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Editorial Statement

Human Behavior, Development and Society is a refereed multidisciplinary journal that explores a wide range of scholarly topics, especially in fields relating to the humanities and social sciences. It is published online three times a year and is available free of charge through the ThaiJo and Asia-Pacific International University (AIU) websites, with a limited number of hard copies available. The journal, originally entitled *Catalyst*, has been published since 2006 by Asia-Pacific International University, Muak Lek, Thailand, through its publishing arm *Institute Press*.

The journal has the following objectives:

a). To stimulate the creation and synthesis of beneficial information, as well as its broad dissemination, especially in the varied fields of the humanities and social sciences,

b). To foster a deeper understanding regarding the impact of business policies and practices on society, and

c). To promote the adoption of best practices in communities through education, and to aid in the resolution of community issues for the betterment of society; this represents the development aspect referred to in its name.

Editorial Objectives

The editorial objectives are to advance knowledge through use of classical–or the creation of innovative–methods of investigation, and to foster the examination of cross-cultural issues to increase mutual understandings among diverse social groups. Encouraging cooperative studies and scholarly exchange across borders, as well as within Thailand, remains one of its aims. The application of theoretical considerations to the field, business, or community situations is also an outcome that is sought.

Journal Positioning

The journal is broadly based and has the potential to impact thinking and practices across a range of subject areas, dealing with substantive issues that arise in both developing and developed countries. It will likely appeal to readers with a broad appreciation of the social issues facing organizations, communities, and governments operating under varied challenges and constraints. Its contents are meant to appeal to both the academic community and practitioners in numerous areas of interest.

The positioning of the journal means that a variety of topics is covered in most issues. These, in turn, differ in their philosophical content, academic appeal, and practical implications.

Appropriate Content

The journal covers a broad spectrum of topics. These include, but are not limited to, anthropology, allied health focused on community issues and health education, education from the primary to the tertiary levels, literature, language use and acquisition, business, management, finance, geography, psychology, social sciences, philosophy, and theology. Review essays and seminar/forum papers are also accepted when appropriately focused. Well-executed studies that address interesting and significant topics in the areas mentioned above are particularly welcomed. All articles accepted should make significant contributions to understanding and add to the corpus of knowledge in their respective fields.

The following constitutes a partial list of topics that are considered potentially suitable for publication:

1. Applied linguistic or linguistic studies that examine issues related to communication, language pedagogy and use, as well as theories and meaning of language.
2. Religious or biblical studies that explore historical, philosophical, sociological, as well as hermeneutical issues.
3. Anthropological or ethnographic studies which seek to reflect cultural nuances of communities for a better understanding of the society.
4. Cultural/intercultural issues and diversity, including how tensions involving these parameters might be handled to achieve social justice and acceptance.
5. Review articles or studies in the fields of marketing, business, stock market trading, and auditing practices, and their significance to the business and broader community.
6. Organizational behavior, resilience, and the creation of a positive psychological work environment and job satisfaction.
7. Teaching strategies, interventions, assessment, and other issues to the betterment of society.
8. Policies and political movements, and their impact on educational development.
9. Violence, discrimination, and marginalization: how these issues are viewed in contemporary society, and the factors contributing to their emergence.
10. Social trends in addictive behavior; how to address such issues creatively.
11. Impact of specific policies and interventions on health care, including how to promote positive health outcomes in communities.
12. Innovative and cost-effective approaches to health care and education in poor, rural communities.

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Current and Past Issues

From the Editor

Human Behavior, Development and Society (HBDS) is an international, interdisciplinary, open-access, peer-reviewed journal published by Asia-Pacific International University (AIU) three times per year. *HBDS* publishes findings and discussions regarding most aspects of human behavior, development, and society. The journal's scope is to advance knowledge through the use of classical methods of investigation and to foster examination of cross-cultural issues that increase mutual understanding among diverse social groups within the international community, with a particular emphasis on Southeast Asia. All articles in the journal are indexed with the Thai-Journal Citation Index Centre (TCI) and with the EBSCO database. The editorial team is committed to maintaining meticulous peer-review standards and the highest level of ethical integrity, ensuring consistency and scientific rigor in each research article.

This issue of HBDS is the second issue of 2022. It contains 10 articles, four of which were written by researchers external to the university, and six that were authored by AIU researchers. We are delighted to see reports and findings from various disciplines including business, development, education, health, and language. Most articles in this issue reflect studies conducted in Asian contexts including Indonesia, Malaysia, the Philippines, and Thailand; however, there are also two articles from the African countries of Congo and Kenya. We hope that this issue of HBDS will contribute to the development of society and serve as a source of information for various academic fields and research projects.

We would like to invite readers to publish your valuable papers with us. More information may be found on our website, *https://www.tci-thaijo.org/index.php/hbds*. We would also appreciate comments or suggestions from you to help us improve the journal. Finally, we appreciate the hard work of authors, reviewers, editorial board members, executive board members, and journal staff members who have contributed to making this issue a reality.

Assistant Professor Dr. Damrong Sattayawaksakul, Editor

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Acceptance of Rooftop Solar Technology in Kenya: A Solar Adoption Model for the Main Electricity Grid

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Abstract

Amongst renewable technologies, solar power has the highest potential as a substitute energy generation option to fossil fuels. However, adoption of rooftop solar technology is still comparatively low. Thus, this paper examined acceptance of rooftop solar technology in Kenya using the Technology Acceptance Model 3 framework. A survey was conducted (N = 402) in two regions of the Kenyan coast, which receive more than 2,000 peak sunlight hours annually. Using Structural Equation Modelling, the analysis revealed self-efficacy, anxiety, occupational relevance, perception of external control, and perceived enjoyment positively influenced perceived ease of use and perceived usefulness. These factors also influenced behavioural intentions and indirectly influenced the actual adoption of rooftop solar technology. The study showed a significant impact of perceived ease of use and perceived usefulness on behavioural intentions towards adoption, which guarantees a reliable energy source and income generation. A majority of respondents (67%) planned to adopt the technology due to its perceived benefits. Solar companies could use these factors to target new niche markets.

Keywords: *Renewable energy, rooftop solar, usefulness, behavioural intention*

Background

Energy plays a major role in development and improvement of both social and economic activity. However, much of the energy produced and consumed is done in ways that cannot be sustained, let alone be increased (Bilgen et al., 2008). The harmful nature and unsustainability of energy generation using fossil fuels is well known (Ahmad et al., 2017). The Intergovernmental Panel on Climate Change (IPCC) recommended the use of renewable fuels for electricity generation to alleviate these problems currently experienced by reliance on fossil fuel (IPCC, 2011). This will ensure the world uses clean energy for electricity production and fulfils the growing demand for energy consumption (Von Borgstede et al., 2013). The use of photovoltaics (PV) is an attractive option due to its environmentally friendly technology. It represents a system that allows homeowners to produce, consume, and distribute electricity in a cost-efficient way involving less pollution, thereby reducing climate change effects. The only requirement is sunlight (Macias & Ponce, 2006). Kenya has a rich market for commercial PV solar, having an installed capacity of around 16 megawatts (Ondraczek, 2014). This represents around 320,000 rural households, or 4.4% of the rural population who were connected to solar systems in 2010 (Lay et al., 2013). Renewable solar PV energy has existed in Kenya since the 1970s. This paper focuses on finding the causes of low-level of adoption of Feed-in Tariff (FiT) rooftop solar PV technology, a source of clean electricity and an economic empowerment tool for the people.

Research Objectives

This study's objectives were first, to explore the impact of social influence (subjective norms and image) and cognitive instrumental factors (occupational relevance, result demonstrability, and output quality) on perceived usefulness. Second, to examine the impact of cognitive (self-efficacy, anxiety, perception of external control) and adjustment factors (perceived enjoyment, objective usefulness) on perceived ease of use. And third, to investigate how perceived usefulness (PU) and perceived ease of use (PEOU) influence behavioural intentions towards adopting rooftop solar technology.

Literature Review

Renewable energy technology is a broad subject that fits different contexts, including wind energy, geothermal energy, hydropower, solar energy, and biogas. This study investigated rooftop

solar PV electricity that permits the use of a renewable energy resource at a low level, but is not limited to this use. The technology enables consumers to produce, store, and distribute excess energy for economic benefit. With proper policy structures and goodwill from the government, such technologies can aid professional consumers to become more cost effective and major industry players. Solar PV is a technology with high environmental friendliness and sustainability. In recent years, research has shown a significant increase from kilowatts to megawatts of electricity produced by PV systems. This indicates the viability of the technology as a reliable power generation source (Ahmad et al., 2017). A developed country like Germany offers a good example of the reliability of solar PV technology, as 4% of total electricity demand (32 gigawatts) came from the solar PV technology in 2013 (International Energy Agency, 2013). Kenya, like many other developing countries in Africa, faces an ever-increasing challenge of upgrading and expanding the electricity generation capacity and grids to support the growing connectivity demands and development of the economy. Solar energy, according to the IPPC, has enormous potential and can even match major energy sources like wind generation by the year 2050 (Edenhofer et al., 2011).

Relationship of Relevant Variables and Hypotheses

Davis et al. (1989) developed the Technology Acceptance Model (TAM) theory with the intention of determining the factors that influenced users to adopt a technology. The TAM model has two main variable factors—perceived usefulness and perceived ease of use. Due to limitations of the initial TAM model, Davis and Venkatesh (2000) developed the TAM2 model, which included perceived usefulness and usage intentions as the main factors in social influence and cognitive instrumental processes. Eventually this model presented further limitations, which led to the introduction of TAM3 by Venkatesh and Bala (2008). The TAM3 provides a robust structure used to explore a model's constructs when determining users' intended adoption of different technologies.

The conceptual framework for this study is shown on the following page in Figure 1.

Social Influence and Perceived Usefulness

The social influence processes in TAM3 are represented by the perceived usefulness construct, subjective norms, and image determinants. Shin (2010) found subjective norms to have a strong significance on perceived usefulness. Subjective norms and image constructs posit a positive influence on perceived usefulness through the processes of internalization and identification respectively (Venkatesh & Bala, 2008). Subjective norms, in the context of this study, is the extent to which individuals perceive that people in their circle of influence consider or reject the use of FiT rooftop solar technology. This study also defines image as the way people perceive that the usage of FiT solar technology will enhance their status in their social circles. The following hypotheses were tested.

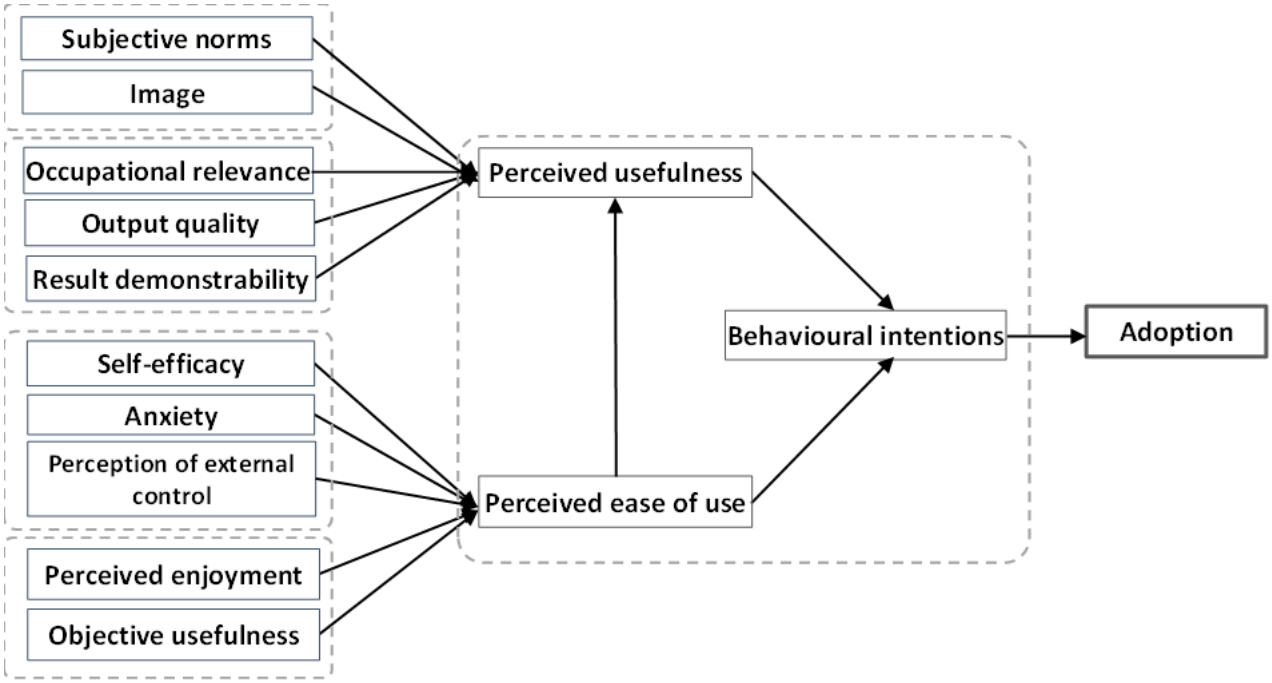
H_1: Subjective norms will have a positive influence on perceived usefulness.
H_2: Image will have a direct positive influence on perceived usefulness.

Cognitive Process and Perceived Usefulness

Users "form judgment in part by cognitively comparing what a system is capable of doing with what they need" (Venkatesh & Davis, 2000). Perceived ease of use and result demonstrability would have a positive direct influence on perceived usefulness. Job relevance and output quality will have a moderating effect on perceived usefulness, such that the higher the output quality, the stronger the effect that job relevance will have on perceived usefulness (Venkatesh & Davis, 2000). Occupational relevance in this study is the extent to which FiT rooftop solar technology can be looked at as a work opportunity or a business activity. Output quality in the context of this research is the extent to which people believe that the FiT rooftop solar technology will be able to perform its required tasks well at their homes. Based on the FiT rooftop solar technology, result demonstrability is the point where a person believes the effects of using the technology are tangible, observable, and communicable. The following hypotheses were tested.

H_3: Occupational relevance will have a direct positive influence on perceived usefulness.
H_4: Output quality will have a direct positive influence on perceived usefulness.
H_5: Result demonstrability will have a direct positive influence on perceived usefulness.

Figure 1 *Conceptual Framework*



Source. Adapted from Technology Acceptance Model 3 (TAM3) (Venkatesh & Bala, 2008)

Cognitive Process and Perceived Ease of Use

Venkatesh (2000) debated that individuals will form early perceptions of perceived ease of use of a system based on self-efficacy, computer anxiety, and perceptions of external control regarding computers and computer use. Increasing levels of control by an individual are through accessibility to relevant resources and knowledge (Barranis, 2011). A computer usage study by Compeau and Higgins (1995) theorised that computer anxiety strongly influenced perceived ease of use of that technology. To contextualise self-efficacy to this study, it is the extent to which a person controls beliefs about personal ability to use FiT rooftop solar technology. Anxiety in this research is an individual's extent of nervousness when faced with use of FiT rooftop solar technology for the first time. Perception of external control is the extent to which a person believes that organizational and technical resources exist to support the use of FiT rooftop solar technology. Hence, it was hypothesised that:

H_6: Self-efficacy has a positive influence on the perceived ease of use.
H_7: Anxiety has a positive influence on the perceived ease of use.
H_8: Perception of external control has a positive influence on the perceived ease of use.

Related Adjustments on Perceived Ease of Use

The factors of related adjustments—perceived enjoyment and objective usability—were considered by Venkatesh (2000) to play a role in determining perceived ease of use after a user gains experience with the new system. The significance of perceived ease of use involving other technologies is relevant, and several examples will be given. Teo et al. (1999) perceived that enjoyment was an important factor affecting Internet usage; this was due to the perceived ease of use construct, which was the most important motivator. Moon and Kim (2001) included playfulness into the TAM regarding Internet use, which theorized the positive influence of perceived ease of use on playfulness. Perceived enjoyment in the context of this study is the extent to which a user expresses gratification associated with using FiT rooftop solar technology. Objective usefulness in this research

is defined as a comparison of FiT rooftop solar technology with other energy technology sources based on the actual level of effort required to accomplish tasks. It was hypothesised that:

H_9: Perceived enjoyment has a positive influence on the perceived ease of use.
H_{10}: Objective usefulness has a positive influence on the perceived ease of use.

Perceived Ease of Use and Perceived Usefulness

Perceived ease of use influenced perceived usefulness in a mobile-based application adoption study in Germany (Gurtner et al., 2014). A study on healthcare information systems in Taiwan by Pai and Huang (2011) established the influence of perceived ease of use on perceived usefulness. Lederer et al. (2000) studied the effects of PU and PEU on behavioural intentions and found a positive effect on PU. Perceived ease of use in this study is the straightforwardness with which FiT rooftop solar technology is usable or integrated into daily tasks. It was hypothesised that:

H_{11}: Perceived ease of use will have a positive effect on perceived usefulness.

Perceived Ease of Use and Behavioural Intentions

Empirical studies by Agarwal and Karahanna (2000) and Shen and Chiou (2010) showed that PEOU was a predominant determinant of intention to adopt. PEOU also influenced behavioural intentions for those with previous experience in e-commerce settings (Sun et al., 2010). However, in some studies, perceived ease of use did not influence intent (Halilovic & Cicic, 2015). In the original extended TAM model by Davis et al. (1989), PEOU did not directly influence adoption intention. In this research it was hypothesised that:

H_{12}: Perceived ease of use will have a positive effect on behavioural intentions.

Perceived Usefulness on Behavioural Intentions

Davis et al. (1989) theorised that perceived usefulness of information technology played a significant role in understanding the motivation in accepting or rejecting a technology. Perceived usefulness influenced the intention to use mobile Internet on smartphones by doctors (Park & Chen 2007). Perceived usefulness also influenced a positive attitude towards mobile banking in Sudan (Mansour et al., 2016). In the context of this study, it refers to the extent of apparent applicability or practical worthiness of the FiT rooftop solar technology to the user. It was hypothesised that:

H_{13}: Perceived usefulness will have a positive effect on behavioural intentions.

Behavioural Intentions and Adoption

Davis et al. (1989) found that behavioural intention to adopt a system had a positive and significant effect on actual usage. Turner et al. (2010) analysed 79 empirical studies and found that intention is a significant determinant of actual adoption compared to the other TAM constructs. Actual use was represented by intention to use when a technology was still in the developmental stage and when the research objective was to predict future use (Williams et al., 2014). The behavioural intention construct in this research was defined as the likelihood of a person to install/use or not install/use solar FiT technology. It was thus hypothesised that:

H_{14}: Intention will have a direct positive influence on adoption.

Methodology

In this research, a structured questionnaire was adapted and further developed to collect data using face-to-face interviews. The questionnaire consisted of three sections. The first section was an introduction to the research, followed by demographic questions, and the final part contained 40 items aimed to measure each construct of the study's thirteen variables. The questions were answered using a seven-point Likert scale ranging from 1-*Strongly Disagree* to, 7-*Strongly Agree*. The questionnaire was revised using Item-Objective Congruence assessment for content validity according to expert opinion. A pilot survey was then conducted on 30 respondents and the questionnaire was refined using Cronbach's Alpha reliability analysis for internal consistency and Exploratory Factor

Analysis for validity. A random sampling method was used for data collection (*N* = 450). Questionnaires were given to homeowners in the Kilifi and Mombasa regions of Kenya for the main study. There was an 89% response rate. A descriptive analysis was performed to give respondents' demographic information and a reliability test of the scale items was completed to measure all variables. Then a descriptive analysis of the questionnaire was undertaken using Confirmatory Factor Analysis (CFA) for discriminant validity and convergent validity in the model measurements (Hair et al., 2010). Finally, structural equation modelling (SEM) analysis was used to test the relationships among the variables.

Results and Analysis

Males accounted for 57% of respondents, and the remainder were females. In terms of location, 52% were from Kilifi and 48% from Mombasa. Respondents aged between 35 and 44 years were the largest group (*n* = 122), while the smallest group (24) were those 65 years and older. For expenses on energy consumption, the monthly expenditure group of Kenyan Shilling 1,000 and below was the largest with 57% of total participants. In terms of solar usage, 22% of households had installed solar in their homes, while the remainder had not. A total of 156 respondents indicated a desire to have the technology and to sell the energy generated. In terms of priorities to consider when adopting solar technology, 54% of respondents factored cost of the technology as their first option, followed by the stakeholders involved, and neighbours were least in their list of priorities. Trust was the top priority of 20% of the population studied, followed by the cost of the technology and then their neighbours.

Before applying SEM, the reliability and validity of all variables was checked using Cronbach Alpha, composite reliability (CR), and AVE (Table 1). All items included in the current measurement model showed acceptable factor loadings. Furthermore, the Cronbach Alpha and CR values against all these variables were > .70. Hair et al. (2019) theorised that a value greater than .60 could be regarded as a satisfactory level for internal consistency, even though a value of .70 was preferred. This means that both of these indicators met these thresholds. Hence, all variables included in the study showed excellent reliability. Besides reliability, the validity of each variable was checked to determine its internal consistency. The AVE values against all variables of the study were > .50; this showed the convergent validity of each variable. The above values indicate high convergent validity for all constructs (Zaltman & Burger, 1975).

Confirmatory Factor Analysis

Confirmatory factor analysis was completed on the data. Information was categorized according to perceived usefulness, perceived ease of use, and behavioural intention (refer to Figure 1). Table 1 below shows the analysis results. All indicators of model fitness met their respective threshold in the TAM3 model. The χ^2/df for the current model was < 5, *p* is < .05, CFI was > .90, GFI was also > .90, and RMSEA was < .08. All these indicators were showing excellent values meaning that the current measurement model displayed excellent fitness. Previous studies (Baumgartner & Homburg 1996; Doll et al. 1994; Hu & Bentler 1999; MacCallum et al. 1996; and Savci & Griffiths 2019) suggested that the accepted values for these indices are: χ^2/df is < 5; the value of GFI is > .90, and RMSEA < .05, and acceptable up to .08 as a good fit, which corresponds with previous research (Hair et al., 1998). GFI Values of just above .80 are acceptable for goodness of fit, as supported by (Doll et al., 1994).

Table 1 *Model of Fit Indices*

Measurement Models	χ^2/df	***p***	**Chi-Square (χ^2)**	**CFI**	**GFI**	**RMSEA**	***df***
Criteria	≤ 5	< .05	≤ 1	≥ .90	≥ .90	≤ .08	
PU Model	1.569	.003	98.847	.987	.968	.038	63
PEOU Model	2.311	.000	201.087	.973	.939	.057	87
BU Model	2.608	.000	146.067	.973	.950	.063	56
SEM Model	2.352	.000	1458.041	. 915	. 852	.058	620

Note. GFI = Goodness-of-Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; χ2/*df* = Chi-Square; *df* = degree of freedom

Hypotheses Testing

The critical ratios of individual hypotheses should exceed the cut off level of 1.96, with a *p*-value at levels < .05 as well. This is standard practice for statistical significance testing (Chin, 1998). Results obtained in the analysis supported eleven hypotheses (H_3, H_6, H_7, H_8, H_9, H_{11}, H_{12}, and H_{13}, H_{14}) and are shown in Table 2.

Table 2 *Summary of Testing of Hypotheses*

Hypothesis	Path			Estimate	*SE*	CR	*p*	Decision
H_1	Subjective norms	→	Perceived usefulness	.132	.089	1.485	.137	Rejected
H_2	Image	→	Perceived usefulness	.041	.047	0.871	.384	Rejected
H_3	Occupational relevance	→	Perceived usefulness	.132	.049	2.673	.008	Accepted
H_4	Output quality	→	Perceived usefulness	.102	.069	1.473	.141	Rejected
H_5	Result demonstrability	→	Perceived usefulness	.193	.105	1.841	.066	Rejected
H_6	Self-efficacy	→	Perceived ease of use	.085	.041	2.062	.039*	Accepted
H_7	Anxiety	→	Perceived ease of use	.08	.036	2.219	.027*	Accepted
H_8	Perception of external control	→	Perceived ease of use	.478	.069	6.698	***	Accepted
H_9	Perceived enjoyment	→	Perceived ease of use	.133	.053	2.487	.013*	Accepted
H_{10}	Objective usefulness	→	Perceived ease of use	.151	.084	1.793	.073	Rejected
H_{11}	Perceived ease of use	→	Perceived usefulness	.293	.041	7.206	***	Accepted
H_{12}	Perceived ease of use	→	Behavioural intentions	.413	.068	6.114	***	Accepted
H_{13}	Perceived usefulness	→	Behavioural intentions	.528	.107	4.924	***	Accepted
H_{14}	Behavioural intention	→	Adoption	.272	.039	6.913	***	Accepted

Note. * = *p*-value < .05, ** *p*-value < .01, *** *p*-value < .001; *SE* = Standard coefficient; CR = Critical ratio

Discussion

The correlational study aimed to determine the influence of factors involved in the adoption of rooftop solar PV technology in Kenya (Jaradat & Al-Mashaqba, 2014). The results are analysed below; the hypotheses that were supported are discussed first.

H_3: Occupational relevance will have a direct positive influence on perceived usefulness.

As previously suggested (Venkatesh & Davis, 2000), the formation of mental calculations of the match between important work goals and the consequences of performing job tasks when using a system helps in creating the perception of usefulness in the adoption of a technology. It is important to note that more than a third of the respondents prioritised the sale of energy first when deciding to adopt it. An affordable price and understanding of stakeholders' motivation will create occupational relevance for a technology (Huang, & Kao, 2012).

H_6: Self-efficacy has a positive influence on the perceived ease of use.

A study by Venkatesh (2000) showed that self-efficacy had a positive and significant effect on perceived ease of use, but users relaxed these judgments after increasing their experience with the new system. Self-efficacy had a significant direct effect on the perceived ease of use to adopt rooftop solar PV technology according to the study results. Participants believed they had control regarding their personal ability to operate the rooftop solar PV technology. They also perceived it as a technology that was easy to use (Huang, & Kao, 2012; Yang, 2010). With a youthful population of 25 to 44 years

(54% of all respondents), the data indicated that an energetic youthful population was enthusiastic about trying new ideas and technologies.

$H_{7:}$ Anxiety has a positive influence on the perceived ease of use.

Elasmar and Carter (1996) theorised that computer anxiety would have a strong influence on the perceived ease of use of this new technology, which agrees with the results of the present study which showed a positive impact of anxiety on PEOU. This increased their probability of adopting the technology as theorised in previous research (Jaradat & Al-Mashaqba, 2014). The positive influence of anxiety on the perceived ease of use of the technology was possibly because a large number of respondents were between the ages of 25 and 44, and had a positive perception of external control on the perceived ease of use of the rooftop solar technology.

$H_{8:}$ Perception of external control has a positive influence on the perceived ease of use.

External control is an individual's awareness of the availability of resources and knowledge that is necessary for the performance of a specific task (Ajzen & Fishbein, 1980). Hence, increasing levels of control by an individual are through accessibility to certain relevant resources and knowledge, as hypothesised by Barranis (2011). The perception of external control showed a significant and direct effect on the perceived ease of use to adopt the rooftop solar technology. On account of the dense population and urbanisation, companies have opened branches closer to the people. This has boosted their confidence in terms of availability of resources to implement the technology in their homes.

$H_{9:}$ Perceived enjoyment has a positive influence on the perceived ease of use.

Perceived enjoyment had a positive influence on perceived ease of use. The research did not find evidence for the direct impact of the analysed constructs regarding perceived enjoyment with perceived ease of use. This result implied that individuals not only think that enjoyment did not represent the core motivation associated with using rooftop solar, but also they perceived it as easy to operate. Research by Mills et al. (2011) suggested that "in several developing countries with limited resources, enjoyment is unlikely to be a priority." This was true, since 78% of respondents had no solar in their homes, and 39% wanted to adopt solar for the purpose of selling energy. This gives supports to Mills' research, which theorised the unlikelihood of enjoyment being a priority.

H_{11}, H_{12} and H_{13}: The impact of PEOU on PU, PEOU on behavioural intentions, and PU on BI.

PEOU was shown to influence PU in a mobile-based application adoption study in Germany (Gurtner et al., 2014). Another study in Iran on acceptance of a localized operating system found that a positive relationship existed between PEOU and PU (Saghafi et al., 2017). The results of the present study supported these findings by showing a strong influence of PEOU on PU. A high number of respondents were of a youthful age, between 25 and 44, and a bigger percentage of these youths preferred to adopt solar for selling the energy. This resulted in a positive influence of the occupational relevance variable on PU. When this is coupled with the positive self-efficacy and anxiety they have on the perceived ease of use of the technology, this contributed immensely to the positive significance PEOU had on PU of the technology. Research by Agarwal and Karahanna (2000) and Shen and Chiou (2010) indicated that PEOU is a major determinant of intention to adopt a technology. The results of the present study were aligned with this finding, as PEOU had a positive impact on behavioural intention. With the promise of business establishment from the adoption of this technology, and respondent self-efficacy positively influencing their PEOU of the technology, the PEOU variable greatly influenced participants' behavioural intentions to adopt. Previous research showed PU influenced intention to use in a study investigating the mobile Internet use of smartphones by doctors (Park & Chen, 2007). Our study results aligned with this previous research. The occupational relevance on the technology's PU indirectly influenced PU on behavioural intentions in a major way. The PEOU variable significantly and directly influenced the behavioural intentions to use, and indirectly influenced actual adoption. Moreover, it had a significant and indirect effect on both behavioural intentions to use and actual adoption through perceived usefulness. It also had a significant positive and direct effect on

perceived usefulness of the rooftop solar technology. This implies that those who consider rooftop solar to be useful, improve performance, increase productivity, and enhance effectiveness also perceive it to be easy to use. “Easy to use means, it is clear and understandable and does not require a lot of mental effort to operate and use, without much effort and easy to use procedure;” this is consistent with previous research by Schierz et al. (2010) and Yang (2010).

$H_{14:}$ Behavioural intention will have a direct positive influence on adoption.

