting an expert (17.36%). This suggests that students often rely on external resources and peer consultation to overcome translation difficulties, which aligns with the findings of Kiraly (2014), who emphasized the collaborative nature of the translation process in educational settings. The diversity in the strategies employed by students, as revealed by this study, reflects the adaptive nature of translation practice. As observed by Baker (1992), translation is not a one-size-fits-all process, but rather a dynamic activity that requires translators to use a range of strategies depending on the specific

challenges they encounter. The findings of this study are also in line with those of Junining & Kusuma (2020), who found that students used multiple strategies from Baker's taxonomy when translating news stories, indicating the need for flexible and context-sensitive approaches in translation education. Overall, the results of this study underscore the importance of incorporating strategic competence into translation instruction. By understanding the specific challenges that students face and the strategies they employ, educators can develop more targeted instructional methods that address these challenges and enhance the overall effectiveness of translation courses.

Conclusion and suggestions

In conclusion, the translation problems and translation strategies in translations of SNRU students as they were the samples in this current study, still found the problems, namely word-choice problems, grammatical problems, rhetorical problems, cultural problems, and pragmatic problems respectively. In addition, the presented study explored the strategies of the samples earlier. The result of translation strategies showed that finding synonym strategy is a major strategy, followed by surfing the internet, consulting the expert, context clues surveyed, using applications, back translation, omission, loan word or loan word plus explanation, dictionary source, a more neutral/less expressive word, and ignorance and avoidance strategy. Those results were the strategies that the sample used to solve the problems in translation.

The suggestions were clarified for people or readers who are interested in researching translation challenges. In addition, further study is suggested about the problems that were found based on this current research including, the solving problem tactics or strategies. The following are some suggestions from the researcher for those who are interested:

1. The first suggestion is about studying at other levels such as paragraph-level and essay level.

2. The second suggestion is about suggestions to use technology to facilitate their translation practice.

New knowledge and the effects on society and communities

This current study's results indicated that the students from SNRU, who served as the participants in this investigation, encountered the five aforementioned challenges discussed earlier. Despite their prior knowledge of translation or enrollment in a translation course, individuals nevertheless encountered difficulties throughout their translation practice. The identification of translation problems varied among informants, based on their individual translation efforts. Moreover, in the context of this study, the translators, serving as the primary sources of information, possessed various approaches or strategies to address the problems encountered during the translation process. The present study examined the translation strategies employed by the informants, based on several approaches for addressing translation challenges. The utilization of translation techniques showed variations, with the specific selection of strategies depending on the informants' employed approaches for problem-solving, which were seen to be both diverse and interconnected. For the contribution from this study, the findings of this study will provide vital information for teachers of translation studies to use as a guide for improving the efficiency of translation teaching techniques, particularly in translating from Thai to English. In addition, the findings of this research will aid students who are learning English as a foreign language since they will improve these students' understanding of various translation strategies and contribute to the implementation of these strategies in the students' future translation practices.

Acknowledgments

The researchers would like to express our sincere gratitude to the English Department, Faculty of Humanities and Social Sciences, Sakon Nakhon Rajabhat University, for encouraging and supporting to do this research.

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Appendices
Appendix 1: List of questions in the questionnaire & Semi-structured interview
Questions about translation problems and strategies
1. Have you had experience translating from Thai to English?
2. Do you have any experience translating Thai to English? At what level have you translated example phrases, words, sentences, paragraphs, and essays?
3. Did you encounter any problems in translation? What is the problem (if you don't have permission to use the translation application)?
4. How do you deal with problems in translation?

** All of the questions in the questionnaire are utilized to interview for confirming the informants' answers about their experiences in translation from Thai to English, including problems the informants faced in their practices.

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Manuscripts must be reviewed by the experts (Peer Review) from outside the university in that field of study, 3 experts per subject, who are outsiders from various institutions. Whereas the experts do not know the names of the authors and the authors do not know the names of the experts (Double-blind Peer Review) The research and development institute will recruit the experts to receive an assessment if there is a correction. The Research and Development Institute will return the assessment reading results to the authors to add, edit or print the manuscript as the case may be.

Publication Ethics in the Community and Social Development Journal : CSDJ *(Formerly khows as* Chiang Mai Rajabhat Research Journal)

Community and Social Development Journal is a journal to support research for community in the field of social sciences, established guidelines and publication ethics, publish articles for the operation of the journal published correctly. As part of the journal's commitment aligns its practices with the guidelines and recommendations of leading organizations in academic publishing, including the Committee on Publication Ethics (COPE) are as follows:

Authorship :
1. Authors must consider and agree on the order of all authors, and provide a clear list at the time of initial submission. Editors will consider adding, deleting, or rearranging authors after initial submission only in exceptional circumstances. All authors must agree to such additions, deletions, or rearrangements.
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3. Articles must be written in English and must not contain defamatory or libelous content.