Behavioural intentions had a significant effect on actual adoption. This means that an individual’s behavioural intentions constitute an important determinant of technology adoption, which agrees with previous research (Shin, 2010). Studies have suggested that behavioural intention is a reasonable indicator of future system usage (Jackson et al., 1997). Davis et al. (1989) also found that behavioural intention has a positive significant effect on actual usage. Perceived ease of use significantly and directly influenced the behavioural intentions to use, and indirectly influenced actual adoption. Moreover, it had a significant and indirect effect on both behavioural intentions to use and actual adoption, through perceived usefulness of the rooftop solar technology.

Hypotheses that Were Not Supported

H_1: Subjective norm will have a positive influence on perceived usefulness.

The above hypothesis was rejected. This differs from a study conducted by Venkatesh and Bala (2008), which found that subjective norms had a positive influence on perceived usefulness. In our study, 156 respondents desired to adopt the technology in order to sell energy, which showed that a majority were purpose driven in their decision-making. It was noted that 54% of respondents prioritised cost of setup and stakeholders’ trust, while they valued their neighbours the least in arriving at their decision for adoption. Companies need to understand the psychological perspective of their marketing in order to influence adoption of rooftop solar PV technology.

H_2: Image will have a direct positive influence on perceived usefulness.

In a study by Nadri et al. (2018), the social influence construct, of which image is a part, was not a significant factor in influencing the acceptance of mobile health among students. This was similar to the results of this study, which showed that image had no significant effect on the perceived usefulness to adopt and use rooftop solar PV technology. Since 78% of respondents did not have solar, the mind-set of individuals made them believe that rooftop solar technology had no prestige. Image played no significant role in the present study, possibly due to the high percentage of participants who were in the youthful age group of between 25 and 44.

H_4 and H_5: Output quality and result demonstrability will have a direct positive influence on perceived usefulness.

In this study, both output quality and result demonstrability had no significant effect on the perceived usefulness to adopt rooftop solar technology, which was not in alignment with previous studies by Venkatesh and Davis (2000). Few respondents understood the output quality and result demonstrability of the solar technology, which made it hard to understand its usefulness, since the technology was not yet in operation in the study area.

H_{10}: Objective usefulness has a positive influence on the perceived ease of use.

The above hypothesis was rejected. This was at variance with Venkatesh’s (2000) conclusion. This author defined objective usefulness as a comparison of systems based on the actual level of effort required to complete a task. This means that individuals need to have two systems in operation to enable an actual comparison. With 78% of respondents not having solar, this greatly contributed to the negative outcome of objective usefulness towards perceived ease of use.

Conclusions

This study focused on using the TAM3 model to explore the factors that influenced acceptance of rooftop solar technology in Kenya. This study created an interest in study participants, especially regarding the possibility of the technology being an income generator. It was shown that 39% of participants were willing to adopt the technology as a business activity. This information will be valuable to energy companies in the country, such as Equator Energy, to better structure their marketing approach to customers with the view of creating business opportunities. The results will also help inform government and private sector partners of the need for creating or improving regulations and policies to push for an increase in the adoption of affordable solar energy in Kenya.

Theoretical Contributions

This research extends the application of the TAM3 model. The study indicates that both PEOU and PU have significance in technology adoption in Kenya, which supports the study of Venkatesh et al. (2003). These researchers found PU to be a very important factor in technology adoption. The present findings suggest that further research be done to establish more evidence on the significance of the variables on other technologies in Kenya. Previous research studies in Kenya have focussed on generation of renewable electricity using other sources like wind and geothermal power (Kiplagat et al., 2011; Lay et al., 2013). In the present study, 39% of participants intended to adopt the technology for selling energy as a business. Certain aspects were crucial in adoption, particularly the trust of stakeholders such as policymakers, relevant government ministries, and market players. Their needs must be considered in order to increase users' confidence in adopting this technology.

Managerial Implications

As technology marketers, managers might emphasise the usefulness and ease of use of technology to their customers more extensively through organising training sessions for their customers to increase awareness. Developing a positive occupational relevance regarding usefulness of a technology as a source of income generation would be helpful in informing the decision-making process of potential customers. Companies can capitalise on this by selling technology for applications other than home use. This can be actualised by investing in training their employees about customer service and in helping to re-educate their customers. The statistics of households without solar (78%) should be good news to solar companies. There is a large potential market for their businesses if they can change their market penetration tactics. This might be done by investing more in media advertising, which guarantees a wider and personal reach. To increase customers' confidence, adoption intentions, and reduce their perception of external control, companies can set up regional and local area offices to bring company support closer to their customers. They can also create mechanisms for customer feedback and involvement through suggestion boxes or writing reviews. With the growing level of interest in prosperity generation enterprises, and with 39% of respondents willing to adopt the solar technology for business purposes, the study results suggest that solar companies can be important players in the country's economic growth. They can market this idea to the government, as manufacturing and housing needs are important factors on their agenda. Companies can position themselves to be big players in the push for both economic growth and increases in the electrification rate through a rooftop solar connection that enhances and creates more private and government sector partnerships. Conducting public seminars and participating in corporate social responsibilities are good ways of encouraging these partnerships.

Limitations and Recommendations

First, the economic aspects of the technology were not included. Future studies focussing on the consumption rate in comparison to the amount of electricity generated may reflect the economic viability of the technology. Second, the research had a limited scope, for it focused on individual households, and not companies and organisations. The latter are big consumers in the market and can provide a different angle regarding outcomes following adoption. Third, future studies may compare

the impact at various regional locations receiving different sunlight hours to give a wider perspective. Finally, in future research, investigations should use a longitudinal study to obtain results that are more comprehensive with other factors, including such factors as security, cost, and trust.

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Knowledge, Attitudes, and Preventive Practices Regarding Dengue Fever and Chikungunya among Villagers in Muak Lek District, Saraburi Province

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Abstract

In this study, differences regarding knowledge, attitudes, and preventive practices in relation to dengue fever and Chikungunya were investigated among villagers in the Muak Lek District, Saraburi Province. Respondents (*N* = 220) were purposively selected from a population of 436. Survey questionnaires were used for data collection, and the information was analyzed using descriptive statistics. The majority of respondents' (71.82%) level of knowledge about dengue fever was at the highest level, whereas knowledge about Chikungunya was at a moderate level; this difference was statistically significant ($p < .001$). Attitudes regarding dengue fever and Chikungunya were at a moderate level, while dengue fever and Chikungunya prevention practices were at a high level. The findings showed that public health personnel, including health volunteer workers, should continue their public relations efforts with the villagers concerning knowledge and practices about dengue fever and Chikungunya prevention, including demonstrations of mosquito larva eradication campaigns.

Keywords: *Knowledge, attitude, dengue fever, Chikungunya prevention practices*

Introduction

At present, dengue fever and Chikungunya are contagious viral diseases meriting concern as public health problems. They can spread rapidly in any season, especially during the rainy season. Dengue fever and Chikungunya are transmitted by *Aedes* mosquitoes, and it is believed that the symptoms become more and more severe each year. They affect both men and women of all ages at any location. If proper and immediate treatment is not given, they may even endanger the patients' lives. From 2014 to 2017 in Thailand, there were only 21,232 cases of dengue fever reported with 11 deaths. The morbidity rate per 100,000 population was 32.6%, and the mortality rate was 0.05%.

However, in recent years, incidence rates have been increasing. In 2018, it was reported that dengue fever was responsible for 14,193 cases and 19 deaths in Saraburi Province alone. Per 100,000 population, 22.74% were infected, with a mortality rate of 0.13% observed. In 2019, there were 26,430 cases and 40 deaths; per 100,000 population, 40.01% were infected with a mortality rate of 0.15% observed (Department of Disease Control, 2020). The cases from the whole country from January 1 to February 8, 2020 totaled 2,422 cases (3.65% morbidity rate). However Saraburi Province alone had a total of 31 cases (3.88% morbidity rate) during this time period. Thus, Saraburi Province ranked eighth in the country for its dengue morbidity rate. Statistics from the five previous years suggested that in the province, the groups most likely to contract the disease were, in order of highest to lowest morbidity rates, those aged 10–14 years old, 5–9 years old, 15–24 years old, 0–4 years old, 45–54 years old, 35–44 years old, 25–34 years old, and above 65 years old. Additionally, no particular clustering was observed, but the disease was spread sporadically among the 13 districts of Saraburi Province (Disease Prevention and Control Office, 2020).

Chikungunya was reported to be responsible for a total of 3,570 morbidity cases, with a morbidity rate of 5.41 per 100,000 population from January 1 to December 31, 2018. The morbidity cases consisted of 2,188 females and 1,382 males and came mostly from the southern parts of Thailand, with sporadic cases in the central provinces. Most outbreaks occured during the rainy season and were associated by dense populations of *Aedes* mosquitoes. Cases were continuously reported from May, peaking in December (1,748 morbidity cases), and followed by high figures in November (1,172 cases) that tailed off in October with 225 cases (Disease Prevention and Control Office, 2018).

The researchers were interested in applying Bloom's Learning Theory (Bloom, 1956) as a conceptual framework for a study of knowledge, attitudes, and practices in the prevention of dengue fever and Chikungunya among the villagers of Moo 7, Baan Langkhao, Muak Lek Subdistrict, Muak Lek District, Saraburi Province. The guidelines produced may be beneficial for public health officials in improving prevention plans, promoting people's proper knowledge, attitudes, and practices regarding prevention of dengue fever and Chikungunya resulting in a better quality of life.

Research Objectives

1. To study the level of knowledge, attitudes, and the practices of dengue fever and Chikungunya prevention held by the respondents.
2. To study the relationship among knowledge, attitudes, and practices of dengue fever and Chikungunya prevention among the respondents.
3. To compare the variations of knowledge, attitudes, and practices of dengue fever and Chikungunya prevention among respondents in respect to age, gender, educational level, income, marital status, and occupation.
4. To compare the knowledge about dengue fever with the knowledge about Chikungunya held by the respondents.

Research Hypotheses

1. Age, monthly income, knowledge, and attitudes are related to the practices adopted to prevent dengue fever and Chikungunya of the respondents.
2. The respondents, who were different in age, gender, educational level, income, marital status, and occupation, had significant differences in attitudes and practices towards dengue fever and Chikungunya prevention.
3. The respondents' knowledge of dengue fever differs from that regarding Chikungunya.

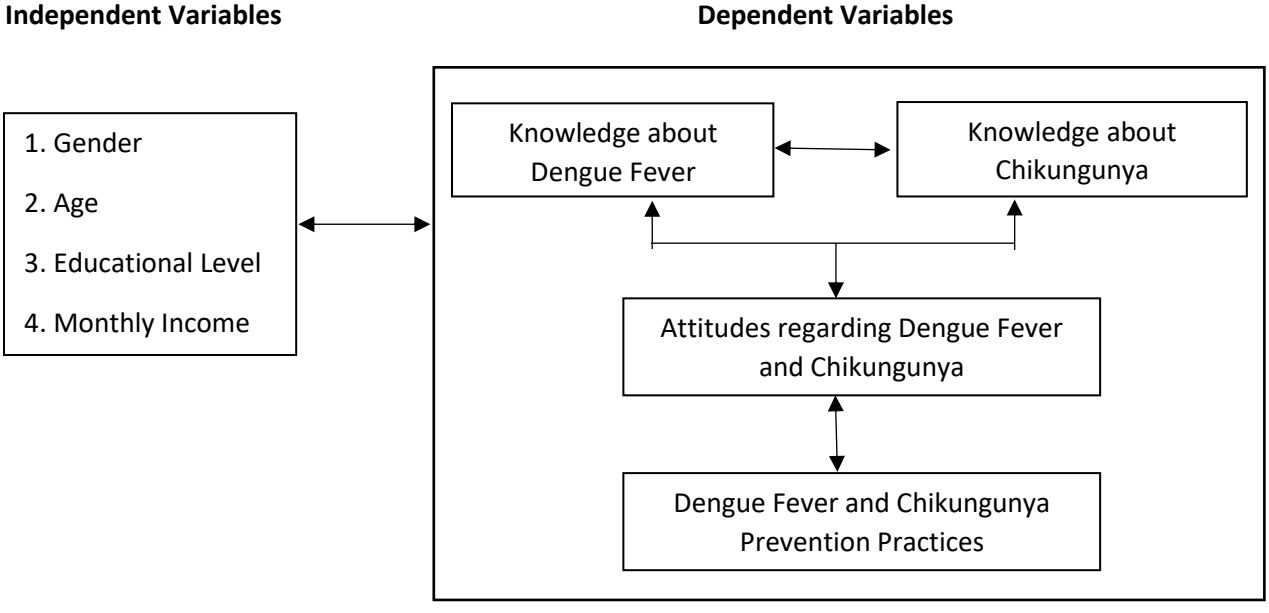
Operational Definitions Adopted

1. Knowledge is the recall or recognition of the life cycle of *Aedes egypti*, the causes, signs and symptoms, and preventive measures recommended for the control of dengue fever and Chikungunya.
2. Attitudes are the beliefs regarding dengue fever and Chikungunya, the significance of taking care of the environment around the house, and participation in preventive measures.

Research Conceptual Framework

In this research, the researchers applied Bloom's Learning Theory (Bloom, 1956) as a conceptual framework to study knowledge, attitudes, and practices in preventing dengue fever and Chikungunya among the respondents as shown in Figure 1.

Figure 1 *Conceptual Framework in Research*



Research Methodology

A descriptive approach was taken in the research reported here.

Population and Sample

The population used in this study were the villagers of Moo 7 Baan Langkhao, Muak Lek Sub-district, Muak Lek District, Saraburi Province numbering 436 people. The sample group used (220 respondents) were selected by purposive sampling.

Data Collection Tools

The tool used to collect the information for this study was a questionnaire to measure knowledge, attitudes, and practices of dengue fever and Chikungunya prevention. The instrument was modified from Saminpanya et al. (2017) and consisted of four sections:

Section 1: General information of the sampled respondents, which included gender, age, education level, occupation, monthly income, and marital status.
Section 2: Knowledge about dengue fever and Chikungunya.
Section 3: Attitudes towards dengue fever and Chikungunya.
Section 4: Preventive practices adopted for dengue fever and Chikungunya.

Criteria Used and Interpretation

The criteria for evaluating knowledge were divided into five levels—*highest level* (score range 81–100%), *high level (*score range 61–80%), *moderate level* (score range 41–60%), *low level* (score range 21–40%), and *lowest level* (score range 0–20%).

The criteria for evaluating attitudes and preventive practices were divided into five levels—*lowest level* (average score of 1.00–1.49), *low level* (average score of 1.50–2.49), *moderate level* (average score of 2.50–3.49), *high level* (average score of 3.50–4.49), and *highest level* (average score of 4.50–5.00).

Psychometric Evaluation of the Questionnaire

Reliability testing of the questionnaire, which was composed of items regarding knowledge, attitudes, and preventive practice, was tested on a group of 42 respondents using similar research criteria adopted in the study. Results were calculated as a reliability coefficient using K-R 20 and Cronbach's Alpha Coefficient methods. The reliability of each section, which involved knowledge about dengue fever and Chikungunya, attitudes, and preventive practices of dengue fever and Chikungunya was .731, .829, .725, and .777, respectively.

Protecting the Rights of Participants

The research study was reviewed and approved, in accordance with the ethical guidelines conforming to international standards, by the Research Committee of Asia-Pacific International University. According to committee action No. RRDC 2021-41, participants' rights were adequately protected given the research design. The researchers introduced themselves and asked for the consent of the sample group to participate in the study. The researchers also clarified the right of invitees to accept or decline participation in the study. The participants were informed that they could terminate their participation in this study at any time. An overview of the data obtained are presented.

Data Analysis

1.1 Statistical analysis of questionnaire repondents' answers are given as frequency and percentage values.
1.2 Statistical analysis as indicated under **Objective 1** consisted of frequencies, percentages, Means ($\bar{x}$), and Standard Deviation (*SD*) derivations.
1.3 Statistical analysis as indicated under **Objective 2** was undertaken by calculating Pearson's product-moment correlation coefficient.

1.4 Statistical analysis as indicated under **Objective 3** was accomplished using a *t*-test and one-way ANOVA.

1.5 Statistical analysis as indicated under **Objective 4** was achieved using a paired *t*-test.

Results

Demographics of Questionnaire Respondents

There were 220 respondents from Moo 7 Baan Langkhao. Among these, 67.73% were female, 29.55% were 61-85 years old, 46.82% were elementary school graduates, 45.45% were generally employed, 63.18% were married (registered), and 64.10% had average monthly incomes ranging from 0–10,000 Baht as shown in Table 1.

Table 1 *Demographic Information of Research Respondents* (*N* = 220)

Variables	Number	Percentage
1. Gender		
Male	71	32.27
Female	149	67.73
2. Age (Years)		
15–30	29	13.18
31–45	55	25.00
46–60	64	29.09
61–85	65	29.55
86 and above	7	3.18
3. Educational Level		
Never Been to School	17	7.73
Primary School	103	46.82
Junior High School	36	16.36
Senior High School	37	16.82
Diploma/High Vocational Certificate	11	5.00
Bachelor Degree or Higher	16	7.27
4. Occupation		
Agriculture	24	10.91
Hired Employees	100	45.45
Government Service/State Enterprise Employee	12	5.45
Private Business/Trading	29	13.18
No Job	55	25.00
Student	28	12.73
5. Marital Status		
Single	51	23.18
Married (Registered)	139	63.18
Divorced	8	3.64
Widow/Widower	13	5.91
Married (Not Registered)	9	4.09
6. Average Monthly Income (Thai Baht)		
0–10,000	141	64.10
10,001–20,000	60	27.27
20,001–30,000	10	4.54
30,001–40,000	4	1.82
40,001–50,000	5	2.27

Knowledge, Attitudes, and Practices Regarding Dengue Fever and Chikungunya Prevention

The results (Table 2) showed that 71.82% of respondents' had the highest level of knowledge about dengue fever. When considering the knowledge about Chikungunya, however, it was found that the most common level of knowledge was a moderate level (23.18%).

Table 2 *Respondents Level of Knowledge about Dengue Fever and Chikungunya* (*N* = 220)

Variable	Number	Percentage	Level
Knowledge about dengue fever	158	71.82	Highest Level (81–100%)
	33	15.00	High Level (61–80%)
	12	5.45	Moderate Level (41–60%)
	10	4.55	Low Level (21–40%)
	7	3.18	Lowest Level (0–20%)
Knowledge about Chikungunya	42	19.10	Highest Level (81–100%)
	34	15.45	High Level (61–80%)
	51	23.18	Moderate Level (41–60%)
	45	20.45	Low Level (21–40%)
	48	21.82	Lowest Level (0–20%)

The research findings showed that the overall level of attitudes regarding dengue fever and Chikungunya was moderate ($\bar{x}$ = 3.41). Taking care of the environment around the house and keeping it clean was well understood as assisting in helping to reduce the number of mosquito larvae. It received the highest average score, followed by the belief that dengue fever is a disease that can infect any individual and can be cured over time without any treatment ($\bar{x}$ = 4.21). The belief that destroying mosquito breeding sites is a duty of every household and it must be done every week, received the lowest mean score ($\bar{x}$ =2.04), as shown in Table 3.

Table 3 *Respondent Attitudes about Dengue Fever and Chikungunya* (*N* = 220).

Attitudes on Perceived Risk Factors Associated with Dengue Fever and Chikungunya	Mean ($\bar{x}$)	Standard Deviation (*SD*)	Interpretation
Keeping the environment around the house hygienic will help reduce mosquito larvae (+)	4.61	0.566	Very High
Adding chemical sand granules to the water will change the taste of the water (-)	2.42	1.260	Low
Removal of mosquito larvae is unnecessary because mosquitoes are short-lived (-)	3.41	1.483	Moderate
Putting the chemicals once into the water is sufficient to destroy the larvae forever and it doesn't need to be repeated (-)	3.45	1.412	Moderate
Chikungunya infects only children (-)	3.74	1.265	High
People who are in good health will not develop dengue fever even if they are infected by the *Aedes aegypti* mosquito (+)	2.85	1.468	Moderate
I think getting rid of mosquito larvae in houses is the duty of the public health officials and the Village Health Volunteers only (-)	3.73	1.370	High
I think dengue fever is a disease that can be cured by itself (-)	4.21	1.035	High
I think the *Aedes* mosquitoes cannot lay their eggs in vases or saucers because there's only a small amount of water (-)	3.71	1.336	High
I think destroying the mosquito breeding grounds (three collections) is a duty of every household who has to do it every week (-)	2.04	1.274	Low
Total	**3.41**	**0.674**	**Moderate**

The overall level of dengue and Chikungunya prevention practices was in the high range ($\bar{x}$ = 4.02). When considering items from the highest to the lowest score, it was found that respondents had a habit of sleeping under a mosquito net or sleeping in a room with a mosquito mesh wire screen to

prevent mosquito bites. This measure received the highest average score ($\bar{x}$ = 4.49) followed by the arrangement of house conditions to have enough light and good ventilation, and also the closure of drinking water containers (both $\bar{x}$ = 4.48). The lowest score was received regarding the application of mosquito repellent lotion and the use of mosquito coils to prevent mosquito bites ($\bar{x}$ = 3.09), as shown in Table 4.

Table 4 *Respondent Dengue Fever and Chikungunya Prevention Practices* (*N* = 220)

Items	$\bar{x}$	*SD*	Interpretation
I arranged the conditions of the house to be well lit and well ventilated.	4.48	0.743	High
I regularly inspect the mosquito larvae in water storage containers inside and outside of the house.	4.10	1.006	High
I clean the water tank by scrubbing the water container before changing it.	4.09	1.063	High
I close the lid of the drinking water container or water storage container	4.48	0.943	High
I sleep with a mosquito net or sleep in a room with a mosquito mesh wire screen to prevent mosquito bites	4.49	1.108	High
I apply mosquito repellent lotions/light mosquito coils to prevent mosquito bites.	3.09	1.479	Moderate
I put fish in the water to get rid of the mosquito larvae.	3.54	1.547	Moderate
I get rid of mosquito larvae by putting chemical sand granules to eliminate larvae.	3.88	1.170	High
I eliminate breeding grounds for *Aedes* larvae by removing waste materials/equipment that can hold water, such as tires, bags, pots, etc.	4.23	0.990	High
I persuade family members and neighbors to clear the breeding grounds of *Aedes* mosquitoes to prevent dengue fever.	3.91	1.121	High
Total	**4.02**	**0.596**	**High**

Relationships among Age, Monthly Income, Knowledge, Attitude, and Preventive Practices of Respondents Regarding Dengue Fever and Chikungunya.

The results showed that age was negatively correlated with knowledge about dengue fever, reaching statistical significance at the .05 level. Age was correlated with attitudes about dengue fever and Chikungunya, and also with dengue fever and Chikungunya preventive practices (p < .01), as shown in Table 5.

Table 5 *Relationships among Age, Monthly Income, Knowledge, Attitudes and Preventive Practices of Respondents Regarding Dengue Fever and Chikungunya*

Variable	Age	Monthly Income	Knowledge about Dengue Fever	Knowledge about Chikungunya	Attitudes about Dengue Fever & Chikungunya	Preventive Practices of Dengue Fever & Chikungunya
Age	1					
Monthly Income	.010	1				
Knowledge about dengue fever	.135*	.065	1			
Knowledge about Chikungunya	.005	.037	-.038	1		
Attitudes on dengue fever and Chikungunya	.021	.051	.039	.477**	1	
Preventive practices of dengue fever and Chikungunya	.084	-.117	.197**	.182**	.071	1

**p < .01, *p < .05

Comparative Analysis: Gender Differences in Knowledge, Attitude and Preventive Practices for Dengue Fever and Chikungunya

The results revealed that knowledge about dengue fever differed between men and women, and were significant at the .05 level. No other significant differences were noted (Table 6).

Table 6 *Comparison by Gender of Knowledge, Attitude, and Practices towards Dengue Fever and Chikungunya Prevention* (*N* = 220).

Variables	Gender	*n*	$\bar{x}$	*SD*	*t*	*df*	Sig.
Knowledge about dengue fever	Male	71	7.86	2.04	-2.284*	218	.024
	Female	149	8.49	1.61			
Knowledge about Chikungunya	Male	71	6.17	1.95	0.913	218	.362
	Female	149	5.94	1.72			
Attitude about dengue fever and Chikungunya	Male	71	3.42	0.73	0.023	218	.982
	Female	149	3.42	0.59			
Practices regarding dengue fever and Chikungunya prevention	Male	71	3.95	0.62	-1.381	218	.169
	Female	149	4.07	0.59			

*$p < .05$

When different levels of education and occupation were analyzed, no significant differences were found relating to knowledge about dengue fever and Chikungunya, preventive practices, or attitudes towards the diseases. However, the results showed differences in knowledge about Chikungunya according to marital status ($p < .05$), but no significant difference was found in knowledge about dengue fever practices and attitudes (Table 7).

Table 7 *Comparison by Marital Status of Knowledge, Attitudes and Disease Prevention Practices of Dengue Fever and Chikungunya* (*N* = 220)

Variables	Marital Status	*SS*	*df*	*MS*	*F*	Sig.
Knowledge about dengue fever	Among Groups	16.14	4	4.04	1.28	.280
	Within Groups	678.82	215	3.16		
	Total	694.96	219			
Knowledge about Chikungunya	Among Groups	41.61	4	10.40	3.37*	.011
	Within Groups	662.37	215	3.08		
	Total	703.98	219			
Attitude about dengue fever and Chikungunya	Among Groups	0.43	4	0.11	0.26	.903
	Within Groups	87.82	215	0.41		
	Total	88.25	219			
Practices regarding dengue fever and Chikungunya prevention	Among Groups	2.50	4	0.62	1.78	.135
	Within Group	75.49	215	0.35		
	Total	77.99	219			

Individuals with a registered marital status were significantly different from other groups ($p < .05$), as shown on the following page in Table 8.

Table 8 *Differences of Marital Status and Knowledge about Chikungunya Using Scheffe's Method (Pairs)*

Marital Status	Mean ($\bar{x}$)	Single	Married (Registered)	Divorced, Separated	Widow/ Widower	Married (Unregistered)	Total
		5.77	6.25	6.13	5.62	4.22	6.01
Single	5.77	-					
Married (Registered)	6.25	-0.48	-				
Divorced, Separated	6.13	-0.36	0.12	-			
Widow/Widower	5.62	0.15	0.63	0.51	-		
Married (Unregistered)	4.22	1.54	2.02*	1.90	-1.40	-	
Total	6.01						-

*$p < .05$

Comparative Analysis of Knowledge about Dengue Fever and Chikungunya among Respondents

The results obtained showed that knowledge about dengue fever and Chikungunya differed at the .001 level, as shown in Table 9.

Table 9 *Comparison of Knowledge of Dengue Fever and Chikungunya* (*N* = 220)

Variables	$\bar{x}$	*SD*	*t*	*df*	Sig
Knowledge about dengue fever	8.29	1.78	1.32***	219	.000
Knowledge about Chikungunya	6.01	1.79			

Discussion

Knowledge about Dengue Fever and Chikungunya

The results showed that most respondents' (71.8%) level of knowledge about dengue fever was at the highest level; this contrasted with their knowledge (23.2%) about Chikungunya, which was at a low level. This is consistent with the research findings of Banchawang (2018), who studied the prevention and control of dengue fever of people in Nong Yong Subdistrict, Pak Khat District, Bueng Kan Province. It was found that 59.5% of participants were knowledgeable about dengue fever at a moderate level. It is also in accordance with the research of Tunyarak and Chuaikhlai (2019), who studied knowledge and attitudes about dengue hemorrhagic fever prevention by citizens in Kreng Sub-district, Cha-Ut District, Nakhon Si Thammarat. The average knowledge about dengue fever reached 56.8%, which was consistent with the study of Petchchai et al. (2013). The latter results came from a participatory research study on primary prevention of Chikungunya disease in a community in Surat Thani Province. Their knowledge about Chikungunya was at a moderate level, as was their participation in the prevention of Chikungunya.

The results of comparing knowledge about dengue fever and Chikungunya revealed that knowledge of dengue fever was significantly higher than for Chikungunya ($p < .001$). This may have been due to the fact that dengue fever is a common disease, and that people have gained knowledge from Langkhao public health personnel (Lang Khao Subdistrict Health Promotion Hospital staff), as well as village health volunteers continuously for many years. On the other hand, Chikungunya is a new disease in the community. They may not understand it, have no knowledge about, or cannot tell the differences between the two diseases yet.

Attitudes about Dengue Fever and Chikungunya

From this study, it was found that most participants scored at a moderate level regarding risk factors associated with contracting dengue fever or Chikungunya. Taking care of the environment around the house to reduce the number of mosquito larvae achieved the highest average score, followed by the belief that dengue fever is a disease that can be transmitted and cured by itself. The

duty to destroy mosquito breeding sites every week received a low mean score. This is inconsistent with the findings of Saminpanya et al. (2017), who studied the knowledge, attitudes, and dengue preventive practices of the people from Ban Khan Takhian, Mittraphap Sub-district, Muak Lek District, Saraburi Province. It was found that their attitude towards the prevention of dengue fever was at the highest level, representing a score of 82.0% out of a possible 100%. It was not consistent with the study of Petchchai et al. (2013) either. They considered the attitudes of community members in Surat Thani Province about primary prevention measures to be adopted regarding Chikungunya disease. Their attitudes towards Chikungunya prevention were at a high level.

Preventive Practices of Dengue Fever and Chikungunya

The study results revealed that most preventive practices for dengue fever and Chikungunya were at a high level. It was found that the practices of sleeping with mosquito nets or sleeping in a room with a mosquito mesh wire screen to prevent mosquito bites received the highest average score. This was followed by good house lighting and ventilation, the closure of drinking/used water storage containers, and applying mosquito repellent lotion/lighting mosquito coils to prevent mosquito bites. These observations were consistent with Saminpanya and her colleagues' (2017) study. They found that knowledge, attitudes, and dengue preventive practices of the people from Ban Khan Takhian, Mittraphap Sub-district, Muak Lek District, Saraburi, were at a moderate level.

The results revealed that men and women differed in their knowledge about dengue fever ($p < .05$), but not Chikungunya. This was consistent with the study of Chamnoi (2015), who studied knowledge about dengue fever, preventive measures, and control. The differences attained in the latter study were at the same level of significance.

Age was negatively correlated with knowledge about dengue fever, with attitudes about dengue fever and Chikungunya, and with dengue fever prevention practices. This was consistent with the study of Chamnoi (2015), who researched aspects about dengue fever and its prevention and control in Phran Kratai District, Kamphaeng Phet Province. Perception about the risk of dengue fever also differed significantly with age.

The results also revealed that knowledge about dengue fever and Chikugunya were correlated with attitude and preventive practices. This was consistent with the research of Saminpanya et al. (2017), who studied the knowledge, attitude, and preventive practices of dengue among people of Ban Khan Takhian, Mittraphap Sub-district, Muak Lek District, Saraburi. It was found that knowledge and attitudes were positively correlated with low levels of preventive practices. A knowledge-building approach and programs supporting positive attitudes about dengue fever in the community would contribute to better dengue preventive practices.

Practical Recommendations Derived from Research Results

1. The results of this research provide basic information that may help health workers find ways to enhance their knowledge and support positive attitudes about dengue fever and Chikungunya in their communities, which will influence the preventive practices that are adopted. Informing the people in the community regularly, with a particular focus on the elderly, would be helpful, as it was found that age was inversely correlated with knowledge of dengue fever.

2. The differences between dengue fever and Chikungunya need to be explained to the public, so that they can better care for themselves and their families

3. The research results indicated that respondents had a low average score regarding the advisability of destroying mosquito breeding sites weekly. Therefore, public health personnel, staff of Lang Khao Subdistrict Health Promoting Hospital, and village health volunteers should demonstrate how to destroy mosquito breeding sites as part of a continuous campaign to prevent dengue fever and Chikungunya. This practice compliments household cleanliness, removing garbage continually, keeping dwellings well-lighted, changing water in pots and vases weekly, and keeping lids on water storage devices to prevent mosquitoes from laying eggs. Eliminating mosquito breeding sites can prevent three diseases–namely, dengue fever, Zika virus infection, and Chikungunya.

4. From the research results, it was found that the respondents received a moderate score regarding the practices of applying lotion/ lighting mosquito coils to prevent mosquito bites. The staff of Baan Langkhao Subdistrict Health Promoting Hospital, including village health volunteers, would be advised to encourage people to continue to consistently engage in such practices. This will help prevent dengue fever and Chikungunya.

Suggestions for Further Research

1. There should be a study of the relationship between knowledge, attitudes and preventive practices of dengue fever and Chikungunya among other villages and districts in Saraburi Province and other places where there are still outbreaks of dengue and Chikungunya.

2. There should be a study of factors that contribute to the community's effective participation in the prevention of dengue fever and Chikungunya so that this data could be used in a community trial following an outbreak of dengue fever or Chikungunya.

3. Various health promotion programs for dengue fever and Chikungunya should be studied in different communities.

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Kejaman in Malaysia: Decreasing Language Ability and Uniplexity of Social Networks[1]

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Abstract

This study examined the influence of social networks on the language ability of Kejaman speakers, a small indigenous group in Sarawak, Malaysia. Using questionnaires, data were collected from 123 participants from three generations of Kejaman speakers who lived in two longhouses located in Belaga, Sarawak. The results showed good to excellent ability in Kejaman among the grandparents and parents' generation, but fewer of the children's generation were able to interact fluently and spontaneously in Kejaman. Based on frameworks for social network analysis, the Kejaman had a loose-knit social network characterised by a low density and uniplex social network pattern, indicating dependence on a selected number of kin and non-kin contacts. The average number of contacts in their exchange and interactive network was three each for all three generations. The grandparents' generation was close to having a multiplex social network (49.1%), but the other two generations had uniplex social networks of 21% to 25%. There were significant negative correlations between ability to speak Kejaman and the number of exchange and interactive networks. Their networks comprise contacts from other ethnic groups. Therefore, having more contacts and interactions with non-Kejaman speakers was associated with a lower level of Kejaman ability.

Keywords: *Exchange networks, interactive networks, uniplex, multiplexity, Kejaman*

Introduction

Ethnic languages thrive where members of an ethnic group live together and it is the shared language of wider communication in the community. However, once speakers of an ethnic language live among people who speak other languages, such as in urban areas with ethnic diversity in workplaces and social groups or in families where there is intermarriage, research shows that many communities shift from their ethnic language to more dominant languages (Trevilla, 2009). Decreasing use of ethnic languages has been attributed to various factors, including intermarriage (David, 1996), education, (Eckert, 2000; Eun, 2018; Li, 1994) and urbanisation (Alagappar et al., 2018; Gal, 1979; Milroy, 1987). Intermarriage may result in the use of the language of one spouse, or neither of them because they may choose to speak a language in which both are proficient. Education may also cause a decrease in the use of ethnic languages because once children attend school, they may speak the school language at home. Studies on the Chinese in Sarawak showed that children who attend Chinese medium schools end up speaking Mandarin at home, thereby easing out the use of Chinese dialects (Lee & Ting, 2016; Lee et al., 2017). Members of ethnic groups who move to urban areas have less opportunities to speak their ethnic language. In urban areas, intermarriages are also more frequent. Communication with social and work contacts who are not from the same ethnic group is usually in shared standard languages.

Social Network Analysis is an approach used to investigate how network structure affects every day behaviour (Hawe et al., 2004), including language behaviour. A social network is a social structure made up of individuals (or organisations) connected by one or more specific types of interdependencies such as friendship, kinship, common interest, or relationships of beliefs, knowledge, or even prestige (Milardo, 1988; Milroy, 1987). The primary hypothesis of Social Network Theory is that individuals are embedded in their personal social clusters which provide them with

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structures that help them to cope with their everyday lives, and which also affect members' behaviour (e.g., language use) (Sarhimaa, 2009). To perform social network analysis, it is necessary to find out who is linked to whom, the nature of that linkage, and how the linkage affects behaviour (linguistic behaviour) (Karahan, 2004).

Over time, the interaction and mutual engagement of people who come together either directly or indirectly via other people leads to development of shared norms and patterns of behaviour. Milroy (1987) found that the strongest ties correlated with the strongest use of vernacular variants. Following Granovetter's (1973) seminal strength of weak ties argument, Milroy (1987) posited that weak ties are significant channels for linguistic and social change because they serve as bridges across groups. Conversely, strong ties lead to intra-group cohesion and support of localised norms (Velazquez, 2013). Li (1994) and Milroy (1987) claimed that a dense and close-knit social network system is a crucial mechanism for ethnic language maintenance. The study of social networks enables researchers to investigate the immediate contexts for the use of languages, and will offer more insights into language use than demographic factors (e.g., education, intermarriage) or societal factors such as urbanisation.

Little is known about whether the Kejaman are retaining use of their ethnic language during a time of change when younger members of the community move to urban areas to continue their education and to work. The Kejaman are a small indigenous group living in two longhouses in the interior of Belaga, along the river Balui, in the Kapit Division of Sarawak (Strickland, 1995). Based on the 2012 census, there were about 1,200 speakers at Rumah Kejaman Neh Long Litten and 1,170 speakers at Rumah Kejaman Ba Segaham (Belaga District Office, 2013; Joan & Ekot, 2017). The Kejaman population is only 0.08% of the 2.79 million Sarawak state population (Department of Statistics Malaysia, 2017). Many Kejaman speakers have moved away from Belaga to live in urban areas. Over a decade ago, the vitality of the Kejaman language was assessed at level 6a of the Expanded Graded Intergenerational Disruption Scale (EGIDS, Lewis & Simons, 2009) as the language was used orally by all generations and was spoken by children as their first language. However, more than a decade later, there are concerns that the youngest generation may be losing ability to speak Kejaman, and it is intriguing how some people transmit Kejaman to their children, while others abandon it.

This study examined the influence of social networks on the language ability of the Kejaman in Sarawak, Malaysia. The specific objectives of the study were to determine: (a) the ability of participants to speak Kejaman and other languages; (b) the density and multiplexity of their social networks; and (c) the relationship between Kejaman language ability and density of social network links. The hypothesis was that Kejaman language ability increases with an increase in the density of social network links.

Method of the Study

The study involved 123 Kejaman speakers (52 males and 71 females aged 7–90), consisting of three generations (grandparents, parents, and children). Each generation consisted of 41 participants. Table 1 shows the demographic background of the participants involved in this study.

Table 1 *Demographic Background (Frequency and Percentages) of Participants (N = 123)*

Feature	**Generation 1**	**Generation 2**	**Generation 3**
Place of Birth			
Belaga	39 (95%)	19 (46.3%)	4 (9.7%)
Other places	2 (4.8%)	22 (53.7%)	37 (90.3%)
Living Permanently in the Longhouse			
Yes	25 (61.0%)	19 (46.3%)	8 (19.5%)
No	16 (39.0%)	22 (53.7%)	33 (80.5%)
Social Media Group Membership			
Aneak Kejaman FB	32 (78.0%)	41 (100%)	37 (90.2%)
1 Kejaman Facebook	31 (75.6%)	41 (100%)	36 (87.8%)
WhatsApp	31 (75.6%)	41 (100%)	36 (87.8%)

The participants were considered Kejaman if one of their parents was Kejaman. A majority of the participants' fathers (78%) and mothers (69%) were Kejaman. Intermarriage is a growing phenomenon, as shown by 85% of the children having mixed parentage. More participants were Malay-educated (52%) than English-educated (42%), while 6% did not go to school at all.

To collect data on language ability, participants were asked to self-report their ability to speak seven languages on a scale of one to five: Kejaman, Malay, English, Iban, Kayan, Chinese, and Mixed Language. In this study, mixed language was defined as use of two or more languages in the same conversation.

The language ability scale for self-rating shown in Table 2 was adapted from Li (1994) and Mah (2005). According to Duff (2014), only the speaker knows the actual knowledge he/she has of a language. Self-reports of language ability are considered reliable as they have been employed in other research on language maintenance and shift (Alagappar et al., 2018; Joan & Ting, 2017; Li, 1994; Mah, 2005; Stoessel, 2002; Ting & Ling, 2012; Wang & Chong, 2011).

Table 2 *Language Scale for Self-rating of Kejaman Language Ability*

Scale	Descriptors
5: *Excellent*	Able to understand what is heard or read in mother tongue. Able to summarise information, express opinions. Able to use the language socially and professionally. Able to interact fluently and spontaneously with native speakers.
4: *Good*	Able to interact fluently and spontaneously with native speakers. Able to describe experience and events, aspirations and give their opinions.
3: *Average*	Able to describe experience and events, aspirations, and give opinions. Able to communicate about daily routine. Able to introduce oneself and others. Able to answer simple questions.
2: *Very little*	Able to communicate about daily routine. Able to introduce oneself and others. Able to answer simple questions.
1: *Not at all*	Unable to use the language at all.

The instrument for eliciting data on social network comprising 20 situations was adapted from Stoessel (2002) and Lanza and Svendsen (2007). The 20 different situations were based on domains such as family, friendships, transactions, employment, education, law, government and religion. For example, for the situation related to financial problems, participants were asked “Who will you consult when you face financial problems?” (Stoessel, 2002, p. 44). For the situation related to childcare, the participants were asked "When you need someone to take care of your children, who would you seek help from?" (Lanza & Svendsen, 2007, p. 36). Four out of the 20 speech situations were not in these two sources, but were added because they were relevant to the Kejaman community (Ghani, 2000; Joan & Ting, 2017). The four situations were related to health, childcare, leisure, funeral/death and taboo. The participants’ answers provided information on the exchange network (family, including relatives with blood ties) and interactive networks (non-kin).

Participants were also required to list the names of people who knew one another and the capacities or settings in which they knew each other. This was used to determine whether the individual belonged to a uniplex network (knowing the person in a single capacity) or a multiplex network, based on Milroy (1987). A multiplex network is comprised of individuals who know a few people in many capacities, like a person’s cousin may be his neighbour and also his colleague.

For data collection, consent was obtained from the District Officer in Belaga and the Maren Uma (chief) of the two longhouses. On the day of data collection, the researcher met all the participants at once, explained the study, and distributed the questionnaires, which were collected the following day.

The questionnaire data were keyed into IBM SPSS Statistics 22 for analysis. For language ability, frequencies and mean scores were calculated (see Table 1). The social network information on with whom the participants talked was categorised into kin and non-kin to compute the number of links for the exchange and interactive networks respectively. As an example, the formula for calculating the number of links in the exchange network was as follows:

$$\text{No. of Links in Exchange Networks} = \frac{\text{No. of People for Situation 1 + … (till Situation 20)}}{\text{Total Number of Situations (i.e. 20)}}$$

The minimum number could be zero if the participants did not talk to anybody about their problems, and there was no maximum number. If the number of links in the exchange network was three, it meant that the participants talked to an average of three persons when they faced a certain kind of problem. The same formula was used for calculating the number of links in interactive networks.

Next, the density and the multiplexity of the participants' social network were calculated. Milroy (1987) emphasised that density and multiplexity scores are conditions that often co-occur. Density is the percentage of the actual number of links over the total number of possible network links (Milroy, 1987). The denominator is 20 links (based on the 20 situations presented in this study).

$$\text{Density} = \frac{\text{Actual Number of Links}}{\text{Total Number of Possible Links (i.e., 20)}} \times 100\%$$

For multiplexity scores, the total number of contacts listed by the participants was used as the denominator in the formula. The numerator was obtained by adding up all the number of multiplex links for Participant 1, Participant 2 and so on.

$$\text{Multiplexity} = \frac{\text{Total Number of Contacts Who Know Each Other of All Participants}}{\text{Total Number of Contacts Listed by All Participants}} \times 100\%$$

Based on Milroy's (1987) Network Strength Scale, the density and multiplexity scores were divided into two scales: low (0–49%) and high (50–100%). Pearson's Correlation Coefficient tests were run to gauge the strength of relationships among language ability, exchange networks, and interactive networks.

Results

Language Ability

Table 3 shows the language ability of the participants for Kejaman, Malay, English, Iban, Kayan and Mixed Language. The participants' language ability will be described for each of these languages.

The results showed a decrease in Kejaman language ability from G1 to G3. G1 individuals were fluent speakers of the Kejaman language (*M* = 4.80) compared to G2 (*M* = 4.73), while G3 participants had very little ability in Kejaman. G1 individuals had the best mastery of their ethnic language because they lived with their parents (82.9%) and in Belaga (61%). Their fathers (92.6%) and mothers (58.5%) were also Kejaman. Their family (exchange network) was Kejaman, and therefore they had many opportunities to speak Kejaman on a daily basis, and could speak Kejaman fluently and spontaneously in social and professional contexts.

The Kejaman participants' ability to speak Malay and English increased from G1 to G3, indicating that these languages may replace Kejaman in daily use in the future. Table 2 shows that G1 participants had an average ability to speak Malay (*M* = 3.04) and English (*M* = 2.73). They could use Malay to talk about daily routines, their experiences and events, and give their opinions. G2 individuals had better ability to speak Malay (*M* = 4.17) and English (*M* = 3.68); they could interact fluently and spontaneously in these two standard languages.

Table 3 *Language Ability of the Kejaman Participants for Kejaman, Malay, English, Iban, Kayan and Mixed Language (N = 123)*

Language	Kejaman			Malay			English			Iban			Kayan			Mixed Language		
	G1	**G2**	**G3**	**G1**	**G2**	**G3**	**G1**	**G2**	**G3**	**G1**	**G2**	**G3**	**G1**	**G2**	**G3**	**G1**	**G2**	**G3**
5: *Excellent*	34	33	3	4	11	10	5	9	3	10	24	3	8	8	1	13	8	4
4: *Good*	6	6	6	7	27	25	7	18	23	26	11	23	13	10	1	12	10	4
3: *Average*	1	2	5	18	2	5	11	8	10	3	6	10	12	18	7	4	9	7
2: *Very little*	0	0	10	11	1	1	8	4	5	2	0	5	3	2	1	4	4	2
1: *Not at all*	0	0	17	1	0	0	10	2	0	0	0	0	5	2	31	8	8	24
Mean	4.80	4.73	2.21	3.04	4.17	4.07	2.73	3.68	3.58	4.02	4.43	3.39	3.39	3.50	1.53	3.43	3.15	2.07
SD	0.45	0.53	1.33	0.97	0.62	0.68	1.34	1.08	0.80	0.87	0.74	1.56	1.24	1.03	1.02	1.51	1.42	1.43

Notes.

1. G1, G2, and G3 refer to Generation 1 (grandparents), Generation 2 (parents) and Generation 3 (children) respectively. There were 41 participants each for the three generations.
2. Mixed language refers to code-switching between all the languages in the speaker's linguistic repertoire.

Surprisingly, the G3's ability in these two languages was only average to good (Malay, *M* = 4.07; English, *M* = 3.58). As G3 individuals were mostly still in school, they were in the process of acquiring mastery of the standard languages.

As for Iban, the other indigenous group found in large numbers in Belaga, G1 and G2 participants reported good ability to speak Iban (G1, *M* = 4.02; G2, *M* = 4.43). They could talk fluently and spontaneously in Iban about their experiences and opinions in social contexts, and to some extent, in professional contexts. However, G3 individuals had only average ability to speak Iban, meaning that they could use Iban to talk about daily routines, their experiences, events, aspirations and opinions.

Kayan is another indigenous group living in Belaga, and the older generations of the Kejaman participants could speak Kayan (G1, *M* = 3.50; G2, *M* = 3.39). G3's ability to speak Kayan (*M* = 1.53) was limited to talking about daily routines.

A comparison across the generations showed that G2 was the most versatile in language ability. They were still fluent speakers of their ethnic language because over half (56.1%) of them lived with their grandparents, and they were in frequent contact with their families and relatives through WhatsApp and social media platforms like Facebook. All of them were in the Kejaman WhatsApp group. Their social media communication may not be totally in Kejaman, but there would be at least a sprinkling of words or chunks of the communication in Kejaman. The extent of Kejaman use in social media communication across the generations is an area for further investigation.

Among the three generations, G3 reported the least ability to speak Kejaman, and the factors leading to this were residence outside of Belaga, Malay medium education, and fewer Kejaman speakers in their social networks. Many of them (70.7%) live in urban areas and lacked opportunities to speak Kejaman. A majority (85.36%) of them belonged to a mixed marriage family. This is why G3 reported speaking Malay, English, and Iban better than Kejaman. Some will not be able to pass on Kejaman to their children in the future because they already cannot speak Kejaman well.

Social Networks

The social network of participants was identified based on the number of people they talked to when they encountered problems in 20 situations. The study's results showed that the Kejaman participants talked to kin (exchange network) on finance-related matters, funeral and death, religious ceremonies, and traditions. However, they talked to non-kin in matters related to information and communication technology, a topic associated with modern life.

Table 4 shows the mean scores for the number of exchange and interactive networks, and density and multiplexity scores for the three generations of Kejaman participants. G2 individuals talked to more contacts (6.9 persons) about their problems, compared to G1 and G3 (5.4 persons each). All three generations were more likely to seek advice from family than from friends, colleagues, neighbours and so on as indicated by the larger number of exchange networks (kin) than interactive networks (non-kin). G2 participants were in contact with as many family members and non-family members, but G1 and G3 persons had more contacts with kin. G2 individuals were in contact with more groups of people (colleagues, friends, family) because they were working. All of them were members of the three WhatsApp groups for Kejaman people: Aneak Kejaman FB, 1 Kejaman FB, and smaller WhatsApp groups.

Table 4 *Number of Exchange/Interactive Networks and Density Scores for Generations 1, 2 and 3 (Mean Scores, N = 123)*

Generation	Exchange Network	Interactive Network	Total Number of Networks	Density Scores	Multiplexity Scores
1	3.0	2.4	5.4	27.4%	49.1%
2	3.6	3.4	6.9	34.6%	21.3%
3	3.1	2.3	5.4	27.2%	24.3%

Table 3 shows that the three generations of Kejaman participants had low density scores of below 50% (G1, 27.4%, G2, 34.6%; G3, 27.2%). The participants either had few contacts or were selective in seeking advice from a few contacts. Only a few participants had high density scores of above 50% (4.8% of G1; 9.8% of G2; 4.9% of G3). More G2 participants had higher density scores, indicating that they sought advice from more people than G1 and G3 individuals, probably because they had additional work contacts.

As for multiplexity, G1 persons had the highest mutiplexity score of 49.1%, while the other two generations had multiplexity scores below 25%. Most G1 participants were from two longhouses where they knew everyone in the longhouse, and some were family. The low multiplexity scores showed that G2 and G3 individuals had uniplex networks, because in town areas, people usually knew one another in single capacities. For example, the participants' colleagues and friends did not know one another.

When the density and multiplexity scores are put together, they allow groups to be characterised as close- or loose-knit social networks. Table 4 shows that the three generations had a loose-knit social network pattern (low density, uniplex). Although G1 participants had a multiplexity score of 49.1%, it was still categorised as a uniplex network based on Milroy's (1987) Network Strength Scale because it was below 50%. Milroy (1992) emphasised that loose-knit networks facilitated linguistic change, while close-knit networks are a norm maintenance mechanism for language maintenance. In this study, even though G1 and G2 individuals had a loose-knit social network, they still had good-to-excellent ability to speak Kejaman because they grew up speaking Kejaman and retained their language ability, despite acquiring proficiency in other languages.

Correlation between Language Ability and Social Network

To test the hypothesis on whether an increase in the Kejaman language ability is associated with an increase in the density of social network links, the social networks were categorised into exchange network and interactive network. The Pearson Correlation test results showed that there was a significant relationship between exchange network and language ability at confidence level at $p < .01$ (Table 5). There was also a significant relationship between interactive network and language ability at $p < .01$. However, the direction of the correlation was not expected. The more exchange or interactive networks the Kejaman participants had in their social networks, the lower their Kejaman language ability, and this correlation was significant for all three generations. The negative correlation points to the exchange and interactive networks having many contacts who are not Kejaman-speaking.

Table 5 *Correlation between Kejaman Language Ability and Social Networks for Generations 1, 2 and 3 (N = 123)*

Generation	Exchange Network	Interactive Network
G1 Language Ability	-.46**	-.42**
G2 Language Ability	-.62**	-.59**
G3 Language Ability	-.59**	-.72**

Note. **$p < .01$

For G1 individuals, the correlation between their network and language ability was moderate (r = -.46 for exchange network; $r = .42$ for interactive network). They had a good to excellent ability to speak Kejaman because they were living in the two longhouses in Belaga among other Kejaman speakers who they knew in many capacities. However, these individuals were also prone to mixing languages ($M = 3.43$ out of 5, Table 2) because they interacted with other Iban and Kayan people in buying-and-selling, and when they go to banks, the post office and government departments to settle matters.

For G2 participants, the correlations between language ability and the two networks were moderately high ($r = -.62$ for exchange network; $r = -.59$ for interactive network). The more contacts they had among family and people with non-blood ties, the poorer their Kejaman language ability.

This is expected because of the presence of many non-Kejaman people in their exchange and interactive networks. Their exchange network had many non-Kejaman people due to mixed marriages, and their interactive network had very few Kejaman people because the small number of Kejaman people who live outside of Belaga were spread all over Sarawak.

As for G3 participants, they were surrounded by Kejaman speakers only when their parents brought them to the longhouses during festival celebrations and funerals of family members. The presence of non-Kejaman speakers leading to them having poorer ability to speak Kejaman is more obvious for their interactive network (r = -.72) than their exchange network (r = -.59). Table 2 shows that G3 participants had very little ability to speak Kejaman, and the low density and multiplexity scores in Table 3 show that the youngest generation of the Kejaman were interacting with their friends and nuclear families in Malay, English and, to some extent, Iban.

Discussion

The finding of a negative relationship between the number of social network links and ability to speak the ethnic language for the Kejaman participants for all three generations was unexpected. Other studies (Lanza & Svendsen, 2007; Li, 1994; Stoessel, 2002) have found that when participants have a greater number of exchange networks, they have a better ability to speak their ethnic language. The Kejaman had a loose-knit social network indicated by the low density and uniplex network pattern, but yet they largely retained their ability to speak Kejaman.

The negative relationship between number of social network links and language ability contradicted previous findings. Early research (Milroy, 1987) on social networks showed a positive correlation between close-knit social networks and maintenance of the ethnic language. In recent research where a positive correlation was found, the participants had dense network links with their ethnic community and practised endogamy, such as the Malayalee Indian in Malaysia (Govindasamy & Nambiar, 2003). The Kejaman differed in that they had low density social networks. The Kejaman's social networks can be described as weak ties. They talked to only five to seven people when they faced problems, and most of their contacts did not know one another. Weak network links facilitate linguistic change, and the weak ties usually occur in communities where the members of the community are socially and geographically mobile, and their numerous contacts do not know one another (Milroy, 1987).

Yet, despite the loose-knit social networks of the Kejaman, the grandparents and parents' generations retained good to excellent ability to speak Kejaman, while the children's ability ranged from poor to good. In addition, the Kejaman situation is different from the Guernesiais speakers in the Channel Islands (British Crown Dependency near France). Sallabank (2010) found that denser social networks were associated with better ability to speak Guernesiais, while older, educated, frequent users of social media, and speakers isolated from native speakers had poorer ability. Sallabank's (2010) results suggested that modernity led to loss of the ethnic language at both the individual and societal levels. However, Kejaman language loss at the individual and societal levels had not happened yet at the time of the study. For the children's generation, the maintenance of the Kejaman language may be attributed to their closer ties with kin (about three family members) than non-kin (about two persons). In the totality of language use in a day, there is more communication with exchange networks, and this allows the Kejaman language to be used frequently.

The results suggest that social media communication among Kejaman speakers can help preserve the language. Kejaman language maintenance among the younger generation at this point in time may be due to frequent contact with Kejaman people through social media communication. Even if the Kejaman participants are geographically separate from their nuclear and extended families, their frequent contact via social media has kept Kejaman relevant to their linguistic repertoire. As mentioned, the Kejaman people have moved to other towns outside of Belaga, where previous generations of Kejaman people have usually lived. They are not migrants to another land, yet the feeling of living far away from family is similar to that experienced by migrants, because it takes eight hours to travel from Bintulu (the nearest town)—that is six hours by car (land), and two hours by boat

(river). Lanza and Svendsen (2007) pointed out that migrants who keep in close contact with their families through telephone calls, emails, and SMS messages had many opportunities to use their ethnic language. Undoubtedly, the language used in the new media tends to be standard languages, particularly English (second language in Malaysia) and Malay (first language in Malaysia), based on findings among the Iban of Sarawak (Metom et al., 2021; Ting et al., 2020). This can be observed in the use of Iban, which is the largest indigenous group in Sarawak, and yet English and Malay are creeping into social media communication. The Kejaman would be no different in their preference to use English and Malay in social media communication. The shift away from Kejaman would be faster because the Kejaman account for only 0.08% of the Sarawak state population, whereas the Iban account for 28.6% of the Sarawak state population (Department of Statistics Malaysia, 2017). Nevertheless, the inclusion of some Kejaman words among other languages is at least keeping the language alive in daily communication, even among the children's generation. A greater part of the interactions is with kin, which means there are opportunities for a variety of Kejaman words to be used. This is because Kejaman participants talk with their family on a wide range of topics such as finance-related matters, religious ceremonies, funerals and death, and traditions. They only talked to non-kin on information/communication technology matters.

Conclusions

This study showed that the Kejaman had low density, uniplex social networks and numbers of contacts; these were negatively associated with their ability to speak Kejaman. The more exchange and interactive networks they had, the more they were in contact with non-Kejaman people, and the fewer opportunities they had to speak Kejaman. The study's findings showed that in the digital era, the ethnic language can be preserved through social media communication among the Kejaman community, particularly virtual interactions within the exchange networks. These findings contribute to understanding mechanisms of language shift beyond merely identifying macro factors such as locality and population size, by highlighting micro factors such as age, gender, education level and socio-economic status which have been studied by other researchers (Ghani, 2022; Joan, 2013; Joan & Ting, 2016). However, the present study did not investigate the factors that influence social networks or the proportion of Kejaman speakers among contacts in the exchange and interactive networks. An assumption was made about the exchange network being made up of Kejaman speakers, and the interactive networks being made up of both Kejaman and non-Kejaman speakers. Future research should also investigate the ethnic compositions (Li, 1994) or ethnic index of social networks (Lanza & Svendsen, 2007), because the overwhelming presence of non-Kejamans leads to other shared languages being used. Such research will lead to a better understanding of how languages of small groups may be lost from their communities.

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Lack of Passion for Leadership among University Students

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Abstract

Due to various factors, university students may be reluctant to take on leadership roles. The aim of this study was to investigate these factors and offer suggestions to strengthen student leadership programs in a university setting. Thirteen student leaders and one university administrator participated in a qualitative study involving in-depth interviews conducted face-to-face and through Microsoft Teams video calls, all of which lasted between 30 to 45 minutes. Two-thirds of the respondents expressed that students lacked interest in leadership roles, and the remainder said students were reluctant to apply for a position due to unfavorable factors. While all the respondents agreed that student leadership was a rewarding experience, most students in the university were not able to draw a connection between leadership values and their future careers, resulting in a hesitant mindset towards bearing leadership responsibilities. An action plan is proposed to address this challenge. Following the suggestions from this study, students may be encouraged to participate in the leadership program as student leaders.

Keywords: *Student leadership, student organization, leadership program*

Introduction

Student-led organizations at higher education institutions generally go through changes in leadership annually. This process, however, can be challenging due to the need to seek capable people to represent the students. This challenge was noticed by the researcher of this study when he was a sophomore student. In March 2019, the International Business officers at the researcher's university announced that there would be a business department election to select a new team of officers. The researcher considered this a valuable opportunity and applied to be the next president of the International Business Club in the Faculty of Business Administration. He was astonished because he initially thought business students would be active in leadership, notably management students. This was not the case. The outgoing president had been struggling to find a successor. Before the present writer assumed the position, he found he was the only candidate who ran. This experience prompted an investigation of the hesitant mindset among students in the business department, other departments, and clubs in the university. The aim was to identify and understand the possible causes of hesitancy. This study will contribute to the university student leadership program, especially in encouraging young leaders. It will also be beneficial to readers interested in student leadership, as well as for those from the university administration domain.