Ethical Consideration : Ethical Concern Reporting Section to Journal provides a confidential e-mail for reporting ethical concerns. Authors, reviewers, and readers can submit their concerns or observations related to ethical issues by contacting the editorial office. All reports will be handled with confidentiality and sensitivity, and the appropriate actions will be taken to address the concerns. Send to e-mail : research_cmru@hotmail.com.

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A retraction of a published article may be initiated by the editors of the or by the authors of the article.

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It is proved that the publication contains unreliable findings, either as a result of major errors, fabrication, or falsification of data. It is proved that the publication constitutes plagiarism, or the findings have previously been published elsewhere without proper attribution to previous sources or permission to republish. It is found that the publication contains material or data without authorization for use. Unethical research or research misconduct has been reported. The authors have failed to disclose any conflicts of interest or failed to obtain agreement for publication from any other researchers involved in the research process.

If a publication is retraction, CSDJ journal and its editors will take the following actions: Issue a clear retraction notice on the CSDJ journal website, including the title of the article, the authors' names, and the reasons for the retraction. Notify the highest authority of the authors' affiliated organization about the retraction. Prohibit the authors of the retracted article from publishing with CSDJ journal for a period of 5 years.

Roles of the author of the article

1. The journal requests the author of the article to certify the submitted academic article, that was a new one by the author of the article. Did not copy other people's academic article. No copyright or intellectual property infringement, and has never been published anywhere before. If any of the above actions are detected, it is the responsibility of the author of the article for copyright infringement.

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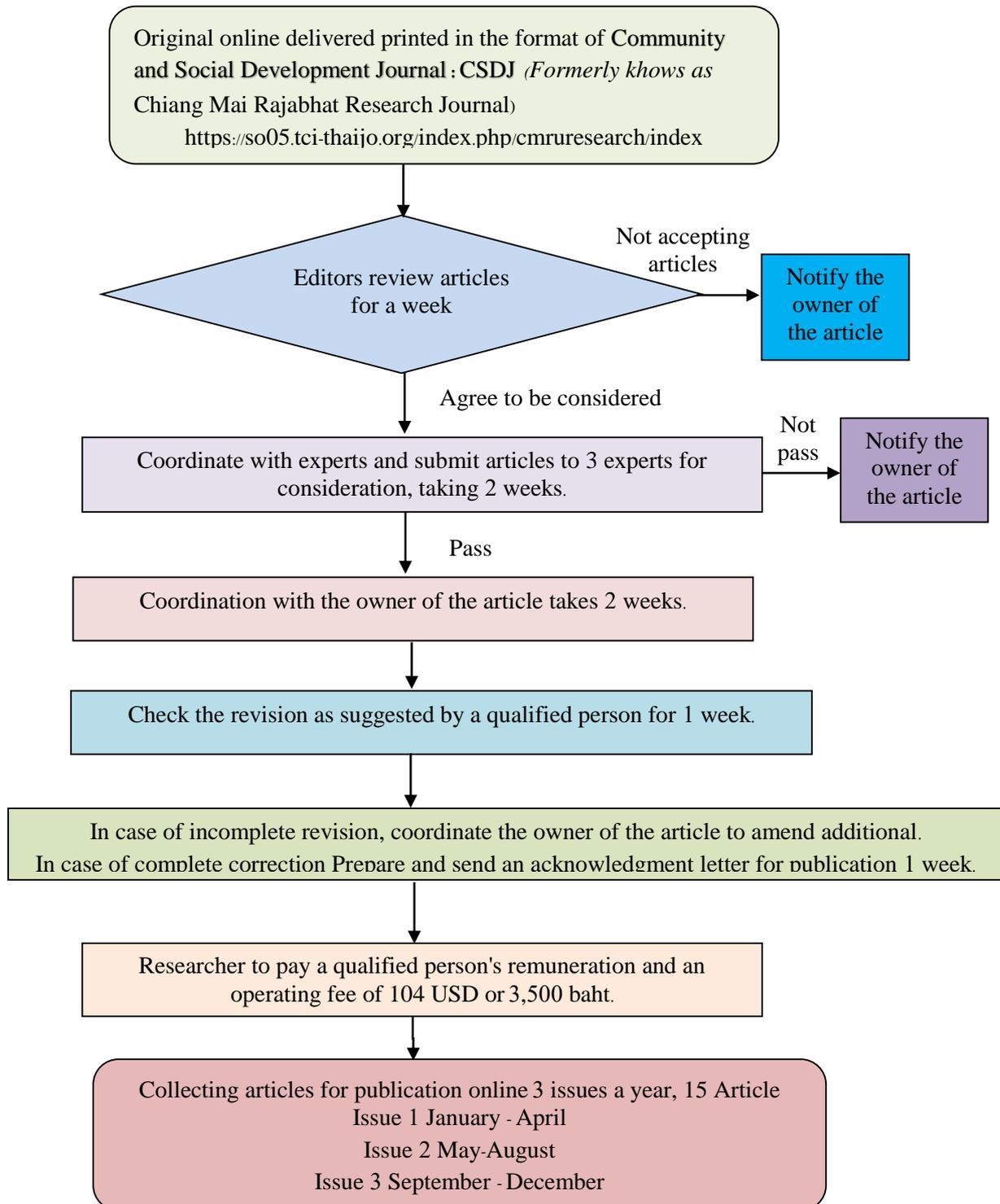
Role of the editorial team