Literature Review

Christian Model in Student Leadership

Since this study was set in a Christian institution of higher education, it was appropriate to consider the life of Jesus as an example for leadership. Jesus' model of leadership places emphasis more on being a blessing to others through the act of serving rather than being in the position of authority. As such, it is common for Christian institutions to organize service-oriented activities to shape and prepare students to serve the community. These experiences will make the student's life rich, lively, and wholly passionate. In the Adventist setting, studies have shown that graduates are more passionate about serving because they were presented with opportunities to serve and practice their leadership skills based on Christ's teachings (Adventist Colleges, 2020). One significant outcome of Christ's teaching on leadership can be seen in Mark 10:42–44 (NIV):

> Jesus called them together and said, 'You know that those who are regarded as rulers of the Gentiles lord it over them, and their high officials exercise authority over them. Not so with you. Instead, whoever wants to become great among you must be your servant, and whoever wants to be first must be slave of all.'

The current study was built upon the foundation of Christian leadership. According to Andrews University (2022), "Christian leadership is a dynamic relational process in which people, under the influence of the Holy Spirit, partner to achieve a common goal–it is serving others by leading and leading others by serving." In addition, Kessler and Kretzschmar (2015, p. 2) stated that "a Christian leader is a person who follows Christ and whom other persons follow." True leadership signifies and embraces the opinions and desires of those who follow.

Christian education aims to ignite the passion for leadership among young Christian youth through Christ's leadership principles. Helping students advance in leading is challenging because, at the same time, they also need to go through teaching and learning processes expected of a university. Nonetheless, the value of student leadership may be observed worldwide (Day et al., 2004).

Student Leadership in Asia Context

Muenjohn et al. (2016) studied the leadership curriculum of institutions in Hong Kong and Singapore. They stated that, with the high expectations and challenges in the leadership components of the educational curriculum, most international education programs must guarantee that the quality of learning and teaching, materials and resources, assessment approach, and content is at an optimal level. Many business schools throughout the globe have acknowledged the necessity of leadership training as students go through university. In addition, Wu (2011) carried out a study in Taiwan about the effects of college experiences on student leadership capacity and found that student leadership capacity actually increased in college. Students can develop leadership capacity through regular curricular activities, allowing them to gain complex knowledge regarding leadership. Moreover, it can develop their moral character.

Student leadership development has been an essential responsibility of the institution's student affairs professionals. They created programs that provide leadership opportunities in residence life, student activities, clubs and organizations, and service learning (Wisner, 2011). In Thailand, the government agency that supervises higher education institutions concentrates on three areas of student development: Wisdom, skills, and ethics related to their future career. Curriculum development and extracurricular activities play a critical role in achieving these goals because of the fast changes in society. The goal is to assist students in coping with society and becoming influential citizens by cultivating passion and dedication. As a result, the focus has shifted from academics alone to the combination of academic and extracurricular activities such as community service, campus events, and public governance to aid growth (Wisaruetapa, 2010).

Student Leadership Development Program

The student leadership program is a prominent theme and objective in higher education because it highlights the advantages of living-and-learning environments that stimulate the cultivation of leadership-related characteristics (Thompson, 2006). There are various forms of student leadership programs, including those facilitating leadership attributes within the curricular structure and that give incidental experiences where students have direct involvement in activities, such as sitting in on negotiations, playing a part in conflict resolution, or being involved in community outreach activities (Skalicky et al., 2018). Given the valuable learning opportunities that students can experience in a student organization, institutions should ensure that the organization is well-organized and active. The student government's mission, goals, and objectives should serve the needs and interests of all students. Furthermore, administrators should collaborate closely with student leaders, providing them an appropriate voice in the institution's decision-making process (Office of Education, 2017).

Is Passion an Essential Variable in Leadership?

Although passion may not be a crucial variable in leadership, it does bolster a leader's effectiveness, which is an imperative characteristic of influential leaders. Leaders' effectiveness encompasses not just the capacity of leaders to influence others and achieve collective goals but also the effectiveness of the team, group, or organization (Tan et al., 2011). Effective leadership is required for success in social, educational, business, and similar environments, given the current context of the uncertainty about the effect of a worldwide pandemic (Xiong et al., 2021). Hence, passion is a notion that relates to people's recognition of a necessary component for which they invest time and energy. Passion also relates to students' performance, intentional practice, tenacity, goal orientation, drive to learn, resilience, and well-being by an increasing number of academics working in the educational setting (Faheem, 2019).

Definition of Student Leadership

White (2004) defined student leadership as an influence relationship involving student leaders and followers who intend to facilitate fundamental changes that reflect their mutual purposes. Student leaders are role models participating actively in all other aspects of academic life. They are a bridge for their friends, and they are to set examples for them, thereby influencing them through their actions.

For the purposes of this study, student leadership was defined as the act of actively engaging in representing, mentoring, influencing, motivating, and guiding the student groups or clubs to achieve attainable goals. Student leaders also act as a bridge between the student clubs and the university staff to discuss improvements towards mutual goals. Lastly, they plan and organize student activities that cultivate morals and ethics, maintain cultures and traditions, enhance good relationships, and propagate the university's reputation.

Part of the reason why this study is important is that not many studies of student leadership have been conducted, especially in faith-based residential institutions.

Objective and Research Questions

Taking on a leadership role is unquestionably a difficult decision. Students should have a willingness to serve and a desire to lead. The main objective of this research was to study how students responded to the call to take a leadership role and then suggest ways to help encourage students to become extraordinary leaders. The guiding research questions included the following:

1. To what extent are students willing to be student leaders in the university?
2. What reason or factor might encourage or discourage students from becoming leaders?
3. What strategies might motivate students to be more willing to accept a leadership role?

Methodology of the Study

This study was conducted in a private international, faith-based university in Thailand, which is primarily residential. Since this study was conducted at a private Christian university, the concept of servant leadership was the model most commonly practiced on campus. A qualitative research method, using in-depth interviews, was selected for this study. The researcher used the Participatory Action Research (PAR) approach. According to Rodríguez and Brown (2009, p. 23), "PAR is an empirical methodological approach in which people directly affected by a problem under investigation engage as co-researchers in the research process, which includes action, or intervention, into the problem." The PAR method involved steps that included planning, acting, observing, and evaluating a particular subject before a proposed action (McTaggart, 1991). It combines the researchers' expertise with the participants' strengths and actual experiences (Halliday et al., 2018). In the current study, the research was carried out by the author, who interviewed stakeholders involved in the problem being studied. The researcher preserved the respondents' anonymity.

The data collected were then thematized based on the similarities of the respondents' experiences. Purposive sampling was used to align with the intent of the research study, which was to

study the hesitant mindset experienced by university students concerning leadership roles. The selection criteria included four items: The respondent must be an active officer who participated in at least two student-led organizations, must have excellent observation ability, must be a respected role model officer, and must be skilled in managing both work and academic life. A total of 13 structured open-ended questions were used in the in-depth interviews conducted from August 25 to November 12, 2021. These were facilitated through face-to-face and Microsoft Teams video calls that lasted for approximately 30 to 45 minutes per respondent. The interview process included a total of three parts (13 questions):

Part 1: Demographics and primary leadership interest (five questions);
Part 2: Determining the possible reasons contributing to the problem (four questions); and
Part 3: Seeking for improvement through suggestions (four questions).

The targeted sample comprised student officers who have the experience of leading team members (club members or the student body) in more than one student-led organization. There were approximately 17 student-led organizations composed of 165 student leaders in the university. A total of 13 student leaders were selected to contribute their responses to the study. The leaders came from different countries, academic years, and leadership backgrounds. To further validate the result, the researcher also invited one administrator to represent the university's point of view on the matter. Hence, 14 individuals took part in this study.

Results and Discussion

Respondents were addressed by number in order to maintain anonymity, as shown in Table 1.

Table 1 *Respondent Demographics and Leadership Experiences*

Respondent	Gender	Academic Status	Nationality	Student Organization
1	Female	Junior	Thai	Student Government
2	Female	Senior	Laotian	Student Government
3	Male	Senior	Brazilian	English Club
4	Female	Senior	Chinese	Education Club
5	Male	Senior	Malaysian	Malaysian Club
6	Male	Junior	Cambodian	Cambodian Club
7	Male	Alumnus	Zambian	Student Government
8	Male	Alumnus	Malaysian	Student Government
9	Female	Senior	Filipino	Student Government
10	Male	Junior	Filipino	Student Government
11	Male	Senior	Indonesian	Volunteer Development Club
12	Female	Senior	Sri Lankan	SADFree Movement & Science Club
13	Male	Senior	Myanmar	Badminton Club
14	Male	Staff	American	Student Services Department

The findings are presented according to the order of the research questions. The respondents' answers covered a wide range of different perspectives. As such, the researcher clustered the data based on their commonalities.

The Extent to Which Students Are Willing to Serve as Student Leaders

Respondent 5 commented that the number of passionate students willing to take up a leadership role declines every year. Thus, the one who remains in the position is perpetually the same. Moreover, the pandemic has strongly affected students' willingness to become leaders due to its numerous restrictions and costly measures imposed. Moreover, he said that the mindset of young people now is more laid back. They tend to focus more on their well-being than being a part of an organization to serve the academic community.

In addition, Respondent 14 added that students lacked a vision of what they can do as leaders to impact the school positively. Without that vision, they do not have the passion. Without their passion, they are focused on other things such as grades, personal lifestyle, and relationships, which are not entirely bad. However, it limits their capability to become more than what they already are.

To better understand this point and connect the dots among vision, passion, and leadership, the researcher conceptualized the picture in numerical terms with another respondent. Respondent 12 said that about ten persons are passionate enough to become student leaders among one hundred students. Moreover, there are two groups of student leader candidates represented. The first group is represented by those who would volunteer themselves with no external calling, and the second are those who wait for the calling. Out of ten students who are willing to take up leadership roles, seven would be waiting to receive a call and then contemplate further on their decision.

Respondent 12 was asked to elaborate and analyze the above ratio, and she pointed out that the Asian setting is an important factor. Given that Asian cultures typically value a harmonious relationship, competition is thus minimized. Hence, students may lack the courage to take up leadership roles because they believe that there are others who could do better. In addition, most of them are born and brought up in a culture where respect and seniority are emphasized, which in return shapes them into being quiet, shy, and considerate people. Even when they are qualified to be a leader, they would rather wait for a calling rather than step up for the position. With regards to this, Respondent 8 stated, "One important note is that there are students who are willing to be student leaders but to be the leader of other student leaders (the president position) makes it more challenging to find." He pointed out that the higher the chain of command, the harder it is to find a willing person. Before getting into discouraging factors, some of the encouraging factors will be addressed that help answer the question why student leaders are found despite the issues identified.

Factors that Encourage Students to Become Student Leaders

The factors below were grouped and summarized based on their similarities. The number of repeated factors from the respondents was considered the most relevant. Hence, the factors below are ranked from the most important to the least, with 1 as the most significant and 5 being the least.

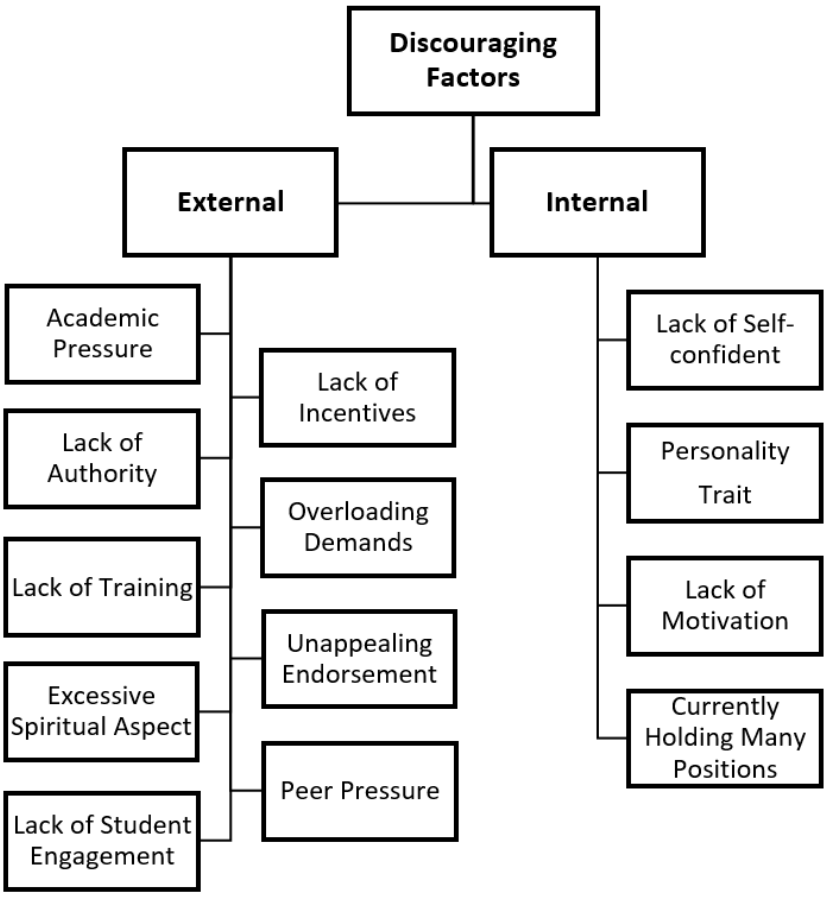
1. **Opportunity and Experiences**. Students want to grasp the opportunity to explore new sets of skills and experiences in a working environment to prepare them for future careers. Moreover, they want to discover what it is like to represent other students. They wish to make new friends—those who have the same passion and values. They also want to serve their academic community. Respondent 4 added, "The feeling of achievement after organizing any event is incredible, and it gives us a sense of pride in teamwork."
2. **Negative Inspiration**. Some students were dissatisfied with the past leadership and how they represented them. They saw flaws in the past leadership that need to be changed. They also may want to bring changes to the university, believing that they could correct particular undesirable aspects.
3. **Positive Inspiration**. Some students were inspired by past leadership. They had seen past officers doing a good job and wanted to continue their legacy. They were motivated by a series of positive factors, such as being a good representative, successfully bringing changes to the system, and bringing growth to the university.
4. **Past Leadership Achievements**. The drive and passion that some students possessed in high school propelled them into a university level of student leadership. Their previous achievements gave them gratification and boosted their morale to continue as active leaders in the university.
5. **Support from Friends and Faculty Members**. Some students had adequate support from their friends and teachers who understood them and intervened in situations where guidance may have be needed. Believing that they had strong support, students wanted to face the challenge.

When it comes to positive factors such as those mentioned above, about 90% of the sample felt that these were some of the drives that continued to ignite flames inside active students' hearts to continue carrying out their duties and satisfy the need of fulfillment. The other 10% did not agree with factor number four, as they believed it was not applicable to them.

Factors that Discourage Students from Becoming Student Leaders

Similar to the above analysis, the following data were grouped and summarized based on the commonalities. The repetitive factor was considered the most relevant. The order of importance follows from the most to the least significant. Moreover, for the discouraging factors category, two groups of factors were recognized, external and internal, as shown in Figure 1.

Figure 1 *Two Groups of Discouraging Factors*



External Factors

1. **Academic Pressure**. Surprisingly, all the respondents pointed out this factor. All respondents agreed that the main goal for students studying in the university was to finish their education. So, academic matters were on their top priority list. Most students who had the leader qualification were outstanding students with an excellent academic performance. They would rather focus on obtaining good grades than participating in extracurricular activities.
2. **Lack of Incentives**. The university relied too much on present experiences. In reality, student leaders only get a certificate that looks good for their resumes. Incentives are a valuable tool to acknowledge student leaders' work and their performances in serving the university and the student body. One of the respondents compared the student leaders' incentives to that of the dormitory Resident Assistant's (RA). Students who worked as RAs received free accommodation and a monthly allowance. Student leaders worked even harder than RAs and exerted even more force and energy to perform their duties. However, they are not compensated. They should at least receive a student labor salary. During the recruitment process each year, once the university officer identified talented people who met the leadership qualifications, the potential candidate would ask if they would be getting paid. Frequently, upon hearing that there was no payment policy, they would decline the call. Hence, some respondents felt that sometimes the university loses talented young people because they are not compensated for their hard work.

3. **Lack of Authority**. One of the respondents presented a term called hallowed empowerment, which is when students expect to have power, but do not really have the authority to accomplish what needs to be done. The university wants to empower leaders to achieve many things. They tell the students that they can do it but do not give them the authority to execute their duty fully. Due to this, students do not think that they can change anything. They do not believe that what they say or what they do will matter in the long run. Respondent 8, who was one of the former student government presidents, expressed his feelings by saying:

> There is really nothing I can do; all I'm doing right now is making sure that we have events and making sure that we are hosting that event. Other things such as campus curfew and food in the cafeteria, we can say what we want. We can even take surveys every single week. We can also make a petition. We can show evidence to the administrators. But in the end, if the answer is no, then it is no. As student leaders, we could have achieved greater things if we were given more of a say in situations that really affect the students.

4. **Overloading Demands**. Faculty and staff members widely see active students who are willing to take on positions. However, many of those students were first- and second-year students. Active students become a target for high demands. Respondent 7 provided an example. He was already part of eleven different committees by his sophomore year, which was exhausting. He said that not many student leaders could have persevered under such time pressure. Most will end up breaking themselves. Because they are so good, people want them everywhere. He concluded that "When you are a part of so many things, it burns you out, diminishing your passion for serving."

5. **Lack of Leadership Training and Transition Platform**. Many first-year students who came into the university have a fresh spirit and a passion for serving because they were active students in their high schools. Some were student government presidents. Some were class presidents. Some were head boys/girls back in school. Nevertheless, due to the lack of recognition, training, and a platform that allows them to showcase their potential, their passion for serving also dissipated.

6. **Unappealing Endorsement**. The endorsement of leadership positions is not transparent and appealing enough to interest students. The club or organization does not fully showcase or tell the students what it is like to be a leader. From the researcher's personal experience, he applied for the leadership role because the past president's work inspired him, but he hardly saw any clubs promoting or reinforcing the importance of leadership.

7. **Excessive Emphasis of Spiritual Aspects**. The leadership style that student leaders were expected to portray was thought by some to be too biblical and religious-based. They felt that the university overemphasized the spiritual side of being a leader, which may make students, especially non-Christians, feel uncomfortable in such roles. This may be the case, considering that the university enrollment statistics show that one-third of the student body is composed of non-Christians. As for Christian students, perhaps they are intimidated by the expectation to be a servant and at the same time express low expectations for extrinsic rewards while undertaking many responsibilities. This demotivated and deterred them from seeing the value of engaging in student leadership.

8. **Peer Pressure**. When it comes to applying for a position, students tend to apply if the other candidates are their friends or the people they know and are comfortable being with them. Peers may be unsupportive and discourage would-be leaders. Respondent 5 said that when he tried to apply for a position, his friends would say that he would not have the time to spend with them but would be occupied with the university work and may at some point turn his back on them. This thought created a mental block in his journey to leadership.

9. **Lack of Student Engagement**. From the leadership experiences and observations of Respondent 1 and Respondent 2, they considered lack of student support a discouraging factor. They felt that their work was not good enough to attract the student's attention despite putting effort into it. They gave the example where students were not interested to look at the promotional material before an event. During the event, not many students turned up. After the event, students did not want to give their evaluations as they saw it as a bother.

The above factors are the external factors that most respondents felt needed to be addressed, which were more than the encouragement factors. Half of the respondents felt that leadership demands sometimes were overwhelming, and it is affecting their mental capability and physical ability to execute tasks. Current leaders are going through these difficulties, and they still have to perform their duties.

Internal Factors

1. **Lack of Self-confidence and Experience—The Five Fears**. All fourteen respondents elaborated fear as a significant factor contributing to students' hesitant mindset in stepping forward to be a leader or accepting the call to be a leader (Figure 2).

Figure 2 *The Five Fears*

a). ***Fear of Responsibility***. Individuals do not want to be the person in that job. They have the skills to work as a leader, but they simply do not want to be in the position where people rely on them. Especially in student government, they think that is the highest student leader position, which carries heavy responsibilities.

b). ***Fear of Pressure***. Individuals do not want to be in the place where they are on top of the food chain. They know that they will receive immense pressure from the university and the students by being in a mediator position.

c). ***Fear of Failure***. Individuals are afraid they will fail to execute their duty as officers and will not receive support from other students, and think they do not have enough leadership experience.

d). ***Fear of Inadequacy***. Individuals fear that they lack ability to deal with difficult situations, solve problems, or bring change. They doubt that they are the right person for that job.

e). ***Fear of Ridicule***. Individuals are afraid that their pride and reputation will be harmed if they do or say something wrong. There is also a matter of the language barrier, where they are not confident about their English language skills, and they are afraid people will make fun of them when they cannot understand what they are trying to convey.

2. **Personality Type**. Among the fourteen respondents, five pointed out this factor. They believed that personality affects the drive for leadership. They categorized students into four personality types: Choleric, Sanguine, Melancholic, and Phlegmatic. The university only has a handful of choleric and sanguine students within each department who are active enough to take up the role of student

leadership; the rest were phlegmatic or melancholy. These latter two personality types are often found in introverts who would rather stay in their comfort zone, occupied only with their personal agendas.

3. **Lack of Motivation and Interest**. Individuals are simply not interested. It is not one of their objectives while at the university. They do not think it is imperative to be a part of any organization and would rather sit back and enjoy their lives, doing what they love to do.

4. **Currently Holding Many Positions**. It was observed that several science students were also officers in other clubs. Science students appeared as student leaders multiple times within their Faculty. Rarely did they take such roles in clubs or activities elsewhere in the University. The background to this is that previous student leaders from the Science Faculty decided that they should give a chance to other people even when they still wanted to be a leader.

An Additional Factor

Respondent 12 was a respected student leader with a unique background in three cultures. She moved around a lot, and was brought up in different backgrounds and cultures, such as India, Sri Lanka, and Cambodia. In addition, she spent all her academic life in international schools, where she met students from many nationalities. This made her a unique interview candidate to discuss why elected student leaders tend to be Asians rather than non-Asians? What factor can lead to discouragement among non-Asian students? Her response was:

> Non-Asians are most likely to feel intimidated because our community is primarily Asian. They might think that their leadership would be accepted in their culture but not accepted in Asia. For example, in Asia, when there is a problem, we resolve it quietly. On the other hand, non-Asians confront the problem and the person involved; however, they are afraid to practice the same here because they might voice out an opinion that would hurt people here.

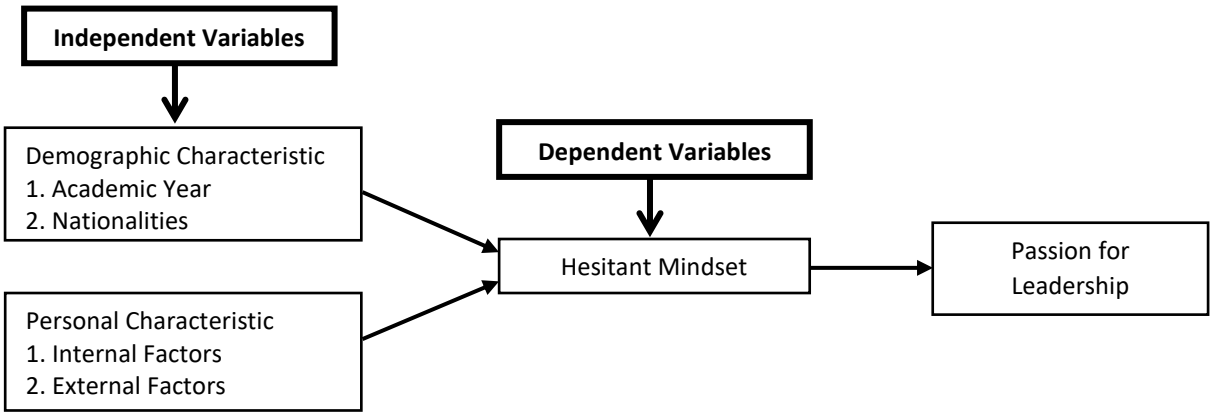
Unfortunately, due to time constraints, the researcher was unable to look into this attribute more deeply, but it is undoubtedly a point of curiosity in the study of student leadership. In addition, the researcher associated the demographic and personal characteristics as independent variables that contributed to the hesitant mind of young leaders, as displayed in Figure 3.

How Students Perceived Student Leaders

To understand from the student's perspective what they think about student leaders, the researcher asked Respondent 3 and 6 to reminisce back to when they did not hold leadership positions. They said that students regarded student leaders as an effective bridge that connected the students to the faculty and the administrators. They needed other students to relate to in time of need. They needed someone who could stand by their side and understand what they are going through. Our students rated the student leaders' effectiveness based on how well they represented them because they trusted that they knew more about them and had a more grounded approach to possible solutions to their concerns.

These are the thoughts that encouraged students to become leaders. These two respondents felt that it was crucial to be a good and active leader so that their works could be highlighted as a source of encouragement to other students.

Figure 3 *The Hesitant Mindset Model*



Perspective from Other Christian Institutions

The researcher's curiosity did not end in his current research location. He reached out to two other student leaders in two different Christian institutions to see if they faced the same challenges. He contacted two different executive officers from two different universities in the Philippines. Astonishingly, they do have the same challenges in finding new student leaders annually. They were supposed to have a new group of leaders at the end of their term in May 2021. However, the lack of applications delayed the election until October 2021.

Interestingly, the issue for them did not lie in passion. The problem lay more in qualifications, experience, time management, lack of leadership knowledge, self-doubt, and support. Most students in these two institutions had a passion for serving, but they were not qualified. In contrast, qualified people did not have the passion for serving and instead focused more on their academic and university lives. The two leaders emphasized qualifications as a critical factor in finding candidates.

Suggestions for Improvement

All the fourteen respondents made suggestions to tackle the issues identified and to make improvements in other areas. The suggestions are presented at three levels. Because student leaders' terms of office are typically only for one year, a list of suggestions for stakeholder groups was prepared rather than making a participatory action plan. It is up to these individuals whether they choose to implement and see through these suggested changes.

1. At the University Level
    a. Provide guidance and a better communication medium between itself and the students.
    b. Provide reasonable incentives and benefits to student leaders. Incentives can be varied depending on the clubs and organizations—for example:
        i. Free access to the school's facilities
        ii. Free accommodation
        iii. Student labor salary
        iv. Food allowance
    c. Convince the current student leaders first and ensure that the current team does not feel the pressure more than they are supposed to. It is essential to check their mental health from time to time.
    d. Give the student leaders more say in important matters related to the student's interests. They need to be involved in making more critical decisions.
    e. Have a regular leadership seminar to prepare students for leadership roles or have a student leadership emphasis week where student leaders are invited to speak and share their experiences.

f. Provide a platform to build students' confidence. For example, have a forum where the students can showcase their abilities. Every week, the current leaders can find what is unique about students and their talents. Then publicize them around the school. Make them feel appreciated and recognized.

2. At the Faculty/Department Level
   a. Have a department meeting where teachers and current officers can emphasize the importance of leadership before starting the new election period, not as a lecture but as a source of motivation. Refrain from organizing it in a formal and mandatory setting.
   b. Before the election or nomination, the institution should provide appropriate orientation regarding what students would be involved in as student leaders. They could provide them with a mock leadership situation.
   c. Organize a meaningful leadership camp.
3. At the Current Student Leaders' Level
   a. Organize a mentoring program to groom future leaders.
   b. When organizing activities, invite student volunteers to help manage them so they can have a picture of what it is like to be an officer.
   c. Respondent 14 said, "One of the things that inspire leadership is good leadership. Working with somebody who has accomplished something beneficial can inspire you to follow that person's example."
   d. Positive initiatives should be highlighted to show to the student body what their leaders have accomplished. Once they can see it, they might feel motivated by it. Furthermore, student leaders should be more transparent with the student body about their duties.
   e. When picking a president, start preparing the vice president to be the next president.

Limitations and Recommendations for Further Studies

Three main limitations of this study were identified. The first limitation was the difficulty in getting complete responses. Some respondents recognized sensitive areas they could not divulge and left out important details for the analysis. The second limitation involved the experiences that each student leaders had. For instance, the researcher noticed that the more experience an individual had, the more elaborated answers they could provide. Two of the respondents were alumni who had gone through different phases of leadership, which allowed them to provide detailed observations. The details and concepts they presented were different from those holding or had held two or three leadership positions. The third limitation was that the researcher served as the university student government president while conducting the study, so respondents may have hesitated in answering the questions. Recommendations for further study include a study of leadership credibility between Asian and non-Asian student leaders in the university. Another interesting study would be an investigative study of how implementing excessive religious aspects into leadership roles can discourage potential non-Christian student leaders in a faith-based institution.

Conclusion

This study was conducted to understand how students viewed the opportunity to lead, and to suggest ways to encourage young people to have the courage to occupy a leadership role. This study provided insights from fourteen respondents who saw value in helping young people see the importance of leadership and experience it even if they make mistakes or encounter barriers. The data allowed suggestions to be generated that may smooth the path enabling successful leadership experiences to be enjoyed by future students. One major insight gained was that individuals need to humble themselves to be servants and sacrifice their personal interests in order to realize their potential as leaders. In addition, passion may not be an essential variable to being a leader, but studies have shown that it undoubtedly contributes to a leader's effectiveness.

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Corporate Social Responsibility and Indonesian Stock Market Valuation

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Abstract

In this study the importance of corporate social responsibility performance was established in predicting stock market valuation of companies listed on the Indonesia Stock Exchange. Based on 237 observations from 2013 to 2018, the findings indicated a negative and significant effect of overall corporate social responsibility performance on stock market valuation measured by Tobin's Q. The market considered corporate social responsibility as a costly activity that can reduce company profits, thereby reducing shareholders' wealth. Furthermore, considering the different categories of corporate social responsibility, the findings showed a negative and significant effect of the community category on stock market valuation. This indicated that the market was not convinced that investing in the community can have a profitable impact. The effectiveness of community service activities was doubted by the market. Meanwhile, the three other categories, namely, employee, environment, and governance did not have a significant effect on stock market valuation. This could be related to investors' view that corporate social responsibility activities were conducted just to comply with legal and regulatory requirements rather than motivated by a sense of responsibility or ethical behavior.

Keywords: *Corporate social responsibility, Indonesia, market valuation, Tobin's Q*

Introduction

In August 2007, the Indonesian government enacted a corporate social responsibility (CSR)/ sustainability law, mandating that companies in energy and extractive industries disclose their CSR activities. However, after 10 years had passed, the implementing regulations had not been issued, thus making it unenforceable. Even so, companies in Indonesia are implicitly aware that doing good for society may create a competitive advantage for them, and voluntary CSR implementation is carried out by many national and multinational companies in Indonesia. Increased awareness about CSR in the country has resulted in program progress and collaboration in various sectors. Therefore, CSR in Indonesia is expected to reach even higher levels soon (Phuong & Rachman, 2017). While CSR has been an important issue in developed countries for decades, it has just recently become a concern in emerging markets (Cheng et al., 2016)

Studying CSR in the Indonesian context is relevant as foreign investors are interested in investing in Indonesia (Ekberg et al., 2015), but the issue of distinguishing between mandatory or voluntary CSR investment remains. The Law of the Republic of Indonesia No. 40 (2007) Article 74 on Limited Liability Company Law states that companies engaged in extracting natural resources are obliged to implement social and environmental responsibility; if they fail to do so, they will be subject to sanctions. On the other hand, the Law of the Republic of Indonesia No. 25 (2007) Article 15 states that while investors without exception are obliged to implement corporate social responsibility, no sanctions are declared if companies fail to implement it. Meanwhile since 2007, CSR has become an increasingly important issue (Waagstein, 2011). Currently, Indonesia does not have a mandatory manual for CSR. Therefore, companies in Indonesia carry out their CSR programs according to their own discretion, and it is difficult to measure their level of successful implementation (Gayo & Yeon, 2013). The implementation is often not on target due to a lack of clear guidelines to meet society's needs. The Limited Liability Company Law, lacking sanctions and supervisory mechanisms, fails to provide legal clarity and certainty (Andrini, 2016). Moreover, recent changes in the meaning of CSR for investors has further

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complicated matters. Neverthesless, CSR has become an integrated part of how company business operations, and it impacts what they do for customers, employees, and society at large (Kyriakou, 2018).

As investors have become more cautious, they have become more concerned about the importance of CSR (Kyriakou, 2018). In America, 83% of professional investors are more likely to invest in the stocks of companies known for their social responsibility; CSR initiatives are taken as an indicator of greater transparency and honesty in operations and financial reporting, resulting in lower risk (Holmes Report, 2016). Kyriakou (2018) noted, however, that there was a slight difference in the meaning of CSR for investors depending on different perspectives in regard to a company's CSR activities, even though the bottom line was the same. This difference in CSR meaning is important.

Environmental and community welfare issues are covered by the CSR concept in the Law of the Republic of Indonesia No. 40 (2007). Law No. 25 (2007) concerning investment explains that every investor is obliged to apply the principles of good corporate governance, continue to create harmonious, balanced relationships, and take into consideration the environment, values, norms, and culture of the local community. Law No. 13 (2011), Article 41, Paragraph 3 addresses requirements for business actors that provide environmental development funds as a form of social responsibility for the poor (Law of the Republic of Indonesia No. 13, 2011). Article 4, Paragraph 1 of Government Regulation No. 47 (2012) addresses social and environmental responsibilities implemented by the Board of Directors based on a company's annual work plan after obtaining approval from the Board of Commissioners or general meetings of shareholders in accordance with its articles of association, unless otherwise specified in statutory regulations (Government Regulation of the Republic of Indonesia No. 47, 2012).

In previous articles (Deloitte, 2011; Holmes Report, 2016; Kyriakou, 2018), another point suggested that is relevant to this study is the helpfulness of investigating the extent to which corporate social responsibility performance can predict stock market valuation. The selection of a stock market valuation variable was motivated by Alajlani and Posecion's (2018) recommendation. They argued that investors should have practical knowledge and experience in terms of stock market valuation, and must be guided to invest appropriately in stocks with a sound market value. As suggested by Davidson et al. (2002), Tobin's Q is just such a measure, and it has an important role as a future market performance indicator. Therefore in this study, Tobin's Q was used in measuring stock market valuation.

Existing studies on CSR in the Indonesian context have generally focused on such issues as the specific industry classification, different indicators of CSR, and relationships between CSR and various types of company performance (e.g., Aditya & Juniarti, 2016; Afiff & Anantadjaya, 2013; Angelia & Suryaningsih, 2015; Hendarto & Purwanto, 2012; Natanagara & Juniarti, 2015). They have documented different effects of CSR on performance. Aditya and Juniarti (2016), for example, investigated the Miscellaneous Industry category of the Indonesia Stock Exchange (IDX), and showed that CSR performance measured by the Global Reporting Initiative Index had no significant effect on accrual quality. Afiff and Anantadjaya (2013) studied three types of CSR performance (employee, environmental, and community) derived from the management reports of 13 selected firms from the LQ45 over the period from 2004 to 2011. They found that both employee and community indicators had a significant negative effect on stock prices. Angelia and Suryaningsih (2015) reported a significant positive effect of the environmental dimension on return on assets and return on equity of 17 companies using a Performance Rating Program in Environmental Management, or PROPER participant companies. Using content analysis, Hendarto and Purwanto (2012) reported that voluntary CSR activities by companies led to positive abnormal returns being gained. Based on 120 observations in the chemical, cement, ceramic, and plastic industry from 2009 to 2013, Natanagara and Juniarti (2015) found that CSR disclosure, as measured by the Global Reporting Initiative Index, significantly affected a firm value's as measured by Tobin's Q. The implementation of CSR is considered positive by shareholders because it reduces the risk of conflict with communities. On the other hand, it also has the potential to improve the company's reputation in the eyes of customers, resulting in increased

sales and profits. The increase in profit leads to higher shareholder returns, which in turn leads to higher stock prices and firm value.

In this study, contributions to the literature were sought in several areas. First, in line with Friedman (2007) and Krüger (2015), it was contended that the stock market in Indonesia reacts negatively to high CSR performance. Second, Bajic and Yurtoglu (2018) claimed that using only a single aspect in CSR measurement and ignoring various other measures can lead to inaccurate conclusions. Therefore, in addition to the overall measure of CSR performance, four different categories of CSR were considered in this study, specifically, community, employees, environment, and governance categories based on CSRHub ratings in predicting stock market valuation as measured by Tobin's Q. Third, several company aspects are most likely related to the Q value. Accordingly, the following control variables were included to minimize omitted variable bias, in particular age, size (Ghafoorifard et al., 2014), and leverage (Ararat et al., 2017). Lastly, considering CSR ratings, the results obtained in this study could help regulators, policy makers, and management of public companies to have better insights on the importance of CSR practices in predicting stock market valuation in Indonesia. This study was based on financial data collected from the Thomson Reuters database and CSR data from the CSRHub database.

In the next part of this article, a brief literature review is given and several hypotheses are stated.

Literature Review, Conceptual Framework, and Hypotheses Proposed

Corporate Social Responsibility

An important part of current company evaluation is based on their CSR, which has become a new metric of corporate performance (Chung et al., 2018). CSR is defined as a process to help achieve sustainable development in society by treating stakeholders within and outside an organization in an ethically acceptable manner according to international norms while maintaining profitability or integrity. Social responsibility includes economic, financial, and environmental factors (Hopkins, 2014). It must be an important component of the organization's operating ethos, values, and goals. Every organization must implement CSR (Pontefract, 2017); it is an integrated part of the way companies are now expected to operate. As part of their business operations, companies need to show what they do for customers, employees, and the wider community, and this is an international phenomenon (Kyriakou, 2018). A survey conducted by Deloitte (2011) to review CSR awareness of Polish investors, for example, concluded that a growing number of companies implemented CSR strategies as part of their business strategies. Investors tend to perceive that CSR is a business risk mitigation tool, and this trend is expected to increase. Corporate social responsibility can also be significant in an emerging economy, such as Dubai, where it positively impacted employee commitment (Rettab et al., 2009). Not surprisingly, it figures prominently in the United States (Maignan et al., 1999). Moreover, a company's commitment to implementing CSR results in consumer satisfaction and trust that encourages customers to remain loyal (Maignan et al., 1999; Park et al., 2017). Thus, practicing CSR does not constitute a cost, but rather can be viewed as a means to maintain profits.

Ethical theories recommend that CSR activities be promoted simply because these are the right things to do (Garriga & Melé, 2004). In relation to this, Kim et al. (2012) contended that CSR performance reflects ethical interests, and Muttakin et al. (2015) stated that CSR activities must be performed for the stakeholders' benefit. In legitimacy theory, it is argued that companies operating in society must be involved in social activities to provide welfare for society, and in exchange receive benefits provided by society (Guthrie &Parker, 1989). In stakeholder theory it also is asserted that the market reacts positively to socially responsible companies (Cordeiro & Tewari, 2015; Karim et al., 2016).

Stock Market Valuation

Previous researchers have used many indicator to measure stock market valuation, but an impressive set of studies has considered Tobin's Q as an important measure of stock market valuation.

Chung et al. (1998) found that the Q ratio measured marginal profitability of a firm's investment opportunities, and Fell (2001) contended that Tobin's Q has a strong macroeconomic basis and was highly reliable as a predictor of future stock price trends. It has been used as a variable to explain real investment activity. Similarly, Davidson et al. (2002) concluded that Tobin's Q has an important role as an indicator of future market performance. Alajlani and Posecion (2018) used this indicator as a measure of market valuation due to its relationship with investment valuation that indicates investment performance. Saji (2019) observed that Tobin's Q is a good measure of a firm's intrinsic and market valuation.

Conceptual Framework (CSR and Stock Market Valuation)

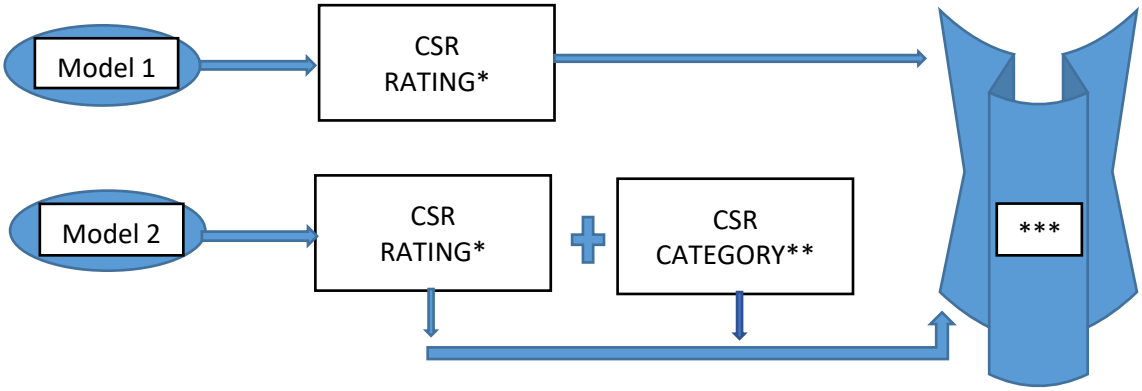
Earlier studies have reported on the relationship between various measures of CSR and financial performance (e.g., Angelia & Suryaningsih, 2015; Erhemjamts et al., 2013; Katsikides at al., 2016; Wang, 2011). Specifically, in a study of 17 Indonesian companies that were participating in the PROPER program, Angelia and Suryaningsih (2015) found evidence that enrivonmental issues had a significant effect on both return on assets and return on equity for gold ratings. By decomposing the KLD index (developed by Kinder, Lydenberg, Domini & Co., Inc.) into strengths and concerns components, Erhemjamts et al. (2013) found that the relation between CSR strengths and firm's performance measured by Tobin's Q and return on assets was positive. An event study conducted by Katsikides at al. (2016) looked at two events from the oil industry (BP and Exxon oil spills) and three ethical problematic events involving the banking industry (HSBC-money laundering; Barclays and Royal Bank of Scotland-LIBOR interest rate scandals). These industries were at the forefront of criticism related to their CSR. The results of the study indicated that other than the HSBC money laundering, all CSR events had a significant effect on stock market performance measured by abnormal returns. A study by Wang (2011) aimed to determine the impact of fulfilling CSR on corporate stock performance using a sample from Taiwan publicly listed firms during the period from 2001 to 2009. The CSR index was constructed based on three dimensions (economic, social, and environmental), while corporate stock performance was measured by stock returns. The findings implied that implementation of CSR does not always result in additional costs, but investors may appreciate socially responsible firms due to their better corporate image, and this can have a positive impact on stock returns.

Using the three aspects of CSR (i.e., environmental, social, and corporate governance) taken from Thomson Reuters ASSET4 database of 23,803 firm-years from 35 countries during 2003 to 2016, Bajic and Yurtoglu (2018) showed that the social aspect was the only one that consistently predicted a firm's market value measured by Tobin's Q. Environmental and governance aspects had no consistent predictive value. Chung et al. (2018) examined the impact of CSR on a firm's value in Korea using the Korea Economic Justice Institution Index (KEJI Index). They found that CSR activities positively affected a firm's value. Further analysis on the components of the KEJI Index showed that variables such as soundness, fairness, and environmental responsibility had a significant effect on a firm's value in the case of the manufacturing industry, but not in other industries.

Omar and Zallom (2016) focused on four CSR activities: environmental, human resources, community, and products reported on the annual reports of listed companies on the Amman Stock Exchange in Jordan to evaluate the CSR effects on market value as measured by Tobin's Q. They showed that environmental, community, and products decreased market value. Furthermore, human resources had no effect on market value in the food and beverage industries. This negative effect of environmental activities on market value might have been caused by companies not complying with applicable laws, therefore resulting in a negative reaction from the market. Another possible reason for lower market valuations could be that CSR activities involve costs, thus worsening a company's competitive position. Poor employee awareness of CSR could lead to no effect of human resource activities being observed on market value. For the pharmaceutical and medical industries, community activity decreased market value, but the other three activities had no effect. In the chemical industry, none of the four activities had a significant effect on market value.

The conceptual framework generated from the review of the literature and adopted for the present study is illustrated in Figure 1.

Figure 1 *Conceptual Framework Used in the Present Study*



*CSR, Fage, FLev, FSize. **Community, Employee, Environment, Governance.
***Stock Market Valuation

Hypotheses of the Study

The existing literature indicates that stakeholders have more confidence in and give more support to socially responsible companies. Companies that expend effort and resources on CSR are considered more trustworthy (Gao et al., 2014, Kim et al., 2012, Lins et al., 2017). Consequently, public acceptance is expected to increase company value. Therefore, Lins et al. (2017) contended that compared to firms with a low level of social responsibility, firms with high CSR experienced higher sales, profitability, and growth. Chung et al. (2018) concluded that CSR activities positively affected company value. Furthermore, Chen and Wang (2011) contended that CSR activities not only improved current period performance, but also subsequent performance. These arguments are in line with legitimacy theory (Guthrie & Parker, 1989), and are confirmed by stakeholder theory (Cordeiro & Tewari, 2015; Karim et al., 2016). However, other authors have argued differently. Madorran and Garcia (2016) found no clear relationship between CSR and financial performance in a Spanish case, whilst Friedman (2007) contended that CSR activities were costly and actually decreased profit. Similarly according to Krüger (2015), CSR is a costly investment that gives benefits to managers and/or other stakeholders at the expense of shareholders. Thus, investors may react negatively to positive news about CSR. The main problem identified by Bartlett and Preston (2000) was that organizational mechanisms were designed to generate profits, and did not factor in interests for the benefit of society. Hence, the following hypotheses were proposed for this study:

H_{1a}: CSR performance significantly predicts stock market valuation.
H_{1b}: The community category of CSR performance significantly predicts stock market valuation.
H_{1c}: The employee category of CSR performance significantly predicts stock market valuation.
H_{1d}: The environment category of CSR performance significantly predicts stock market valuation.
H_{1e}: The governance category of CSR performance significantly predicts stock market valuation.

Methodology

Data Used

Financial data required for this study were derived from the Thomson Reuters database, and industry classification was based on the Global Industry Classification Standard. The CSR-related data came from the CSRHub database, which provided corporate sustainability ratings and information for firms around the world. This study focused on companies listed on the Indonesia Stock Exchange that were also found in the CSRHub database. The final sample was an unbalanced panel of 237 firm years with CSR data from 2013 to 2017, and financial data from 2014 to 2018.

Data Analysis

The independent variables were measured by each firm's overall CSR rating and the four categories of CSR according to CSRHub, namely, community, employee, environment, and governance. Stock market valuation as a dependent variable was measured by Tobin's Q following a previous study by Downs et al. (2016). Tobin's Q is calculated as the market value of equity minus the book value of equity plus total assets scaled by total assets. Several firm characteristics are probably related to Tobin's Q; therefore, the following set of covariates were included in this study to minimize omitted variable bias. Ghafoorifard et al. (2014) discovered that age and size had a significant relationship with Tobin's Q. Age was measured by the number of years since listing, and size was measured by a firm's total assets. Total assets was also the denominator of Tobin's Q. Ararat et al. (2017) showed that leverage had a positive effect on firm value. Leverage is measured by total debts scaled by total assets; leverage and Tobin's Q both use the same denominator. The year (dummy variable) was adopted to control for year fixed effects, and the industry (dummy variable) was added to control for possible industry-level effects. The regression equations for the two models were as follows:

$$SMV_{i,t} = \beta_0 + \beta_1 CSR_{i,t-1} + \beta_2 FAge_{i,t-1} + \beta_3 FLev_{i,t-1} + \beta_4 FSize_{i,t-1} + Year_{+} Ind + e \text{……. ……..} \quad \text{(Model 1)}$$

$$SMV_{i,t} = \beta_0 + \beta_1 Community_{i,t-1} + \beta_2 Employees_{i,t-1} + \beta_3 Environment_{i,t-1} + \beta_4 Governance_{i,t-1} + \beta_5 FAge_{i,t-1} + \beta_6 FLev_{i,t-1} + \beta_7 FSize_{i,t-1} + Year + Ind + e \text{……..} \quad \text{(Model 2)}$$

The dependent variable of the first model was the stock market valuation measured by Tobin's Q. The independent variable was the overall CSR rating, and control variables were firm age, leverage, and size as determinants of stock market valuation, as well as year and industry-level effects. The second model was constructed to examine the effects of different CSR categories on stock market valuation. The dependent variable was stock market valuation measured by Tobin's Q. The independent variables were the four categories of CSR, namely, community rating, employee rating, environment rating, and governance rating, along with the same control variables used in the first model.

Results and Discussion

Model 1 and Model 2 were assessed according to their respective statistical behaviour.

Model 1

Table 1 shows the regression results relevant to testing hypothesis H_1a, which was to examine whether the overall CSR rating significantly predicted Tobin's Q for all 237 observations. In line with prior studies (Friedman, 2007; Krüger, 2015), the findings on Model 1 indicated a negative and significant effect of overall CSR rating on Tobin's Q ($\beta = -.042$, $p < .05$). Thus, H_1a was supported by the result of the first research model. However, this result contradicted the claims made under stakeholder theory that the market reacts positively to socially responsible companies (Cordeiro & Tewari, 2015; Karim et al., 2016). This suggested that for this sample of companies, the Indonesian stock market reacted negatively to a high level of CSR performance. If the sample chosen is the basis for generalization, then market participants consider CSR as costly activities that can reduce a company's profits, thereby reducing shareholder wealth.

Firm age, on the other hand, had a positive and significant effect on Tobin's Q. The results showed that according to Model 1, the firm age as a control variable had a significant effect on stock market valuation, and the positive coefficient indicated that stock market valuation was higher for older firms. This is consistent with the data of Ghafoorifard et al. (2014). However, leverage and size had no significant effect on stock market valuation. These results were not consistent with those obtained by Ararat et al. (2017) and Ghafoorifard et al. (2014).

Table 1 *Overall CSR Performance and Stock Market Valuation*

Variable	Unstd. Coeff β	Std. Coeff. β	*p*-value
(Constant)	5.398		.170
CSR	**0.042**	**-.106**	**.036**
FAge	0.099	.269	.000
FLev	-1.111	-.105	.113
FSize	-0.100	-.038	.556
Year Dummy	Included		
Industry Dummy	Included		
Adjusted R^2	0.538		
F-value	12.006		
Sig. (*F*)	.000		
Dependent Variable	Tobin's Q		

Note. *N* = 237; CSR (overall CSR rating); FAge (number of years since listing); FLev (total debts scaled by total assets); FSize *(*natural logarithm of firm's total assets)

Model 2

Table 2 shows the regression results relating to different categories of CSR performance. The results show that H_{1b}, which stated that the community category of CSR performance significantly predicts stock market valuation, was supported (β = -.046, $p < .05$). This finding was consistent with the data of Omar and Zallom (2016), who suggested that community activity may decrease market value. This implies that the stock market in Indonesia in general consider that investment in the community is costly, and does not provide benefits to shareholders. Therefore, the market responded negatively to the community category of CSR performance. However, the empirical results showed that H_{1c}, H_{1d}, and H_{1e} were not supported. Although the coefficient relevant to employees was positive, and the coefficients for both environment and governance factors were negative, the results were not significant ($p > .05$). Hence, employee, environment, and governance ratings were not significant factors in predicting stock market valuation. These results are supported by previous studies (Omar & Zallom, 2016; Chung et al., 2018; Bajic & Yurtoglu, 2018). In the context of the food and beverage industry, human resources would appear to have no effect on market value as measured by Tobin's Q, and none of the four CSR activities significantly affected the Q value in the chemical industry (Omar & Zallom, 2016). Furthermore, the environmental aspect had a significant effect only on Tobin's Q in the case of manufacturing, but not in other industries in the study of Chung et al. (2018). Additionally according to Bajic and Yurtoglu (2018), environment and governance aspects could not predict the Q value consistently.

The findings of this study for Model 2 showed that both age and leverage significantly predicted stock market valuation ($p < .05$), whereas size was insignificant in predicting stock market valuation ($p > .05$). The results agreed with those found by applying Model 1: that is, age predicted stock market valuation positively. However, this result was not consistent with that of Ararat et al. (2017). The negative coefficient of leverage on stock market valuation found in the present study indicated that the market reacted negatively to higher debt levels due to the higher risk taken. Firm size did not significantly predict stock market valuation. This was not consistent with the study of Ghafoorifard et al. (2014).

Table 2 *Four Categories of CSR Performance and Stock Market Valuation*

Variable	Unstd. Coeff β	Std. Coeff. β	*p*-value
(Constant)	6.740		.090
Community	**-0.046**	**-0.167**	**.043**
Employee	0.020	0.079	.166
Environment	-0.004	-0.014	.855
Governance	-0.005	-0.017	.764
FAge	0.090	0.245	.000
FLev	-1.615	-0.153	.029
FSize	-0.144	-0.054	.403
Year Dummy	Included		
Industry Dummy	Included		
Adjusted R^2	.547		
F-value	11.188		
Sig. (*F*)	.000		
Dependent Variable	Tobin's Q		

Note. *N* = 237; Community (CSR community rating); Employee (CSR employee rating); Environment (CSR environment rating); Governance (CSR governance rating); FAge (number of years since listing); FLev (total debts scaled by total assets); FSize (natural logarithm of firm's total assets)

Summary of Findings

The results showed that overall CSR activities are viewed negatively by the market in Indonesia. This could be due to the lack of market confidence in the implementation of CSR in Indonesia because, as Gayo and Yeon (2013) have argued, Indonesia does not yet have a CSR standard manual, clear sanctions, or control mechanisms. Thus, companies in Indonesia carry out CSR activities according to their own respective policies, making their level of success difficult to measure. The negative effect of the community category on stock market valuation indicates that the market is still not convinced that investing in the community can have a profitable impact. The effectiveness of community service activities is doubted by the market. As argued by Andrini (2016), there are no clear guidelines to meet society's needs; thus, the implementation often does not reach the right target. Further, the results showed that the three categories of CSR performance, namely, employee, environment, and governance do not significantly predict stock market valuation. This may be due to investors' view that CSR activities are conducted just to comply with legal and regulatory requirements. They are not motivated by a sense of responsibility and ethical behavior. Thus, stock market valuation is unaffected by the rating, whether it is high or low.

Conclusions

This study examined the importance of corporate social responsibility performance in predicting stock market valuation of companies listed on the Indonesia Stock Exchange. In prior studies Tobin's Q was used, with CSR, as a predictor variable of stock market valuation. The CSR data were collected from various sources. Bajic and Yurtoglu (2018) observed USA, Japanese, UK, and European firms from the ASSET4 database of Thomson Reuters, while Chung et al. (2018) evaluated Korean firms from the KEJI Index, and Omar and Zallom (2016) investigated Jordanian firms from the Amman Stock Exchange. No previous study had utilized CSR ratings and stock market valuation (Tobin's Q) from the CSRHub database, with financial data from Thomson Reuters database and using the Global Industry Classification Standard for industry classification. Thus, this study tried to fill the gap, specifically in the Indonesian context.

This study's findings contribute to the literature by revealing that the stock market in Indonesia reacts negatively to high overall CSR performance, and responds negatively to the community category as well. In addition, this study provides insights to investors, policy makers, regulators, and to corporations on the management of public companies in Indonesia. Investors in Indonesia must be convinced of the importance of CSR awareness as argued by legitimacy theorists. The perspective

promoted by the theory is that companies operating in society must be involved in sharing goodness with society, and in return will get benefits provided by society. A firm's social responsibility efforts may increase firm value, as they ensure firm legitimacy. Hence, policymakers and regulators should re-evaluate laws and regulations governing CSR implementation, paying special attention to the mechanisms, sanctions, and controls. Moreover, the market must be convinced of an implementer's conformity with applicable regulations, as well as their effectiveness.

Recommendations

This study has potential limitations. First, only one country–Indonesia–was considered. Because cultures differ across countries, CSR policy and implementation differ from one country to another. Future studies might compare the impact of CSR performance on stock market valuation between countries in emerging economies. Second, this study was limited to the four main categories from the CSRHub database. Future studies could investigate the full range of twelve subcategories provided by CSRHub. Third, this analysis used only Tobin's Q as a measure of stock market valuation. Hence, it might be useful to add other market measures (e.g., price to earnings ratio and dividend yield).

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The Causal Influence of Student Activity Participation and Learning Outcomes on Fulfillment of Student Academic Goals

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Abstract

The purpose of this research was to examine the direct and indirect causal influence of activity participation and learning outcomes, according to the National Qualifications Framework for Higher Education, on fulfillment of academic goals by international university students. Data were collected by using a questionnaire from 315 international university students. The data showed that the research conceptual framework and the empirical data were consistent with the rigorous conditions nominated. The findings showed that participation in student activities had a direct influence on the National Qualifications Framework for Higher Education learning outcomes, while the learning outcomes had a direct influence on fulfillment of students' academic goals. Recommendations were made, as well as suggestions for future research.

Keywords: *Student participation, National Qualifications Framework, academic goals*

Introduction

The promulgation of the 1999 National Education Act, amended (No. 2) in 2002 and (No. 3) in 2010, had an impact on education reform in Thailand at all levels, and was responsible for changes in the public administration system. A heavy emphasis was placed on curriculum improvement and changing teaching methods to develop students' thinking and problem-solving skills, as well as the development of Thai academic values and culture. Tertiary institutional standards were raised by this law, which also allowed public educational institutions to operate more independently and develop their management systems more flexibly. While providing them with academic freedom, it maintained supervision by the Council of Educational Institutions according to the laws governing the establishment of such educational institutions.

The Act included a Standard Qualification Framework and guidelines for compliance with the National Qualifications Framework for Higher Education. The Ministry specified learning outcomes for higher education in Thailand, namely, that learning includes behavioral changes that students develop based on experiences gained during their course of study. Learning outcomes were expected from graduates in at least five areas: ethics and morals; knowledge; cognitive skills; interpersonal skills and responsibility; and numerical analysis, communication, and information technology skills (Office of the National Education Commission, 2009). Insisting that higher educational institutions achieve these qualities would increase society's confidence in graduates' qualifications after completion of their studies (Inghamarathon & Phokaisawan, 2019). These learning outcomes are intended to become integral parts of a student's life, and are essential to their development as well-rounded adults.

Extra-curricular activities provide opportunities for students to develop their decision-making abilities, improve their personalities, and acquire skills in becoming a leader and a good follower. Such student activities must set clear and concise objectives for the activities so as to optimize their usefulness (Seenuansung, 2016). Four categories of student activities were specified, namely; sports activities, activities for preserving arts and culture, academic activities, and service activities. Participation in service to others encourages students to have a broader vision and practical experiences in job creation, and enhances societal welfare through recognition of the need to sacrifice for the common good and build a readiness for future occupations (Nhusawi, 2010). These goals are accomplished by encouraging students to carry out various activities promoting national social development with quality, efficiency, and effectiveness. This enables students to grow in intelligence and thinking ability in a safe environment, developing good attitudes, values, decision-making ability

and emotional control. By learning to be responsible to themselves and to the surrounding society, they may become good followers and leaders who are respected by those around them and can work with others successfully (Thoumthongthawin, 2009).

Several past researchers have studied student participation in activities and learning outcomes specified by the National Qualifications Framework for Higher Education. However, there is a lack of information on the influence of student participation on achievement of these learning outcomes and on fulfillment of student academic goals. Therefore, the focus of this research was to study the causal influence of student activity participation (sports, activities for preserving arts and culture, academic activities, and service activities) on the five previously mentioned learning outcomes (ethics and morals, knowledge, cognitive skills, interpersonal skills and responsibility, numerical analysis, communication, and information technology skills). It also examined the fulfillment of the academic goals of a selected group of international university students. This study's findings may be used by administrators and those involved in planning, revising, improving, and suggesting guidelines for developing student activities that promote these learning outcomes. They may also assist student efforts to fulfill their academic goals by motivating them to develop these essential skills and achieve their potential, both in their professional careers and in their personal lives in the future.

Objectives of the Research Study

To analyze the direct and indirect causal influences of activity participation and learning outcomes (according to the National Qualifications Framework for Higher Education) on fulfillment of student academic goals in a selected group of international university students.