1. Journal consultants are responsible for the considering policy recommendations in operation for the **Community and Social Development Journal** : **CSDJ** *(Formerly khows as* Chiang Mai Rajabhat Research Journal).

2. Journal editor is the center and the main editor for considering and reviewing articles. Consider consistency of the article content with the aims and scopes of the journal. Including review and assessment quality of the articles before publication.

3. A journal editor is a group of people who act as a working group of editors. Responsible for considering and reviewing articles. Consider the consistency of the article content with the aims and scopes of the journal. Including review and assessment quality of the articles quality before publication.

4. Editorial's responsibilities to the authors of the articles and assessors

    4.1 Do not disclose the information of the authors of the article and reviewers to anyone else.

    4.2 Review and reject the publication of articles previously published elsewhere.

    4.3 Required using the principles of considering articles based on academic reasons, and there must not be bias to the authors of the articles and the articles that considered in any case.

    4.4 There must not have interests with the authors or reviewers. Either for business advantages, or for their own academic articles or other advantages.

    4.5 Check plagiarism of other people's academic work in the article. If plagiarism is detected, the article review process must be stopped, and contact the author of the article for clarification. To accept or reject the publication of the article.

    4.6 Check the journal article assessment process as a secret. It is fair and without bias.

    4.7 Published articles that passed the assessment process from the article reviewers only.

    4.8 The article contents and evaluation results of the article reviewers must not be modified or changed.

    4.9 The processes and procedures of the journal must be strictly followed.

Roles of the reviewers

1. The article reviewers must not have interests with the author of the article.

2. The article reviewers must maintain confidentiality, and do not disclosed the information of the article to unrelated persons during the assessment of the article

3. Must not seek the advantages from the articles they had reviewed.

4. They must realize that they are an expert, knowledgeable and understanding of the content of the article being evaluated.

5. If an article is found to be similar or duplicate, article copying other work. The reviewers must immediately notify the editor of the journal with clear evidence.
   The article reviewers must maintain an evaluation period. According to the assessment time frame set by the journal.

Process for submitting articles for publication in Community and Social Development
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Editors review articles
for a week

Not accepting
articles

Notify the
owner of
the article

Agree to be considered

Coordinate with experts and submit articles to 3 experts for
consideration, taking 2 weeks.

Not
pass

Notify the
owner of
the article

Pass

Coordination with the owner of the article takes 2 weeks.

Check the revision as suggested by a qualified person for 1 week.

In case of incomplete revision, coordinate the owner of the article to amend additional.
In case of complete correction Prepare and send an acknowledgment letter for publication 1 week.

Researcher to pay a qualified person's remuneration and an
operating fee of 104 USD or 3,500 baht.

Collecting articles for publication online 3 issues a year, 15 Article
Issue 1 January - April
Issue 2 May-August
Issue 3 September - December

Peer Review Process

1. Submission — Author(s) submit the manuscript through the ThaiJo system

Rejection

2. Initial Editorial Review — Initial Editorial Review (7 days)
- Check aim and scope of CSDJ
- Check format CSDJ
- Check plagiarism percentage must not exceed 25%.

3. Peer review Process — Editor will assign **double-blind review by three reviewers** from institutions different from that of the author in that field of study.

Peer review Process (14-21 days)
The designated reviewers assess the manuscript and finalize their decision with one of the following choices.
- Accept without revision
- Accept with minor revisions
- Accept with major revisions and resubmit for reviewer
- Rejection

4. Revision — Author revises their paper (14-21 days)

Rejection

5. Final Editorial Review — Accept with major revisions and resubmit for reviewer (7 days)

Accept with minor revisions

6. Editorial Decision — Editorial decision (7 days)

7. Copyediting/Artwork — Copyediting and artwork (7 days)

8. Proofreading and Final Adjustments — Proofreading and final adjustments (7 days)

9. Publication — Published online receives volume, issue and DOI. The complete procedure from initial submission to sublication takes approximately 3-5 months.

COMMUNITY AND SOCIAL DEVELOPMENT JOURNAL