Research Hypothesis

1. Participation in student activities has a direct influence on the fulfillment of student academic goals of international university students.
2. Participation in student activities has a direct influence on the learning outcomes specified by the National Qualifications Framework for Higher Education.
3. These learning outcomes have a direct influence on the fulfillment of the academic goals of international university students.
4. Participation in student activities has an indirect influence, through the transmission of learning outcomes, on fulfillment of the academic goals of international university students.

Literature Review

Participation in Student Activities

Phanuegrum (2014) defined student activities as the events jointly organized by students and educational institutions that meet student needs and interests. Activities must be suitable, useful, and helpful in creating hands-on experiences for students in addition to regular classroom learning in order to develop graduates who are complete, possessing academic learning, professional training, physical health, and life skills. The activities must be supported by the educational institution or extracurricular activities organized by students to enhance their ability to understand themselves and society better. The Higher Education Commission established Student Activity Standards in 1998 as guidelines for organizing beneficial and good quality activities to meet student needs. These activities are divided into four categories as follows: a) Sports Activities (SA1), activities aimed at developing students physically and mentally, so that they will have strong bodies and learn good sportsmanship; b) Arts and Culture Preservation Activities (SA2) that are aimed at enhancing students' knowledge and experiences in the areas of arts and culture; c) Academic Activities (SA3), which are extracurricular activities that increase students' academic knowledge and experience; and d) Service Activities (SA4) conducted by students to help others or to build permanent public or community facilities that will improve the local residents' quality of life. All of these activities are part of an educational process that the university provides to allow students to get to know each other better. They also allow student to discuss and consult about how to carry out these beneficial activities, and a teacher is

available to help supervise and give advice. This strategy is used to facilitate the effective organization of student activities, and to ensure that experience is gained from them which are necessary and useful for their future contribution to society. Modern societies demand skillful graduates who are well-trained, with academic knowledge, professional and life skills, otherwise graduates are not considered well-trained (Sukomol, 2000).

Learning Outcomes According to the National Qualification Framework for Higher Education

The National Qualification Framework for Higher Education defines the expected learning outcomes of graduates (Office of the National Education Commission, 2009; Inghamarathon & Phokaisawan, 2019). They are expected to have skills in at least these five areas as follows: (a) moral and ethical aspects (TQF1)—being able to deal with moral, ethical and professional issues using the basic values of discretion, empathy, and professional ethics; this includes behaviors such as discipline, responsibility, honesty, sacrifice, being a good role model, understanding others and the world, etc.; (b) knowledge (TQF2)—a wide and systematic knowledge of the principles and theories in one's field. For professional courses, there should be an advancement of specific knowledge in the field, and an awareness of current research related to problem-solving and knowledge enhancement. For professional courses that focus on gaining practical experience, it is important to be aware of customs, rules, and regulations that change according to the situation; (c) cognitive skills (TQF3)—being able to find facts, understand them, and evaluate information, new ideas, and evidence from a variety of sources. This information may then be used to work on their own, study relatively complex problems, and suggest creative solutions by taking into account theoretical knowledge, practical experience, and the impact of decisions. These skills and a thorough understanding of academic and professional subject matter may be applied to routine practices and to find new and appropriate ways to solve problems; (d) interpersonal skills and responsibility (TQF4)—contribute to and facilitate creative solutions to problems that arise within a group in which one is a leader or a member. This includes being able to show leadership in unclear situations that require innovative solutions, taking the initiative to analyze problems appropriately individually or in a group, and being responsible for continuous learning, as well as personal and professional development; and (e) numerical analysis, communication, and information technology skills (TQF5)—being able to study and understand the relevant issues, being able to choose and appropriately apply relevant statistical or mathematical techniques in education, to conduct research and suggest solutions to problems, being able to use information technology skills to collect, process, interpret and present information, being able to communicate effectively in both speaking and writing, and being able to choose a style of presentation that is suitable for different groups of people.

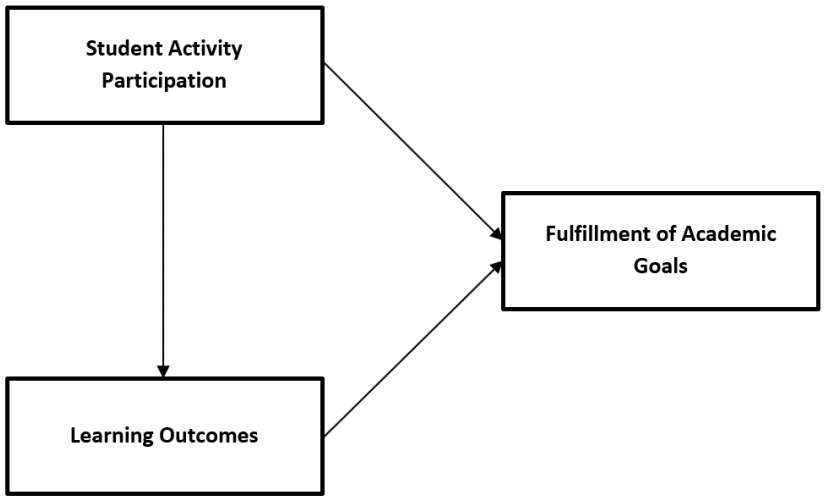
Fulfillment of Students' Academic Goals

Fulfillment of student academic goals refers to the level of individual expectations that are achieved by taking courses, studying in one's chosen major, or applying knowledge, skills, and experience based on student life in a higher educational institution (Petcharak et al., 2012; Kerdnaimongkol et al., 2013). Fulfillment of student goals also refers to the knowledge gained or skills developed by educational institutions in other environments that enable students to succeed in their study programs by relying on their unique individual abilities (Research Committee of Ramkhamhaeng University, 2013). For students to be successful in their studies, many factors are involved, which include the students themselves, their environment, teachers, and the institution's learning atmosphere. According to Charungdechakul (2011), graduation means completing the number of credits according to the curriculum and that have been approved by the University Council. Graduation may be within the time specified by the program, or more time may be taken than that specified for the course. Sawatdipong (2003) gave the meaning of academic achievement as the knowledge gained or skills that are developed in learning various subjects. Achievement is usually determined by the performance score or from both the knowledge and skills developed. Achievement

in learning, which is generally measured for that purpose, must rely on the cooperation of all parties involved in this matter.

Participation in student activities and the learning outcomes established in the National Qualification Framework for Higher Education have been the focus of past studies. Therefore, the present researchers were interested in examining the influence and relationships among the variables. Hence, the conceptual framework adopted in this research consisted of three variables: Participation in student activities (sports, activities for preserving arts and culture, academic activities, and service), the specificed learning outcomes (ethics and morals, knowledge, cognitive skills, interpersonal skills and responsibility, and numerical analysis, communication, and information technology skills), and fulfillment of student academic goals among selected international university students. Details are shown in Figure 1.

Figure 1 *The Conceptual Framework Used in the Study*



Research Methodology

Population and Sample

The population used in this study was 918 Asia-Pacific International University students in Muak Lek District, Saraburi Province (Office of the Registrar and Student Admissions, 2021). A conditional sampling method was used followed by data analysis, using structural equations. Hair et al. (2014) indicated that a sample size of 200 or more would be adequate. Kline (2011) stated that the sample size should be at least 200 or five times the number of the questions. There were 10 observable variables, and 48 survey questions were developed to measure these variables. Hence, the sample size should not be less than 240 (48 questions x 5). From the data collected, it was found that a total of 315 respondents answered all the questions. Therefore, the sample size satisfied the data analysis conditions specified for structural equations.

Research Tools

The researchers looked at other studies related to student participation, learning outcomes, and fulfillment of the academic goals of international university students. Then a questionnaire was developed with open-ended and closed questions divided into three parts as follows:

Part 1: Questions were about general information relating to the students. This involved a checklist of seven questions, and the student chose the answer that best matched their circumstances. The details of the data collected was as follows: Nominal scale data including gender, Faculty of study, Program of study, and ethnicity. Ordinal scale data included age, year of study, and cumulative grade point average.

Part 2: Organized in two sections as follows—Section 1 contained 20 questions about participation in student activities that were developed and adapted from past research, namely,

Rubama et al. (2019) and Rungruengkulwanich (2020). Section 2 had 23 questions about learning outcomes that were developed and adapted from previous studies (Kheewwat et al., 2015; Intaranongpai & Kotchakot, 2017). Part 2 of the questionnaire consisted of closed-ended questions that used a Likert scale. Measurements were on an Interval scale with five levels: Level 5–*Most Strongly Agree*, Level 4–*Strongly Agree*, Level 3–*Moderately Agree*, Level 2–*Slightly Agree*, and Level 1–*Minimally Agree*.

Part 3: Questions were about the fulfillment of the academic goals of international university students, which were developed and adapted from the definitions provided and past research of Petcharak et al. (2012) and Kerdnaimongkol et al. (2013). There were five closed questions. The Likert scale used involved five interval scales: Level 5–*Highest Fulfillment*, Level 4–*High Fulfillment*, Level 3–*Moderate Fulfillment*, Level 2–*Low Fulfillment*, and Level 1–*Lowest Fulfillment*.

Tool Quality Inspection

The researchers assessed the tools used in this research by investigating their validity and reliability in the following manner.

1. Content Validity Check: The researchers used a questionnaire to check the consistency between the questions and the desired objectives. The Index of Item Objective Congruence (IOC) technique was used with three experts. The results of the examination revealed that the IOC was between .67 and 1.00. To meet acceptable criteria, Rovinelli and Hambleton (1977) said that the IOC Index value should be at .50 or higher.

2. The reliability of the questionnaire was checked by using Cronbach's alpha coefficient analysis as follows: (a) Before data collection, 30 questionnaires were used after the IOC was checked with a sample that was similar to the sample group to be studied, and (b) then the questionnaires were collected from a sample group of 315 international university students. The reliability of the questionnaire items stood between .82 and .87. Cho and Kim (2015) indicated that if the reliability value of the questionnaire was greater than .70, it showed that the questionnaire had content validity and an acceptable level of reliability.

Data Collection Method

The data were collected by using a simple sampling method. The respondents to the questionnaire were students studying at an international university who were involved in student activities. Since the respondents had experience participating in activities and were directly involved in the measurement of learning outcomes, they were able to answer the questions accurately and straight to the point. The data collector informed the respondents of their rights. All information of the respondents was kept confidential and was not disclosed to the public. The data were analyzed as a whole; the data analysis, research reporting, and discussion of results focused on academic concerns.

Data Analysis

Descriptive statistics consisting of frequency, percentage, mean, standard deviation, and inferential statistics were used to outline respondent characteristics. As for hypothesis testing, first order Confirmatory Factor Analysis (CFA) was used; this was followed by analysis of the second-order latent variables involving participation in student activities and learning outcomes. The criteria used to determine the contribution of a variable consisted of the following indicators: Relative chi-square (χ^2/df) is less than 2.00; the *p*-value must be statistically insignificant or less than .05; the Comparative Fit Index (CFI) must be greater than .97; consistency of comparison from Tucker-Lewis Index (TLI) is greater than or equal to .95; the Root Mean Square Error of Approximation (RMSEA) is less than or equal to .05; and the Root Mean Residual (RMR) is less than .05 (Choi & Seltzer, 2010; Hair et al. 2014). To analyze the causal relationship, structural equation model analysis was used to test the coherence of the research model with empirical data based on the standard criteria. These criteria were that the relative chi-square (χ^2/df) was less than 4.00, the *p*-value must be statistically insignificant or not lower than .05, Goodness-of-Fit index (GFI) value was greater than .90, Adjusted Goodness-of-Fit index

(AGFI) was greater than .90, the Root Mean Square Error of Approximation (RMSEA) was less than or equal to .05, the Normed Fit Index (NFI) was greater than or equal to .90, the Incremental Fit Index (IFI) was greater than or equal to .90, and the Comparative Fit Index (CFI) was greater than or equal to .90 (Hair et al., 2006; Kline, 2016).

Summary of Research Results

Descriptive Statistics

1. Analysis of the general data—The results showed that the international university students who responded to the questionnaire consisted of 174 (55.2%) females, 154 (48.9%) of whom were aged 19 to 21, and 101 (32.1%) were in their senior year of study. A total of 117 students (37.1%) had a cumulative grade point average of between 3.01 and 3.50, 75 students (23.8%) majored in English, 174 students (55.2%) were in international programs, and 169 (53.7%) were Thai nationals.

2. Analysis of the level of participation in student activities—The results showed that the students had a high average level of participation in student activities ($\bar{x}$ = 3.82, *SD* = 0.53). When considering participation in student activities per variable, it was found that Service Activities had the highest mean at a high level ($\bar{x}$ = 3.87, *SD* = 0.70) followed by Academic Activities at a high level ($\bar{x}$ = 3.83, *SD* = 0.64), Art and Culture Preservation Activities were at a high level ($\bar{x}$ = 3.80, *SD* = 0.60), and Sports Activities were at a high level ($\bar{x}$ = 3.73, *SD* = 0.68)

3. Analysis of the level of learning outcomes according to the Thai Qualification Framework for Higher Education—A high average level of learning outcomes were achieved ($\bar{x}$ = 3.87, *SD* = 0.54). When considering the learning outcomes for each variable, all scores were at a high level. It was found that Ethics and Morals had the highest mean, ($\bar{x}$ = 4.00, *SD* = 0.65) followed by Interpersonal Skills and Responsibility ($\bar{x}$ = 3.86, *SD* = 0.67), Knowledge ($\bar{x}$ = 3.85, *SD* = 0.63), Cognitive Skills ($\bar{x}$ = 3.83, *SD* = 0.62) and Numerical Analysis, Communication, and Information Technology Skills ($\bar{x}$ = 3.72, *SD* = 0.70).

4. Analysis of the level of opinion about the fulfillment of student academic goals—It was found that the students' average overall level of student perception about their academic achievements was at a high level ($\bar{x}$ = 4.00, *SD* = 0.56). When considering fulfillment of academic goals for each sub-variable, it was found that Being Skillful had the highest mean ($\bar{x}$ = 4.05, *SD* = 0.83) followed by Participation ($\bar{x}$ = 4.04, *SD* = 0.73), Productivity Consideration ($\bar{x}$ = 3.99, *SD* = 0.76), Operational Excellence ($\bar{x}$ = 3.97, *SD* = 0.76), and the Pursuit of Operational Efficiency ($\bar{x}$ = 3.95, *SD* = 0.79).

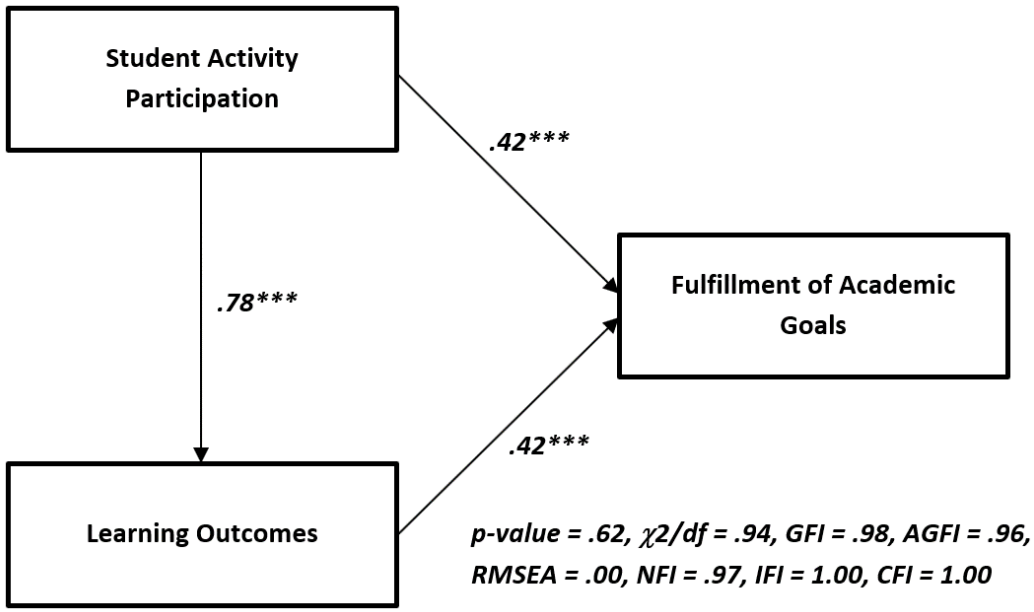
Confirmative Component Analysis

The measurement models of the first and second latent variables of student participation and their learning outcomes were consistent with the model and the data. The good fit showed that the latent variables of all observed variables were appropriate according to the criteria and for all conditions.

Model Consistency Analysis

Data analysis based on the first hypothesis involved an examination of the concordance between the hypothetical model and the empirical data collected. Analysis of the data dealt with the causal relationship between student participation in activities and the learning outcomes on the fulfillment of academic goals. Prior to adjusting the model, there were only two values, with probability values of .00 and Root Mean Square Errors of Approximation of .06, which failed to meet the criteria. However, after adjusting the model, it was found that the model was consistent with all the empirical data. The conformity index between the conceptual model and the empirical data in the form of probability (*p*-value) was .62, χ^2/df value was 0.94, the GFI was .98, the Adjusted Goodness-of-Fit index (AGFI) was .96, the Root Mean Square Error of Approximation (RMSEA) was .00, the Normed Fit Index (NFI) was .97, the Incremental Fit Index (IFI) was 1.00, and the Comparative Fit Index (CFI) was 1.00.

Figure 2 *Causal Structural Model of Student Participation in Student Activities, Learning Outcomes, and Fulfillment of Student Academic Goals*



Therefore, the results of the data analysis showed a consistency between the conceptual framework and the empirical data. This indicated a causal relationship between student participation in student activities and the learning outcomes on the fulfillment of student academic goals.

Hypothesis Testing

Data analysis based on the objectives and research Hypotheses 1, 2, 3, and 4 are shown in Figures 2 and Table 1.

Hypothesis 1 assessment involved a direct test of the influence of participation in student activities on the fulfillment of academic goals by international university students. The results showed that participation in student activities had a direct influence on fulfillment of their academic goals. The influential coefficient was .42 (Direct Effect = .42) and statistically significant at the .01 level; therefore, Hypothesis 1 was accepted.

Hypothesis 2 assessment involved a direct test of the influence between participation in student activities and the learning outcomes. It was found that participation in student activities had a direct influence on learning outcomes; the influential coefficient was .78 (DE = .78), which was statistically significant at the .01 level. Therefore, the second hypothesis was accepted.

Hypothesis 3 assessment involved a direct test of the influence of the learning outcomes, on fulfillment of student academic goals. It was found that the learning outcomes had a direct influence on fulfillment of these goals. The influential coefficient obtained was .42 (DE = .42), and it was also statistically significant at the .01 level. Thus, the third hypothesis was accepted.

Hypothesis 4 assessment involved an indirect test for the influence of participation in student activities through learning outcomes student fulfillment of their academic goals. It was found that participation in student activities had an indirect influence through learning outcomes on the fulfillment of their academic goals. The influential coefficient was .75 (Direct Effect = .42, Indirect Effect = .33, Total Effect = .75), and it was statistically significant at the .01 level. Therefore, Hypothesis 4 was accepted, which means learning outcomes function as mediating variables. Hence, changing these variables is important in moderating the influence of participation in student activities on fulfillment of their academic goals.

Table 1 *Analysis of Participation in Activities and Learning Outcomes on Fulfillment of Student Academic Goals Using Structural Equation Modeling*

Dependent Variables	Independent Variables	
	Student Activity Participation	Learning Outcomes according to the National Qualification Framework for Higher Education
Learning Outcomes according to the National Qualification Framework for Higher Education	Direct Effect = .76*** Indirect Effect = .00 Total Effect = .76***	-
Students fulfillment of Academic Goals	Direct Effect = .42*** Indirect Effect = .33*** Total Effect = .75***	Direct Effect = .42*** Indirect Effect = .00 Total Effect = .42***

*** Statistical significance level .001

Discussion

The purpose of this research was to analyze the relationship of direct and indirect influences on achievement of learning outcomes through participation in student activities consistent with the National Qualification Framework for Higher Education guidelines as they related to fulfillment of international students' academic goals.

The results showed that student participation variables had a direct influence on the fulfillment of students' academic goals. This finding was consistent with a study by Nhusawi (2010), who found that student activities were essential and necessary in the development of qualifications and competencies in students. As a result, students may be equipped with knowledge, abilities, and judgment; they will also sacrifice for the public good, and demonstrate morality. In other words, they will be successful in learning, and be intellectually, physically, and socially able to serve future generations. Thoumthongthawin (2009) found that students who participated in student activities organized by higher education institutions had opportunities to collaborate in academic support activities that benefited their education. Participation in such activities encourages students to think creatively in ways that bring success in student life. This can also be applied to their future work practices, and at the same time benefit society and the community.

The student participation variables investigated directly influenced learning outcomes according to the National Qualification Framework for Higher Education. The results were found to be consistent with opinions expressed by Payubon (2002). The general purpose of student activities is to instill morality in students, promote unity among students, and enhance their experiences in order to cultivate and maintain culture, traditions, and the national identity. In addition, extracurricular activities may promote health and personality development, as well as encourage students to serve the public and bolster the reputation and prestige of the university system. In line with the research of Milaehman and her team (2002), student activities should be aimed at developing graduates with desirable characteristics, and providing them with academic quality and competence. Thai educational institutions should encourage and support participation in student activities to develop desirable characteristics in graduates.

This might be achieved and the quality of education improved by setting goals and guidelines for all Faculties to adopt student activities in their curricular operations. Organizing teaching and learning processes and extracurricular activities develops students to become graduates who are smart, good, and happy people. This can be facilitated by focusing on student activities in order to develop the students physically, emotionally, socially, and intellectually. According to Na Ayudhya (2002), participation in student activities represents an improvement in the quality of student life, both physically and mentally, by focusing on promoting their learning, social life, and welfare. This helps students to be ready for their studies and to adopt key principles that are foundational to becoming complete people.

The learning outcome variables specified by the National Qualification Framework for Higher Education have a direct influence on the fulfillment of academic goals by international university

students. This is consistent with the study of Vinijkul (2015), who found that the learning environment was positively correlated with competence. In another study, the factors influencing nursing students the most were teaching and learning management factors, followed by their relationships with friends (Sakulpanyawat & Maluleem, 2009). Further, a research study conducted by Chantra et al. (2016) found that the factors which affected the enjoyment of learning were largely correlated with desirable characteristics of graduates, followed by their learning style, the learning environment, and their relationships with their classmates.

Student participation variables had a direct influence on international university students' academic goal fulfillment, and had an indirect influence through learning outcomes on goal fulfillment. . This is consistent with a study by Sangkapan et al. (2013), who found that the teaching and learning process adopted by teachers to achieve learning outcomes influenced many related factors, such as student learning behavior and the classroom environment, and had both direct and indirect influences on fulfillment of students' academic goals. Moreover, Panomrit et al. (2011) found that students' self-directed learning affected their learning success.

Conclusions

Participation in student activities directly influenced learning outcomes, it also directly and indirectly influenced the fulfillment of students' academic goals. Moreover, these learning outcomes also directly influenced student fulfillment of academic goals. Therefore, the empirical data showed that the results were consistent with past research, where it was found that participation in student activities and learning outcomes influenced student success or achievement. Therefore, those associated in student activities and teaching management, who are student activities officers and instructors, should encourage students to participate in all types of student activities: (sports, activities for preserving arts and culture, academic activities, and service activities). These activities will help students to achieve the five learning outcomes, namely (a) ethics and morals; b) knowledge; c) cognitive skills; d) interpersonal skills and responsibility; and e) numerical analysis, communication, and information technology skills. They will also improve their physical and mental capacities, enhance development of good personalities, encourage students to learn how to work with others, and develop good leadership traits that will contribute to their level of success and affect their future careers.

Practical Suggestions

The following recommendations follow from our research results:

1. Universities or educational institutions should arrange for students to participate in student activities, so that they will have the opportunity to develop skills and experiences that are beneficial to themselves and society.

2. Since learning outcomes per the National Qualification Framework for Higher Education affects students' future success, all programs should be encouraged to adopt and support such learning outcomes.

Suggestions for Future Research

The design features adopted in this study had various limitations as follows:

1. Data collection from one international university limited the applicability of the findings. Therefore, future studies should collect data from international university students from other institutions, or collect data from throughout the country, to enable accurate and reliable data analysis. Then any generalizations made would be more reliable.

2. There were three variables used in this research; participation in student activities, learning outcomes per the National Qualification Framework for Higher Education, and fulfillment of the academic goals of international university students. In future research, other variables might be included that might influence international university students' achievement of their academic goals. This would ensure maximum benefits for students in the future. These variables might include educational achievement and learning outcomes, to name just two.

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Social Capital, Human Value Creation, and the Organizational Performance of Small Businesses in Butembo, Democratic Republic of Congo

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Abstract

Social capital arises from the relationships, connection, and trustworthiness of people who stay in a group, organization, or community to improve knowledge and create human performance. In this study, the effect of social capital on human value creation (including knowledge, ability, and skills) and performance was examined in Butembo, Democratic Republic of Congo. In the study, a purposive sampling technique was used to select 168 respondents composed of office workers from established organizations and businesses. A structured questionnaire was constructed to collect data about respondent profiles and the influence of social capital on human value creation and organizational performance. As a result, it was concluded that the main contributor to organizational performance was human value. Social capital was thus the principal catalyst in enhancing human value and helping to bring about effective and efficient interactions among employees to develop knowledge, improve their performance, and bring value to the daily operations of their organizations.

Keywords: *Social capital, human value creation, organization performance*

Introduction

Groups are one platform from which people share their social feelings. Humans are social creatures and seek relationships with other people for their existence and survival. Humans find themselves surrounded by networks of friends, colleagues, and loved ones. In these networks, they share personal feelings, thoughts, and experiences with each other. That sharing creates social capital among them, which at its very foundation is all about relationships. When these relationships are present in the workplace, they enable team members to function effectively.

What exactly is social capital? There are as many definitions for this concept as there are theorists. One that is succinct and effective has been provided by Paxton (2002, p. 256): "Social capital is the notion that social relations can facilitate the production of economic or noneconomic goods." It conveys the idea that cooperative human effort is an essential element if social capital is to be generated (Algan, 2018). Claridge (2020) observed that it is virtually impossible to have social interaction and exchange without trust. Trust, therefore, is the linchpin of social capital that facilitates collaborative operations.

Social capital provides for socio-emotional needs and encourages team members to collaborate, communicate, and cooperate. When people trust each other, they do not have to worry that they will be taken advantage of (van der Kroon et al., 2002). As a result, cooperation is likely to flourish. Furthermore, any attempt to measure social capital requires interpersonal trust (Algan, 2018).

According to Edinger (2012), social capital has three distinct dimensions—structural, relational, and cognitive. Structural social capital is the overall pattern of connections between actors—who individuals reach out to, and how they reach them. Relational social capital describes the personal relationships that individuals develop based on a history of interactions that fulfill social motives. Finally, cognitive social capital represents the resources that provide shared representations, interpretations, and systems of meaning among individuals, such as a shared vision. For Szreter (2002), social capital derives its benefits from the mutual respect and trusting relationships of people in the group. This enables them to pursue their shared goals more effectively and brings good outcomes.

Shared goals and good outcomes are the results of collaboration. Collaboration enables team members to get work done faster, and fosters innovation and creativity (Waters, 2021). It also helps

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to prevent information silos from developing. Steve Jobs must have had collaboration in mind when he redesigned Pixar's office. He brought disparate departments into close proximity based on the notion that chance encounters would lead to cross-pollination of ideas and foster greater creativity (Miller, 2017).

Not many studies have been conducted about social capital that enhances the value creation of individual human capital. Thus in this study, the effects of social capital on value creation (including knowledge, ability, and skills) and performance were examined.

Literature Review

Social Capital

In 1988, one of Coleman's significant findings from his study on *Social Capital in the Creation of Human Capital* was recognized and earned a strong reputation. His research focused on family and community relations that encouraged students to improve their performance at school rather than focusing solely on their socio-economic backgrounds. Based on his findings, he established the concept of social capital as a critical explanatory concept of social mobility. He believed that social capital was a combination of different entities and involved some aspects of social structure that facilitated specific actions of individuals to improve their performance. Based on his concept, each individual has control over particular resources, but social capital itself creates a specific kind of support that is available and can bring about improvement.

Putnam (2000) suggested that the close social ties in families and communities were based on shared norms and beliefs that formed social capital involving the following three concepts—social bonds, social bridges, and social linkages of people or groups further up or lower down the social ladder. Putnam (2000), Healy et al. (2011), and Keeley (2007) found that social capital encompassed the networks, norms, and trust that enabled individuals to act more effectively together with shared values and understandings that facilitated cooperation within or among groups.

Lin (2003) stated that social networks enhance information, influence, credentials, and reinforcement of identity and recognition. Being assured of and recognized for one's worthiness as an individual and a member of a social group sharing similar interests and resources provides emotional support and a public acknowledgment of one's claim to specific resources.

Grossman (2013) described social capital based on the following resources—obligations, expectations, and trustworthiness of structures and information channels. The latter deals with the relationships that help people find and collect information, and norms and effective sanctions of the shared aspirations of behavior for any given social circumstance. In addition, social capital exists among persons in the family and outside of the family, and it facilitates productive activity (Sujchaphong, 2013).

Tzanakis (2013) indicated that social capital is the network and volume of past accumulated relationships commanded by agents. Putnam (2000) stated that social capital is the property of collectives, such as groups or regions. He showed that the indicators of social capital are found in clubs and associations. He believed that the principal source of regional wealth creation and good governance was through clubs and association work. The economic performance of provincial governments were influenced by the form and intensity of networks involved in civic engagement.

Bourdieu (1986), a founder of social capital theory, argued that social relationships embodied the resources that enabled human capital to develop and grow. He posited that social capital represents power possessed by the individual who has sought it by acquiring a position with status (Claridge, 2020). Thus, it is not conferred by the group or team, but seized by the individual who mobilized the resources. He stressed the interconnection of social capital with economic and cultural capital to reproduce class inequalities and hierarchies. He conceptualized social capital along with the other three forms of capital—financial capital, cultural capital, and symbolic capital. He believed that these four forms of money were linked to one another.

In the workplace, individuals, teams, and management need to possess effective social skills. According to Keeley (2007), social skills are the interpersonal skills for interaction and connection

between individuals, groups, and teams to create value that benefits the group and the organization. This created value represents an important asset that that cannot be listed in the balance sheet, but it is real and difficult to quantify (Solow, 1999).

Human Value Creation

Beattie and Smith (2010) stated that employee skills and education, employee commitment, positive employee attitudes and behavior, and employee motivation contributed the most to human value creation. Malik et al. (2017) found that firms employed complementary approaches to enhance human value creation and its realization. The more successful systems relied on exploiting existing resources and knowledge architecture to promote efficiency-seeking motive generation by employees. The Golden Organization (2019), a global community of executives and experts from business, academia, social enterprises, and institutions, described human value as realizing the highest human potential in terms of well-being, education, work, inclusion, and self-actualization in a flourishing eco-system.

According to Acemoglu (2013), human value is related to human capital. It involves any stock of knowledge or characteristics that a worker has which contribute to productivity. This human capital can be accessed by companies through worker employment. For Hossain and Roy (2016), workers are recruited based on their value to the company. Then through experiences and training, they become the most highly valued capital for the organization.

This creation of value could be business growth, return on investment, or client satisfaction for the organization. For employees, value is often created by income, development, and a sense of purpose. And similar to society, the value created could be sustainability, well-being, or a high quality of life (van Dijk & Brugma, 2017). People can access resources and information because they have good relations and confidence in each other. These relationships come from interaction between individuals. Their communication enables the development of trust (Dinda, 2014). People will not share information or resources if they do not trust each other. Sharing information requires confidence and good relationships among individuals (Sander & Lee, 2014).

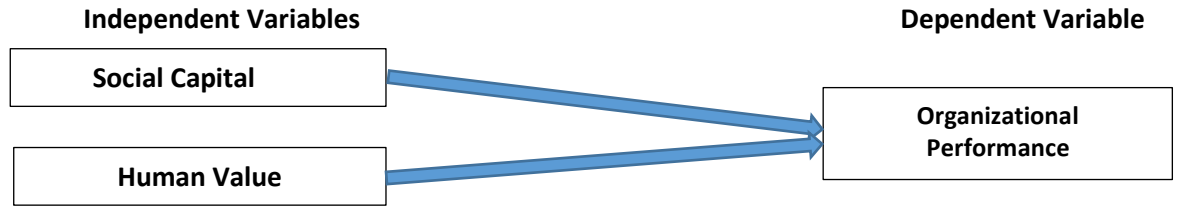
Organizational Performance

The evidence available indicates that social capital influences human value creation in an organization. Lester (2013) found that social capital built on the interaction of people had a significant positive effect on resource exchange and combinations, and it showed a positive direct impact on trustworthiness. Lester concluded that the more trustworthy an employee was deemed to be, the more other employees would exchange or combine resources. Resource exchange was found to be the source of human value creation that led organizations to significant positive product innovation.

The study of Wu and Lee (2016) supported the idea that social interaction was significantly related to group trust. Social interaction in a group positively influenced the group's supportive climate for knowledge sharing to create human value for organizational performance. Agyapong et al. (2017) showed that a positive relationship between social capital and human capital led to innovation and improved small businesses' performance in Ghana.

The aim in this study was to examine the effect of social capital on human value and organizational performance. The variables were conceptualized from the framework illustrated below:

Figure 1 *Conceptual Framework*



The study was guided by the following questions:

1. What is the sociodemographic profile of respondents in small businesses in Butembo?
2. What is the strength of social capital and human value in small businesses in Butembo?
3. What is the level of organizational performance in small businesses in Butembo?
4. What effects do sociodemographic features, social capital, and human value have on organizational performance?

Methodology

A quantitative purposive sampling technique was used to select 168 respondents composed of office workers from organizations and businesses in Butembo, Democratic Republic of Congo. A structured questionnaire was used to collect data about respondent profiles and the influence of social capital on human value creation and organizational performance. More than half (57.1%) of respondents were male, while 42.9% were female. More than half (57.2%) were aged between 36–55 years old, 19.0% ranged between 15–35 years old, and only 4.8% were aged above 56 years old. A total of 38.1% of respondents had a Master's degree, 33.3% had a bachelor's degree, and 28.6% had a high school diploma. The data revealed that 47.6% of the respondents worked in the area of organizational management (director, project manager, finance director, manager, supervisor, etc.), 33.3% of them worked in other services (teaching, health services, etc.), and 19.0% worked as office staff (secretary, accountant, marketing officer, etc.). A total of 42.9% of the respondents had 1–3 years of experience, 23.8% of them had 13 or more years of experience, 19.0% had 8–12 years of experience, and 14.3% had 4–7 years of experience.

Data collected via the questionnaire were analyzed using descriptive statistics (frequency, mean, and percentage), Pearson correlation, and linear regression analysis to examine the ability of the dependent variables to act as predictors.

Results

Analysis of Social Capital, Human Value, and Organizational Performance

The effects of social capital on human value and organizational performance are summarized in Table 1. First, the overall mean of 3.98 showed that respondents *agreed* on the significance of social capital in the workplace (refer to the *Code* provided under Table 1 that details the range of each category recognized). The participants *strongly agreed* that they had good social communication exchanges with their colleagues, undertook social participation during seminars, supported their colleagues socially at work, and agreed about having trusted colleagues in the workplace.

Second, regarding human value creation, the results showed a mean of 3.69, indicating that respondents *agreed* about the creation of good human value in the workplace. Sharing information showed a higher mean, which indicated they had a well-developed habit of sharing information with their colleagues. This implied that they had trust and could share what they knew to make sure their work was well done and supportive of each other. However, Item HV4 showed a low mean of 3.14, which placed this response in *neutral* territory. This meant that respondents were not sure of the influence colleagues have on their decision-making.

Lastly, respondents agreed that overall organizational performance, the quality of services, and employee trust among themselves were in the second highest category. However, they were undecided when it came to the question of organizational profitability being higher than planned.

Table 1 *Analysis of Social Capital, Human Value, and Organizational Performance*

Questions	Mean	*SD*
Social Capital		
SC1. At my workplace, I have colleagues with whom I can communicate on every topic relating to my job.	4.24	0.92
SC 2. I share with my colleagues the resources I receive from professional development seminars or other information sources.	4.20	0.67
SC 3. Getting things done at my job requires the support of my colleagues.	4.10	0.81
SC 4. I can quickly get access to useful information from my colleagues.	3.90	0.81
SC 5. My colleagues are the essential source of work advice for success in my job.	3.90	0.92
SC 6. Being a member of my colleagues' team is part of my identity.	4.10	0.81
SC 7. When a problem arises, my colleagues help me to go through this problem.	3.81	0.59
SC 8. I can trust my colleagues.	3.57	0.96
SC 9. My colleagues and I share experiences to improve our job performance.	4.14	0.64
SC 10. I expect to be part of my colleagues' team for a long time.	3.86	0.78
Overall Mean	**3.98**	**0.53**
Human Value Creation		
HV1. The information advised by my colleagues can be used for my job.	3.90	0.81
HV2. The information shared by my colleagues increased my knowledge.	4.14	0.89
HV3. The information shared by my colleagues improved my work performance.	3.95	1.00
HV4. My colleagues influence my decision-making.	3.14	1.21
HV5. My work performance is motivated by my colleagues.	3.33	0.95
Overall Mean	**3.69**	**0.89**
Organizational Performance		
OP1. Employees are satisfied with the trust among themselves from the organization.	3.38	0.85
OP2. Organizational profitability is high than planned.	3.05	1.05
OP3. The organization has high-quality services.	3.71	0.94
Overall Mean	**3.38**	**0.95**

Code. 0.79–1.59 *Strongly Disagree*; 1.60–2.40 = *Disagree*; 2.41–3.20 = *Neutral*; 3.21–4.00 = *Agree*; 4.01–5.00 = *Strongly Agree*

Correlation between Social Capital, Human Value, and Organization Performance

Results shown in Table 2 indicated that a significant positive relationship ($p < .01$) existed between social capital and human value, and with organizational performance and human value (Table 2).

Table 2 *Correlation between Social Capital, Human Value, and Organizational Performance*

Feature	Social Capital	Human Value
Human Value	.644**	
	.000	
Organizational Performance	.644**	.825**
	.000	.000

** $p < .01$

The influence of social capital and human values on organizational performance is presented in Table 3. The data indicated that there were positive relationships between social capital and communication with colleagues and employee satisfaction, organizational high-quality services, and

organizational profitability ($p < .01$). The findings also indicated that there were relationships between social capital and sharing resources with colleagues, together with the organization's high-quality services ($p < .01$). Weaker relationships ($p = .05$) were indicated between social capital and getting things done with the support of colleagues (SC 3/OP 4), and also organizational profitability and high-quality organization services (SC 3/OP 2). The remaining relationships with social capital were all found to be significant ($p < .01$).

Table 3 *Correlation between Social Capital, Human Value, and Organizational Performance*

ITEMS	OP1 (Trust)	OP2 (Profitability)	OP3 (Service Quality)
SC 1	.496**	.236**	.467**
SC 2			.242**
SC 3		.163*	
SC 4	.401**	.399**	.153*
SC 5	.721**	.499**	.412**
SC 6	.643**	.444**	.665**
SC 7	.723**	.403**	.683**
SC 8	.262**	.498**	
SC 9	.517**	.631**	.548**
SC 10	.594**	.715**	.537**

Code. SC and OP Items are listed in Table 1.

Correlation between Human Value and Organizational Performance

The five elements of human value investigated and their impact on organizational performance are shown in Table 4. Trust, profitability, and service quality were all influenced positively and significantly ($p < .01$) by meaningful interactions among work colleagues. These interactions involved information sharing, decision making, and work performance.

Table 4 *Correlation between Human Value and Organizational Performance*

ITEMS	OP1 (Trust)	OP2 (Profitability)	OP3 (Service Quality)
HV 1	.471**	.455**	.467**
HV 2	.499**	.454**	.624**
HV 3	.812**	.686**	.701**
HV 4	.788**	.561**	.417**
HV 5	.559**	.564**	.650**

Effect of Demographic Features, Social Capital, and Human Value on Organizational Performance

The results obtained showed that years of experience, respondent age and gender, human value, social capital, and level of education accounted for 73.0% of organizational performance change.

Data presented in Table 5 indicated that human value was the most important factor in predicting change in organizational performance, accounting for 67.9% of variation, while social capital only added 2.2%.

Table 5 *Effect of Social Capital and Human Value on Organizational Performance*

	Statistics				Change Statistics				
Model	*R*	R^2	Adjusted R^2	Std. Error of Estimate	R^2 Change	*F* Change	*df*1	*df*2	Sig. *F* Change
1	.825[a]	.681	.679	.540	.681	354.384	1	166	.000
2	.838[b]	.703	.699	.522	.022	12.166	1	165	.001

Code. [a] represents Predictor (Constant) for Human Value; [b] represents Predictors (Constants):Human Value, Social Capital

Table 6 shows that the overall regression model was statistically significant ($p < .001$).

Table 6 *ANOVA for Social Capital, Human Value, and Organizational Performance*[a]

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	103.253	1	103.253	354.384	.000[b]
	Residual	48.366	166	.291		
	Total	151.619	167			
2	Regression	106.575	2	53.287	195.194	.000[c]
	Residual	45.045	165	.273		
	Total	151.619	167			

Code. [a] represents Dependent Variable: Organizational performance; [b] represents Predictors (Constant):Mean for Human Value; [c] represents Predictors (Constants):Means for Human Value and Social Capital.

Results displayed in Table 7 show that the predictive model for organizational performance was $Y = .75X_1 + .35X_2 - .723$, where X_1 is human value and X_2 is social capital.

Table 7 *Coefficient Analysis for Social Capital, Human Value, and Organizational Performance*[a]

	Model	Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.
		B	*SE*	Beta		
1	(Constant)	.154	.176		.875	.383
	Mean for Human value	.880	.047	.825	18.825	.000
2	(Constant)	-.723	.304		-2.378	.019
	Mean for Human value	.747	.059	.701	12.639	.000
	Mean of social capital	.349	.100	.193	3.488	.001

Code. [a] represents Dependent Variable:Organizational Performance

Discussion and Conclusion

The results indicated that respondents *agreed* (Overall *M* = 3.98) that there was a high level of social communication among colleagues, social participation during seminars, social support to their colleagues at work, and trust for colleagues in the workplace. The results resonated with Lin's (2003) findings, who stated that social networks enhance information, influence, social credentials, and reinforcement of social relations identity and recognition. Being assured of and recognized for one's worthiness as an individual and a member of a social group that shares similar interests and resources provides emotional support and a public acknowledgment of one's claim to specific resources.

Regarding human value, the results showed an overall mean of 3.69, which indicated that respondents *agreed* to develop good human values for their work. The highest mean score was obtained for sharing information with their colleagues. This implied that they had trust and could share what they knew, hence making sure their work was well done and functioned to support each other. However, the question "My colleagues influence my decision-making" received a low mean score of 3.14 indicating neutrality. This meant that respondents were not sure of their colleagues' influence on the decision-making process. Malik et al. (2017) found that some firms employ complementary approaches to value creation and realization. The more successful strategy relied on exploiting existing resources and knowledge architectures for efficiency-seeking motives.

In a flourishing eco-system, human value permits realization of the highest human potential in well-being, education, work, inclusion, and self-actualization. Lester (2013) found that social capital, built from the interaction of people, had a significant positive effect on resource exchange and combination, and it positively impacted trustworthiness.

The results indicated that there was a very significant positive relationship between social capital and human value, and between human value and organizational performance. For Hossain and Roy

(2016), workers were recruited based on their importance to the company. Then through experience and training, they became the most highly valued capital for the organization.

The most effective predictor of change in the performance of organizations surveyed in Butembo was human value, with a high level of influence of 67.9%. The coefficients of regression supported the results, showing that for a positive change in human value, organizational performance increased by .75, and for a positive change in social capital, organizational performance increased by .35. Sujchaphong's (2013) data supports the present results in that social capital was shown to facilitate productive activity such as exists in the relations among persons inside and outside of the family. The study of Wu and Lee (2016) lends support to these results in that social interaction was shown to be significantly related to group trust. Social interaction in a group positively influences the group's supportive climate for knowledge sharing, and extends to the human value creation for lifting organization performance. This was indicated by Agyapong et al. (2017) who showed a positive relationship between social capital and human capital for innovation and performance of small businesses in Ghana.

The main contributor to the organizational performance of the businesses surveyed in Butembo was human value. This creation of value could be business growth, return on investment, or client satisfaction with the organization. For employees, value is often created by income, development, or a sense of purpose. And similar to society, the value created could be about sustainability, well-being, or a higher quality of life (van Dijk & Brugma, 2017). People can access resources and information because they have good relations and confidence in each other. These relationships arise from the interaction among individuals, and their communication enables them to build trust (Dinda, 2014). People will not share information or resources if they do not trust each other. This means that trust and good relationships between individuals are needed to promote the sharing of information (Sander & Lee, 2014).

Therefore, social capital is the principal catalyst contributing to human value. It aids in promoting effective and efficient interactions among employees to develop knowledge, to improve their performance, to bring value to daily operations, and to sustain the creation of competitive advantages for their organizations.

Study Limitations and Future Research

Future investigators might consider a qualitative approach to support the statistical findings reported here. For example, observation could be carried out using selected individuals working in different workplaces, and analyzing the reports for established organizations.

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A Descriptive Phenomenological Analysis of the Financial Blueprints and Coping Mechanisms of Overseas Filipino Workers in Thailand

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Abstract

This paper investigated the financial status of Overseas Filipino Workers (OFWs) in Thailand. The purpose of the study was to understand the common financial challenges that OFWs face, examine their current economic blueprints, analyze their financial coping mechanisms, and come up with a financial literacy guidebook. Using a purposive sampling technique and in-depth interviews, the primary data for this study was collected from informants who had lived in Thailand for more than eight years. After the interviews, the researcher employed coding and theming to analyze the data, along with descriptive phenomenological data analysis created by Colaizzi (1978). Five themes emerged from the analysis: financial mistakes, debt management and budgeting, savings and emergency funds, insurance and investment, and financial retirement plans. The results also revealed an alarming deficiency of financial intelligence among most OFWs in Thailand. Likewise, the results of this study showed many unforeseen problems and challenges that significantly entangled many OFWs in poverty. Lastly, this study has significant implications on the financial mindset of Filipino workers who trade their time, health, and effort for hard-earned money abroad.

Keywords: *Overseas Filipino Workers, financial blueprint, coping mechanism*

Introduction

Globalization and other economic factors have led people to constantly move to find better job opportunities. The Philippines is considered as one of the major sources of labor supply worldwide (Lorenzo, 2021). Moreover, it has more than a century of history in labor migration which has gained prominence in the last four decades. The Philippines has been looked upon by other countries as a model in managing international labor migration (Lorenzo, 2021). The estimated figure of Overseas Filipino Workers (OFWs) was 2.2 million during the period from April to September 2019 (Mapa, 2020). However, more than 10 million Filipinos—or about 10% of the population—are working and/or living abroad (Asis, 2017). With millions of OFWs across the globe, the purpose of working abroad is to help their loved ones. Lack of job opportunities to increase their sources of income in their own home country is the primary reason why Filipinos work overseas, especially those aged 15 to 35-years old (Hasnan, 2019).

While OFWs are recognized as modern-day heroes (Baclig, 2021) because of their sacrifices for their loved ones, having a financial blueprint is essential to a brighter future. The surge of cash remittances is undoubtedly one of the significant reasons the Philippine economy continues to grow. However, the ultimate challenge for most OFWs is how to handle their finances. For instance, a study by Social Enterprise Development Partnerships Inc. (SEDPI) revealed that one out of 10 OFWs is financially broke. Eight out of 10 of those who return to the Philippines have no savings (Rapisura, 2011). Additionally, the reason why most OFWs have no savings is because of common money management mistakes. These are some of the reasons why they struggle financially: they do not prioritize savings, lack skills to identify financial assets, investments, and financial goals, have a get-rich-quick-scheme attitude, have relatives who are overly dependent on them, spend money to please people, and lack emergency funds and insurance (Amparo, 2017a). Due to a scarcity of research on

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this topic, this paper attempts to fill this gap by exploring the financial status of most OFWs in Thailand and why they seem to face recurring financial crises throughout their lives.

Literature Review

Background of Filipinos in Thailand

The vast majority of migrant workers in Thailand are unskilled laborers from neighboring countries; however, the country is also a popular destination for skilled workers and technicians from other ASEAN countries, with the Philippines taking the top spot. The top five were the Philippines, Malaysia, Singapore, Myanmar, and Indonesia, according to the Department of Employment (Fernquest, 2017). Sarausad and Archavanitkul (2014) have highlighted how migration began between the Philippines and Thailand. Instead of Thailand, Singapore and Malaysia were the typical destinations for Filipino migrants. The small number of Filipinos who visited Thailand mainly represented employees of international organizations, missionaries, entertainers, and women married to Thai men. Eventually, Filipinos started migrating to Thailand (from 1992 to 2012) after the country became an important tourist destination and center of economic growth in Asia. The latest available data indicated a total of 15,679 Filipino migrant workers who are legally working in the country and protected under Thai law (Ministry of Labour, 2018).

Definition of Financial Literacy

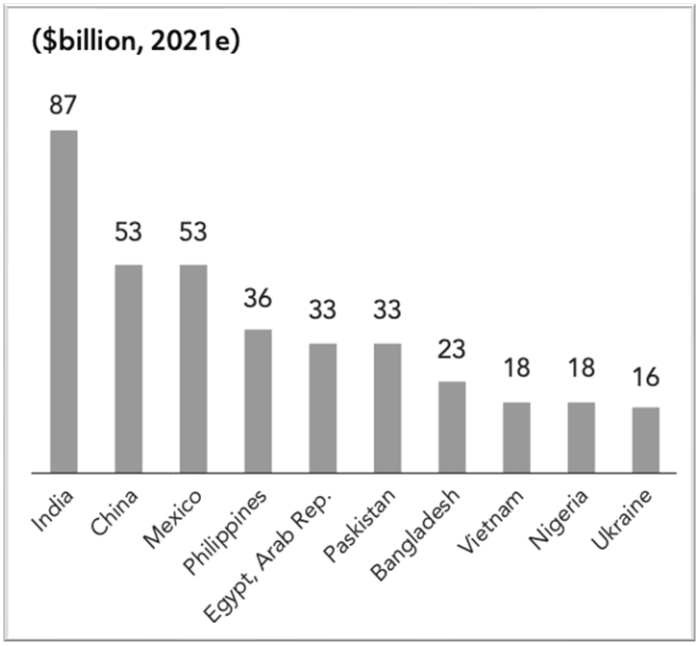
Financial literacy refers to financial knowledge and the capability to utilize this knowledge to make sound personal financial decisions (Hogarth & Hilgert, 2002). In addition, financial literacy is the ability to understand and effectively use various financial skills, including personal financial management, budgeting, and investing. Financial literacy is the foundation of an individual's relationship with money, and it is the start of a lifelong journey of learning. The earlier they start, the better off they will be because education is the key to success when it comes to managing money (Fernando, 2021). In a nutshell, financial literacy means having a basic understanding of how money works. On the other hand, Huston (2010) explained that financial literacy is made up of two elements: understanding and use. Understanding financial literacy implies that a person is knowledgeable about personal finance, and applies such knowledge in dealing with one's own finances.

The benefits of financial education are far-reaching. In fact, it forms the foundation of an abundant life. Properly planning one's finances improves self-esteem and garners the respect of friends and family. Without financial literacy courses or other education, people naturally make bad decisions about their money. A financial blueprint is an individual's vision and compass. It is a realistic, long-term plan of action based on their unique money numbers. It will keep them on track as they build their wealth and help to make their dream of financial liberation a reality (Wahhab, 2019).

Money Remittances by OFWs

Money remittances contributed by millions of OFWs are one of the most important features of the Philippine economy. The direct exports of laborers abroad generate sizeable remittances. In 2021, the top five remittance recipients (Figure 1) in current US dollar terms were India, China, Mexico, the Philippines, the Arab Republic of Egypt, and Pakistan (World Bank Group, 2021). Moreover, the Philippines had the highest amount of remittances among the Southeast Asian countries (Tchantchanee et al, 2013). Mapa (2020) has provided a general overview of OFW remittances. Interestingly, the estimated amount that OFWs have sent to their loved ones in the Philippines through banks and money transfers was Philippine Pesos 211.9 billion; this figure was from April to September 2019 only. Undoubtedly, the Overseas Filipino Workers' remittances contributed to the economic growth and development of the Philippines, making these remittances a significant source of national income.

Figure 1 *Top Remittance Recipients, 2021*



Source. World Bank–KNOMAD staff p.18; https://www.knomad.org/sites/default/files/2021-11/Migration_Brief%2035_1.pdf

Evidences of Financial Mismanagement

In 2017, the story of a couple who became trapped by the horrible effects of unwanted debt raised the awareness of proper financial management amongst Filipino teachers in Thailand (Amparo, 2017b). Both of them were teaching in Thai schools. However, with personal loans from five different people and with a ten percent monthly interest rate, the couple became buried in debt. They had to borrow money just to pay the interest aside from the principal amounts. Worse yet, they had to surrender their passports as collateral to secure a loan. While the husband was narrating his story to the researcher, he could not hold back his tears. He began to cry as he recalled the pain and depression he and his wife felt. The researcher had tried to comfort him and said, "You really had a difficult time." He replied, "It wasn't just difficult. It was very, very difficult." In addition, a Filipina and her colleague were arrested for running a company that allegedly scammed people into investing in a loan business. The company, Filipino Cooperative Investment Loan, had been advertising via online media and amassed more than 700 victims (The Nation, 2020).

Furthermore, the family of an OFW sought financial assistance for the repatriation of the remains of a loved one who had an accident in Thailand. According to the report, the family needed more than a hundred thousand Baht and hoped that the embassy and the Filipino community in Thailand would help them (Caballes, 2017). Likewise, labor migrants like Filipinos are also vulnerable to injuries and accidents within their work conditions and environments. For instance, a case in Thailand reported two Filipinos who were brought to the nearest hospital after being hit by a speeding motorcycle. Unfortunately, since they did not have sufficient savings and health insurance, the family members and friends raised funds to cover their treatment, surgery, and the ballooning cost of hospital bills (Felipe, 2019). The more profound message of these incidents reveals that OFWs are not financially educated, and they need a financial blueprint in managing their hard-earned money to be prepared for unforeseen crises.

Research Objectives

The justification of this research is observable yet has not been addressed due to lack of financial education amongst OFWs. The objectives of the study were to:

1. Understand the current levels of financial literacy of OFWs.
2. Explain the financial coping mechanisms that most Filipino OFWs employed.
3. Analyze the most common financial challenges that OFWs face.
4. Create a practical financial literacy guidebook.

Methodology

This study was conducted by interviewing selected respondents, and utilized Colaizzi's descriptive phenomenology in descriptive qualitative research. The goal of phenomenology is to investigate human experience (Polit & Beck, 2008; Van Manen, 1990) and understand a phenomenon based on the perspective derived from participants' personal narratives (Polifroni & Welch, 1999). The important findings derived from phenomenology are an understanding of a phenomenon as seen through the eyes of those who have experienced it. Descriptive phenomenology is especially valuable in areas where there is little existing research (Morrow et al., 2015). The researcher employed a semi-structured interview questionnaire consisting of relevant components to assess the current financial blueprints, coping mechanisms, problems, and challenges of OFWs in Thailand. Through in-depth interviews, the primary data of this study came from the five OFW informants who had lived in Thailand for more than eight years.

In terms of data analysis, the researcher employed the process of descriptive phenomenological data analysis in Table 1. Below are the seven descriptive steps employed by the researcher using the framework from Colaizzi's approach to qualitative design.

Table 1 *Steps in Colaizzi's Descriptive Phenomenological Method*

Steps	Description
1. **Familiarization**	The researcher familiarizes him- or herself with the data by reading through all participants' accounts several times.
2. **Identifying Significant Statements**	The researcher identifies all statements in the accounts that are of direct relevance to the phenomenon under investigation.
3. **Formulating Meanings**	The researcher identifies meanings relevant to the phenomenon that arise from a careful consideration of the significant statements.
4. **Clustering Themes**	The researcher clusters the identified meanings into themes that are common across all accounts.
5. **Developing an Exhaustive Description**	The researcher writes a full and inclusive description of the phenomenon, incorporating all the themes produced in Step 4.
6. **Producing the Fundamental Structure**	The researcher condenses the exhaustive description down to a short, dense statement that captures just those aspects deemed to be essential to the structure of the phenomenon.
7. **Seeking Verification of the Fundamental Structure**	The researcher returns the fundamental structure statement to all participants to ask whether it captures their experience.

Source. Morrow, R. Rodriguez, A. & King, N. (2015): Colaizzi's descriptive phenomenological method.

In selecting the sample, purposive sampling was employed to select respondents who had resided in Thailand for more than eight years with a shared set of characteristics. Therefore, the target participants in the study were categorized as Overseas Filipino Workers, which meant that they were employed in Thailand and possessed related documents such as valid visas and work permits. The purpose of the study was clearly explained and the assurance given that detailed, meaningful narratives would be treated as confidential was given prior to the actual interviews. An informed consent process was utilized to protect respondents' confidentiality and to guarantee that no

identifiable marks were included in the research report. The interview questions used in this study were reviewed by the three experts in the field of finance and investments to ensure the congruency and appropriateness of each question item and to provide assurance that responses would answer the research objectives.

Although the questions were semi-structured, participants were free to share their experiences and opinions about the questions. Aside from taking down notes, the researcher asked permission from each participant to record the conversation prior to the actual interview. Participants had received instructions from the researcher that they were allowed to skip to questions whenever they felt too personal, or if they were not comfortable answering them. Each interview lasted for more than 30 minutes. The data gathered was audio-recorded, transcribed (using dictation/speech recognition software), and is interpreted in the results and discussions section.

After gathering data, the researcher selected significant statements from the participants and formulated deeper meanings or implications in terms of managing finances. In this stage of analysis, significant statements and phrases pertaining to practical financial decisions and financial intelligence were extracted from each transcript.

Findings and Discussions

This section indicates the findings and discussion based on the emergent themes and final thematic map. The demographic profile of the informants is highlighted in Table 2. All five participants were employed as teachers (three males and two females), and since they had worked in Thailand for over eight years, they could provide rich and substantial narratives pertaining to their financial journeys as OFWs.

Table 2 *Demographic Profile of Informants*

Participants	Gender	Age Range	Occupation	Years in Thailand
Participant 1	Female	21–30	Science Teacher	10
Participant 2	Male	40–45	Arts Teacher	15
Participant 3	Male	21–30	Business Teacher	10
Participant 4	Male	40–45	English Teacher	16
Participant 5	Female	21–30	English Teacher	9

Since qualitative methods place primary emphasis on saturation (i.e., obtaining a comprehensive understanding by continuing to sample until no new substantive information is acquired) (Miles & Huberman, 1994), five emergent themes indicated that substantive information had been acquired in the analysis, which are: a) financial mistakes, b) debt management and budgeting, c) savings and emergency fund, d) insurance and investments, and e) a financial retirement plan. These themes (Table 3) serve as a framework for creating a financial literacy guidebook for OFWs and their immediate family members.

Theme 1: Financial Mistakes

The study showed some financial mistakes committed by OFWs: lack of financial goals, impulse buying, living like a one-day millionaire, over-remitting to family members, and lack of skills to scrutinize fraudulent investment schemes. For instance, Participant 4 mentioned his struggle with impulse buying as one example of financial mistakes: “Some areas that I need to improve are savings and impulse buying, for sometimes, I bought something that I could not use.”

Table 3 *Five Emergent Themes*

Theme 1: Financial Mistakes	***Theme 2: Debt Management and Budgeting***
• Lack of financial goals • Impulse buying • Living like a one-day millionaire • Over-remitting to family members	• Getting out of debt • Budgeting and tracking spending • Having extra income to reduce debt • Defining good debt and bad debt
Theme 3: Savings and Emergency Fund	***Theme 4: Insurance and Investments***
• Savings must be a top priority • Need to have a high income to save • Financial readiness in case of emergency situation • OFWs have a mindset of working only • Lack of savings and emergency fund	• Protecting oneself and investments • Diversification of investments • Long-term financial goal to build wealth • Scrutinize fraudulent investment schemes
Theme 5: Financial Retirement Plan	***Research Output***
• Concrete financial planning for retirement • Avoid being a burden to family members • Retire comfortably if OFWs manage their money wisely	• Financially literacy guidebook for OFWs as part of an intervention program

Moreover, Participant 2 mentioned another example of a financial mistake, which was lack of skills to scrutinize investment fraud. One practical reason why OFWs fell into scams was because they did not spend time analyzing the investment being offered to them and they easily trusted people. When people are not financially literate, they are usually not critical about the potential signs and red flags of unregulated investment activities. While acquiring wealth takes time, greed and the prospect of easy money were the main reasons that people fell into scams. Literature also suggested that debt burden appears to have an effect on fraud victimization. In a Federal Trade Commission survey, nearly 1 in 4 respondents with more debt than they could comfortably handle were victims of fraud, compared to 1 in 10 of those without personal debt (Federal Trade Commission, 2007). Additionally, those who are less content with their lives may be more vulnerable. Lottery and investment fraud victims were more likely than the general population to feel that they had gotten less than they deserved out of life (Consumer Fraud Research Group, 2006).

Theme 2: Debt Management and Budgeting

Debt management and budgeting are two essential factors to achieve financial success. However, Participant 3 emphasized wise spending and responsible used of credit cards. Part of the budgeting process is the ability to forecast future spending accurately (Sussman & Alter, 2012). Swart (2012) also stressed that everyone must support the family budget for proper implementation of agreed-upon allocations. Participant 1 emphasized the significance of financial transparency to ensure everyone in the family is committed to achieving financial goals: “My family in the Philippines is not aware of my financial condition, salary increase, and if there are issues about renewal of contract. I need to be more transparent with them so they will have realistic financial expectations.”

One factor that guides adults’ responses to financial situations is how financial issues were handled by their parents (Jorgensen, 2010). In other words, a proper financial orientation and upbringing has a significant influence on one’s coping mechanisms and financial outlook. To illustrate this, Weil (2009) emphasized the significance of integrating a genogram element in financial therapy to understand the intricacies of money management within families. For instance, behavior of parents and family members, such as credit card misuse and overspending, affects how people respond to their financial difficulties.

Needless to say, financial conflicts may also damage healthy family relationships. When it comes to debt management and budgeting, it is critically important that every family member is on board and understands the shared common financial values to ensure financial success. Additionally, most financial education programs target individuals, many of whom do not make decisions alone, but in a family system (Kim et al., 2017).

Theme 3: Savings and Emergency Fund

An emergency fund is a bank account with money set aside to pay for large, unexpected expenses, such as unforeseen medical expenses, home-appliance repairs or replacement, major vehicle fixes, and unemployment (Burnette, 2021). Thus, it is important to have an emergency fund. Participant 2 admitted that he had no emergency fund, while Participant 1 tried to build a substantial buffer for future needs.

Additionally, since all the participants had been in Thailand for more than eight years already, a critical question was if they see themselves staying longer or just temporarily? Whether migrants invest in the host country or send them directly to their loved ones who are not employed abroad, the literature suggests that saving and the amount of monetary remittances depend on the status of the foreign worker, whether workers are temporary or long-term. However, migrants who plan to stay only temporarily tend to save more than immigrants who plan to stay permanently (Dustmann & Görlach, 2016). Moreover, Wen et al. (2021) have studied the effect of temporary migration on migrants' savings rates in China using data from the 2017 China Migrants Dynamic Survey. Results showed that temporary migration has a significant effect on migrants' savings rates. On average, migrants with a temporary intention save 3.41% more than their permanent counterparts. Three participants supported this finding by acknowledging a connection between financial freedom and length of time working as an OFW, especially in regards to consciousness of saving money. In other words, participants' sense of awareness and understanding of the nature of their employment (i.e., they will not be working in Thailand for the rest of their lives) can affect their saving behavior.

> Yes. There is a connection between the length of staying here in Thailand and financial freedom. Because I think if you start saving from the first year of your contract, you will be able to at least save enough and have an emergency fund. I believe there is a correlation between financial freedom and length of time as an OFW, especially in saving money. But still depends on how OFW plan. (Participant 1).
>
> There is a connection between the length of stay in Thailand to financial freedom. (Participant 2).
>
> There is a connection between the length of stay and financial freedom – it can affect one's financial stability. (Participant 3)

Unfortunately, saving becomes challenging when one has the habit of impulse buying. To avoid financial distress, Participant 3 acknowledged that he needs to improve on his saving habit and avoid impulse buying. But this is easier said than done, especially when one's mindset is not congruent with financial goals. For instance, the notion of loss aversion kicks in when saving money. Because most OFWs enjoy spending on payday, they think saving money is a loss rather than a gain because it involves cutting spending. The implication is that OFWs prefer immediate gratification to saving money and having long-term financial goals. In other words, why wait 5-10 years when they can enjoy spending their money right now? Since patience and a long investment horizon are essential to acquire substantial savings, OFWs need to be rational when it comes to their spending habits.

Theme 4: Insurance and Investment

Sequencing is critical when it comes to investing. Because any investor can face many risks, such as market crashes, high annual inflation, injury, illness, and death, it's crucial to ensure that OFWs and their assets are fully protected. All participants agreed that a comprehensive insurance policy is necessary before committing to any investment instrument like the stock market, unit investment trust fund, mutual funds, provident fund, or real estate. Participant 3 emphasized the importance of health insurance and essential need because OFWs age and become more prone to illnesses and accidents. Moreover, they are open to learning about financial products in which to invest and grow their money. For instance, one area in which they need coaching is in diversifying their investment portfolio–for example, in paper assets that are readily accessible online. Participant 3 indicated his desire to diversify his investments in order to have extra income—"Investing is more relevant to me, put eggs in many baskets and add income stream. We have expenses but I believe we need to add extra income."

However, although most OFWs wanted to grow their money, some had a limited understanding of the technicalities of some legitimate and regulated financial products. Because of the lack of basic skills in investing, they turned to attractive investments that touted high returns, and this was a common reason why OFWs fell into scams. Participant 3 admitted that there is no such thing as easy money.

> Why did OFWs fall into a scam? I think it is because they want easy money. But in real life, there is no such thing. Everything in this world, you need to work hard for it. You can't get it in just one night. Be productive and work hard so you can attain your financial goals.

According to the Securities and Exchange Commission, one potential red flag of a fraudulent investment is the high returns with little or no risk (Chen, 2021). While every investment carries some degree of risk, investments yielding higher returns typically involve more risk. Another characteristic of a scam is a consistent flow of returns regardless of market conditions (Chen, 2021). In this case, OFWs must exercise caution and be highly suspicious of easy money and any guaranteed investment opportunity that offer them. When OFWs know how to make prudent financial decisions, they can avoid the common pitfalls of those who do not. In some worst-case scenarios, OFWs who have fallen prey to investment scams return to the Philippines empty-handed. Fortunately, OFWs can protect themselves from investment scams by following the necessary steps: educating themselves, becoming more cautious of high investment returns in short time periods, earning money without product movement or services, investing only in companies that have good reputations and are recognized or regulated by governments (Amparo, 2017c).

Theme 5: Financial Retirement Plan

Retirement is inevitable. There is a critical need to start planning for retirement, as OFWs will not be working abroad for the rest of their lives. Failure to establish concrete goals can impact one's financial outlook and eventually affect other family members. A previous study indicated priority expenditures of OFWs such as (1) to educate their children or siblings; (2) to provide for the needs of their families; (3) to improve their quality of life; and (4) to think of or put their meager savings into preferred investments that would give them additional income (Macatangay & Vargas, 2021). While generosity and offering financial help are typical in Asian cultures, particularly within families, OFWs must not forget to save for retirement.

Without behavioral change, an OFW may become a burden if he or she fails to save for the future. Participant 4 expressed his worry that he may not be financial prepared for the future, so he started thinking about retirement planning:

> Yes. Health comes first before wealth. You need to invest in your health so that you can protect everything you work hard for. Saving for retirement is a must, too. I don't want to end up asking and depending on my future children's money to survive.

While some research has indicated that most retirees are content with their lives, others show that up to one-third of retirees find the transition difficult or suffer a decrease in well-being after retirement (Bonsang & Tobias, 2012). Garcia (2006) claimed that 84% of respondents considered it their responsibility to fund their retirement. Aside from daily needs, migrant workers need financial skills to manage their needs throughout their life cycle, such as education, marriage, children, and income security when they become old or sick (International Labour Organization, 2011).

Participant 1 admitted that delaying gratification is challenging when it comes to setting long-term financial goals due to a spending culture and consumerism mentality brought on by social media. However, Participant 2 emphasized that saving money for retirement must be done today, not tomorrow. Moreover, interviewees encouraged fellow OFWs to allocate a consistent, substantial amount for their retirement fund in order to secure a better future.

Scope and Limitations

Because this study primarily explores the personal financial experiences of OFWs as a critical phenomenology, future research may wish to interview the family members and loved ones of OFWs to gain broader insights on how family dynamics affect their personal finances. Moreover, this study was conducted before the COVID-19 pandemic. Hence, future research could integrate the implications of the COVID-19 pandemic on the financial education of OFWs and their families. In addition, the participants were Filipino teachers in Thailand and so the research findings do not represent how the interviewees of other occupations manage their financial issues.

Conclusions

Based on the study, the results suggest that OFWs may be financially illiterate and exhibit less interest in pursuing related investment endeavors. While remittances have been considered a significant factor to the Philippine economy, the results indicated that OFWs lack financial intelligence and an investment mindset. Moreover, the study showed that OFWs lack the mechanisms to manage their earnings. One possible explanation for their financial challenges is the absence of a concrete financial blueprint and financial education to guide them in managing their financial resources. Moreover, the study revealed that the lack of financial discipline amongst OFWs included their households in the Philippines, who sometimes become too extravagant in spending the remittances.

Recommendations

While applying practical knowledge can be challenging for most Filipino migrants, good spending habits and a proper investment mindset require commitment and discipline. Based on the findings, OFWs are encouraged to prioritize saving and start building a reasonable amount of emergency funds to avoid financial distress.

The researcher suggests consideration of the Financial Literacy Model (Table 4), which was created from the emergent themes formulated from the narratives, as a key to acquiring financial intelligence.

Stage 1 Financial Education: Intelligent financial behavior requires a proper mindset. Education is the best weapon against unscrupulous investments offered to OFWs.

Stage 2 Set Financial Goals: The problem with most OFWs is they are thinking for the short-term only. Setting short-term and long-term financial goals must be the top priority of every OFW.

Stage 3 Get out of Bad Debt: OFWs need to be sensible and prudent in identifying good debt and bad debt. If the type of debt provides an opportunity to generate income, it is a sign of good debt. However, if one is borrowing money to purchase depreciating assets, it is a sign of bad debt that may lead to a chronic debt cycle or financial bondage and should be avoided.

Stage 4 Develop the Good Habit of Proper Budgeting: Creating a doable and realistic budgeting plan is integral to responsible money management. Through careful budgeting, Filipino migrant workers can allocate funds for essential things and avoid overspending while eliminating unnecessary expenses.

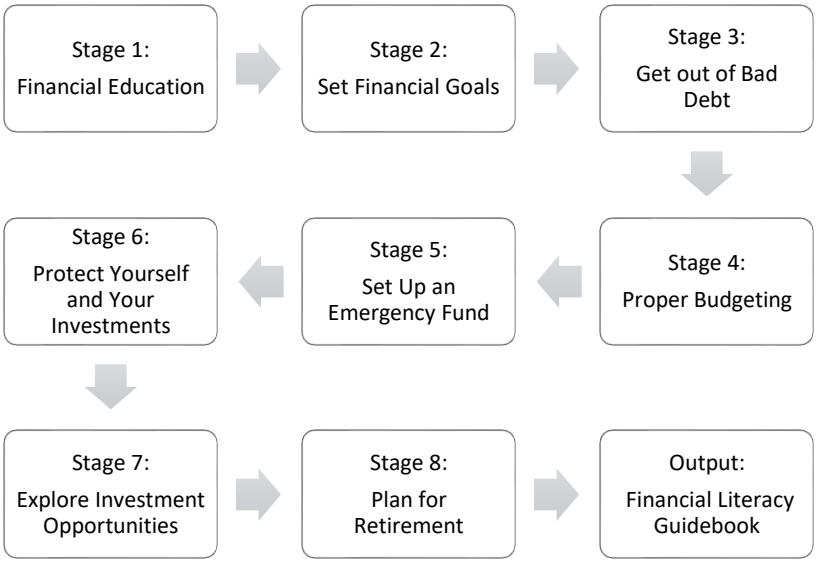
Stage 5 Set Up an Emergency Fund: Establishing an emergency fund is a vital element of a sound financial plan as it provides a cushion during financial hardship. The ideal amount of money for this fund varies depending on one's financial condition, but most financial experts suggest having three to six months of living expenses.

Stage 6 Protect Yourself and Your Investments: One way for OFWs to be financially secure in the future is to have comprehensive insurance, because it protects them from emergencies such as injury, critical illness, accidental death, and repatriation cost. While health and life insurance will help cover unexpected expenses, it will also protect assets and prevent savings from being wiped out.

Stage 7 Explore Investment Opportunities: In order for OFWs to achieve initial financial success so that they can return to the Philippines, a strategic decision to navigate various financial investment instruments and create portfolio diversification may be helpful.

Stage 8: Plan for Retirement: Planning for retirement is essential to prepare for old age.

Figure 2 *Proposed Financial Literacy Model*



This study also recommends that Filipino educators and community leaders integrate the financial literacy guidebook into the intervention program. Moreover, relatives in the Philippines might want to look into entrepreneurial activities that can eventually help lead to financial independence.

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Nasopharyngeal Cancer in Malaysia: Perceived Severity, Susceptibility, and Barriers in Risk Messages[1]

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Abstract

Perceived severity and susceptibility of breast and lung cancers have been extensively studied but perceptions of the threat posed by nasopharyngeal cancer (NPC) is little understood. In this study perceptions were examined regarding the severity and susceptibility to NPC and barriers in taking preventive measures before and after reading specific cancer risk messages. The sample consisted of 65 participants living in the Kuching and Samarahan divisions of Sarawak, Malaysia who had not been diagnosed with NPC. Participants were interviewed about their perceived severity, susceptibility, and barriers towards the cancer before and after reading the NPC pamphlet, produced by the Ministry of Health, Malaysia. A total of 87.7% of participants perceived NPC as a severe disease, as it connotes death, scary symptoms, and disruption to the quality of life. Only 27.7% of participants believed that they were at risk of contracting NPC after reading the pamphlet. The common perceived risk factors were smoking, polluted environment, preserved food, and high NPC incidences in Malaysia. As for perceived barriers, 19% participants reported that living a healthy lifestyle would be hard, while 31% were fearful of screening. The study showed that the risk messages provided participants with more specific and accurate information on NPC.

Keywords: *Nasopharyngeal cancer, perceived severity, perceived susceptibility, barriers*

Introduction

Nasopharyngeal cancer (NPC), commonly known as nose and throat cancer, is a disease that develops in the head and neck region. The early signs are similar to common cold, which is why they are often ignored. Fles et al. (2016) stated that nose and throat cancer may present with (a) nosebleed which may flow into the throat, causing blood-tinged phlegm; (b) pain or blockage in the ear; (c) loss of hearing; (d) headache; (e) double vision; (f) facial pain; (j) numbness; and (h) a lump in the neck. Nasopharyngeal cancer is the fifth most common cancer in Malaysia after breast cancer, colorectal cancer, lung cancer, and lymphoma (Manan et al., 2019). The Malaysian cancer statistics suggest that some groups are more prone to NPC. Cases are higher among Chinese males as NPC ranks third after colorectal cancer and lung cancer with them whereas for Chinese females, NPC ranks ninth. Chinese males and other males (including those of Sabah and Sarawak with an indigenous heritage) are the most susceptible to getting NPC (Devi et al., 2004). Some of the deaths due to NPC can be avoided if the cancer is detected early and treatment is sought. The cancer is often treated using surgery, chemotherapy, and radiotherapy. It is responsive to treatment in the early stages; NPC is sensitive to chemo-radiotherapy and the two and three-year survival rate is 84% and 78%, respectively (Fles et al., 2017). However, in Malaysia, NPC cases are mostly diagnosed at stages 3 and 4 (63% for males, 60% for females; Manan et al., 2019). Regular cancer screening can make it possible to detect NPC early and avert some NPC deaths.

However, at the present time little is known about the awareness of Malaysians towards NPC and whether they recognize the early signs of the cancer. Thus far, studies conducted on NPC have been on its social impact (Armstrong et al., 2000) and on the epidemiology of the disease (Aziz et al., 2017; Prasad et al., 1989). Little is known about the impact of cancer risk messages on intention to undertake health protective measures, particularly how the information may sensitize people to the risks and severity of NPC. This study will provide a better understanding of the factors that cause the Malaysian

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public to seek treatment for NPC when the cancer is already developed. The information on Malaysian public's health motivations posters, with regards to seeking NPC treatment, will be useful in education programs to reduce barriers that prevent individuals from undertaking cancer screening or seeking treatment.

In this study perceptions of severity and susceptibility of NPC and barriers in taking preventive measures were examined before and after reading NPC risk messages.

Literature Review

The Health Belief Model (HBM) is a widely used social cognition model in health psychology (Becker et al., 1977; Rosenstock et al., 1988). The model has been used to understand the failure of people to adopt disease prevention strategies and screening for the early detection of disease. The following explanation of HBM is based on Strecher and Rosenstock (1997).

The HBM posits that people's health behaviors are influenced by four belief constructs: Perceived susceptibility (risk of getting diseases), perceived severity (seriousness of health conditions), perceived benefits (usefulness of taking recommended health behaviors), and perceived barriers (obstacles to taking recommended health behaviors). These four belief constructs influence intention to perform health behaviors. Two additional constructs added to HBM were self-efficacy (confidence in own ability to take action) and response efficacy (confidence in the effectiveness of the health measures).

The HBM is appropriate for a study on perceptions of susceptibility, severity, and barriers based on studies conducted on other diseases. In oral health, Hollister and Anema (2004) found that the primary caregiver must believe that the child is susceptible to dental caries, it is a serious threat, and that the condition can be prevented if they undertake behavioral changes. The health model has also been employed in studies on breast and cervical cancer (Austin et al., 2002; Thomas et al., 2005). In studies on HIV using HBM, perceived susceptibility does not influence intention to minimize HIV risk, but prior perceptions of AIDS and past behavior exerts a stronger influence on behavioral intentions (Adams et al., 2014). Past behavior, response efficacy, beliefs, and barriers influenced intentions to adopt safer sex practices (Hingson et al., 2007). With HIV, the single perceived barrier is condom use (Hounton et al., 2005). The belief barriers relevant to NPC are not known.

What is currently known, from the research literature, about the risk factors for NPC are that Epstein-Barr virus infection, smoking, frequent consumption of salted fish, and preserved food are the most significant (Zheng et al., 1994). Non-environmental risk factors of NPC include family history, gender, and ethnicity (Fles et al., 2017). On the severity of the cancer, NPC can cause conditions ranging from nosebleed and ear pain to numbness (Fles et al., 2016). Ting et al. (2021) found that there was a general fear of cancer and of the side-effects of chemotherapy and imminent death, but the Malaysian participants in their study could not highlight specific symptoms or the consequences of the cancer. This shows a lack of awareness regarding the risks and severity of NPC.

Information on severity, susceptibility, benefits, and barriers in health risk messages may influence motivation to adopt health protective measures. Arpan et al. (2017) reported that integrated, affirming texts in public service announcements increased self-efficacy and intention to reduce risky behaviors. McCall and Ginis (2004) found that patients in a cardiac rehabilitation program who read gain-framed messages exercised more than those who did not read any such messages. Investigation of responses to belief constructs in cancer risk messages will push the HBM framework further.

Method of Study

The descriptive study involved interviews with 65 participants, aged 13–65, living in Kuching (capital of the East Malaysian state of Sarawak) and Kota Samarahan districts. Table 1 shows the demographic characteristics of the participants. A majority were students and working adults from Chinese and Malay ethnic backgrounds, who had university qualifications. There were more participants aged 13–40 as compared to participants aged 51–70. This was on account of the locality of the data collection, which was mainly in schools and at conferences. All the participants had not diagnosed with NPC.

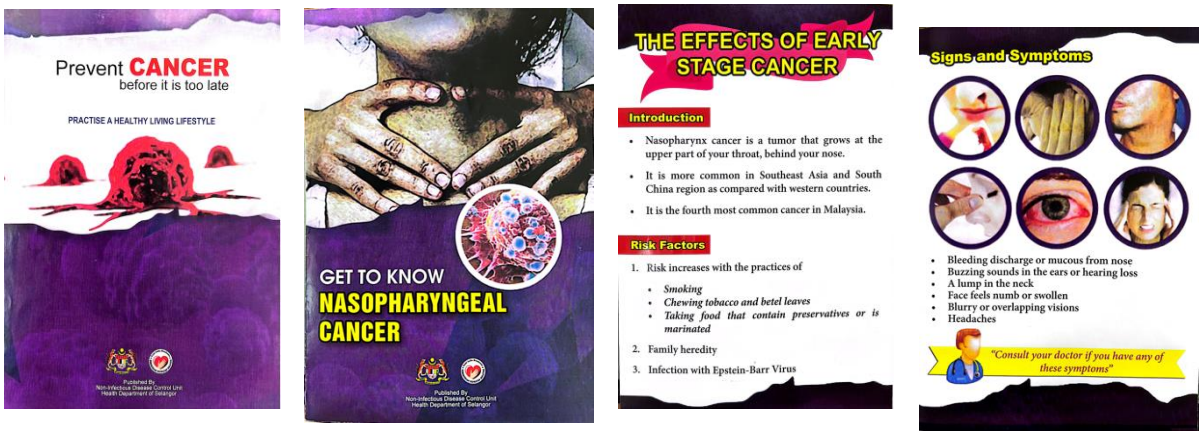
The instruments used were a NPC pamphlet produced by the Ministry of Health Malaysia (Figure 1) and a semi-structured interview guide. Appendix 1 shows the interview questions on perceived severity and susceptibility towards NPC and perceived barriers to preventive measures, which were formulated based on HBM.

Table 1 *Demographic Characteristics of the Participants* (*N* = 65)

Demographic Characteristic		*n*	**%**
Gender	Male	37	56.9
	Female	28	43.1
Age (Years)	13–20	14	21.5
	21–30	20	30.8
	31–40	14	21.5
	41–50	12	18.5
	51–60	3	4.6
	61–70	2	3.1
Ethnic Background	Malay	20	30.8
	Chinese	29	44.6
	Indian	1	1.5
	Bidayuh	4	6.2
	Iban	5	7.7
	Others	6	9.3
Education	Primary 6	4	6.2
	Form 3	6	9.2
	Form 5	4	6.2
	Certificate	3	4.6
	Form 6	5	7.7
	Bachelor	23	35.4
	Masters and Ph.D	20	30.8
Monthly Income	Not working	19	29.2
	< RM2000	7	10.8
	RM 2000–RM 3999	13	20.0
	RM 4000–RM 5999	5	7.7
	RM 6000–RM 7999	5	7.7
	RM 7999–RM 9999	9	13.8
	> RM 10000	7	10.8

Figure 1 *Original Nasopharyngeal Cancer Pamphlet Produced by the Ministry of Health, Malaysia*

Figure 2 *NPC Pamphlet Translated into English Language*



For the data collection, participants were asked Questions 1–10 (Appendix 1) and given a few minutes to read the NPC pamphlet. Then, they were asked Questions 11–25. The mean time taken by the participants to read the health pamphlet was 48 seconds. The interviews lasted from 13 minutes to 56 minutes. The marked differences in the time taken for the interviews was due to the participants' speed in reading and understanding the pamphlet and the extensiveness of responses to the interview questions, which was influenced somewhat by their interest and knowledge of NPC.

For the data analysis, the audio-recorded interviews were transcribed verbatim. Thematic analysis of the interview transcripts was carried out following Rubin and Rubin (2012) to identify themes and sub-themes related to susceptibility, severity, and barriers. Concept maps were drawn to show the results for the three constructs of health belief. Perceived benefits were not examined in this study.

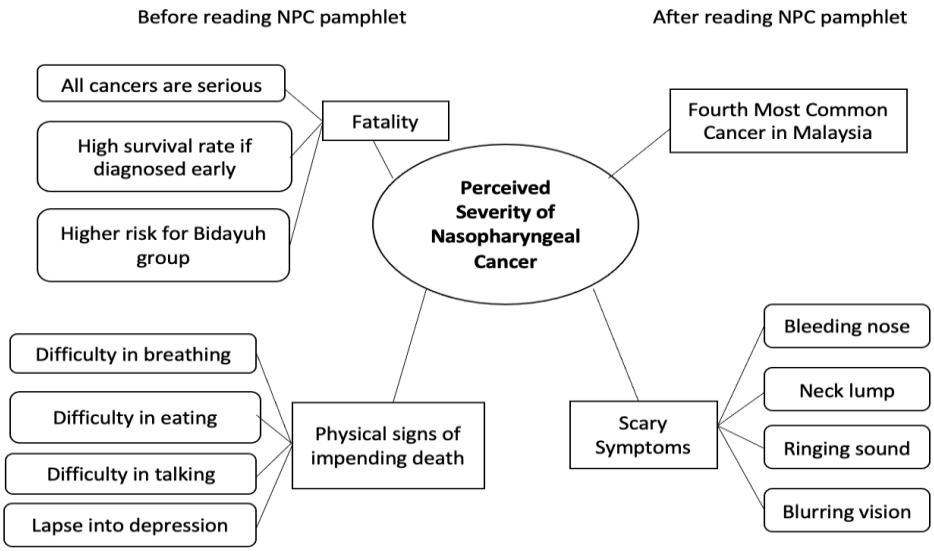
Results

In this section, results on perceived severity, perceived susceptibility, and perceived barriers are presented. The participants are referred to using codes, P1 for Participant 1 to P65 for Participant 65.

Perceived Severity of Nasopharyngeal Cancer

The interview results showed that the four most frequently perceived severities of nasopharyngeal cancer were fatality, disruption to the quality of life, scary symptoms, and NPC being the fourth most common cancer in Malaysia (Figure 3).

Figure 3 *Perceived Severity of Nasopharyngeal Cancer*



The analysis showed that 87.7% (or 57) out of 65 participants perceived NPC as a serious disease. Two participants did not know much about NPC, while two were unsure about the severity of NPC. Another four had more knowledge of NPC, indicated by comments that NPC was "pretty common" and severity was linked to the stage of the cancer ("depends on the stage").

To 17 participants, the word "cancer" itself was synonymous with the severity of the disease. Participant 4 said, "Since the word cancer is there, I think it is serious." The severity of NPC is due to its deadliness and incurability. Participant 52, a Chinese postgraduate, stated that the word "cancer" leads to fatality. A further comment (Excerpt 1) was: "Yes, because the pamphlet mentioned it's the fourth most deadly cancer that is found in Malaysia. I feel the public should be aware of this."

Many participants paid attention to the statistics on NPC being the fourth common cancer in Malaysia provided in the NPC pamphlet. The incurability of cancer was highlighted by Participant 11, a sales executive in her twenties: "Any form of cancer is a serious disease … because … er … the rate of … er … what do you call that … the rate for you to be cured is very little for cancer."

The second reason given by participants to explain why they considered NPC a severe disease was the physical signs of impending death. The participants brought up four early signs of NPC, which were difficulty in breathing, eating, talking, and depression. The physical discomfort caused by damage to the nose and throat area was highlighted by P5, a Malay assistant administrator, in Excerpt 3, as follows. "Because we are breathing using our nose and then we eat using our throat. So if that one erm … have *rosak* [not functioning], you cannot eat properly, you cannot eat the food you like."

Participants 23, 37, 42, 47, and 53 were also aware that damage to the nasopharynx would cause difficulty in breathing, eating, and talking. The physical debilitation may lead to depression.

Thirdly, the perception of severity of NPC was derived from the "scary symptoms of NPC" shown in the NPC pamphlet. A Bidayuh technician, P16, reasoned that NPC was serious because "If you constantly have blood coming out from your body, it is serious. It is not normal." There were six other participants who found the "blood symptom" scary (e.g., bleeding, blood stains, blood comes out, so much blood).

Two participants were the exception. Participant 25, a Vietnamese lecturer, felt that the NPC symptoms listed in the pamphlet were not scary and represented normal flu symptoms, as indicated in Excerpt 4.

> Not really. You put like this [hands and nose], it's just like you have flu. This is just, red eyes? This one [hands covering ears], noisy? In your childhood, all of us experience at least once [ear ringing]. To me, it is not serious.

To make the NPC pamphlet more effective in scaring people, a Malay executive officer, P2, suggested that photographs of real people and the word "danger" should be used (Excerpt 5).

> I think the brochure is very safe. It's not … the pictures are not real. If you have real pictures, real faces. I think you can put here. Be more simpler. But … this is simple, macam mana cakap [how to say]. Need to be more interactive la. Kalau boleh [If possible]). This is good actually … But … perhaps the picture is not impactful. And I think you have to put the website ke … ya something like that. And then, dia punya ini pun, the tajuk [the title], instead of kenali [Get to know], kita boleh cakap bahaya [we can say danger].

Of the four aspects of NPC severity, three (fatality, physical signs of impending death, scary symptoms) were found in the NPC pamphlet, but information on the consequences of the cancer to life came from the participants' own experiences and knowledge.

Perceived Susceptibility

Table 2 shows that the NPC pamphlet informed the participants on the risks of developing the cancer, as shown by the reduced percentages of those who reported that they were not at risk or did not know anything about the risk. For those who had some idea of their risk, the percentage increased from 35.4% to 44.6%. The percentage also increased for the group who were certain that they were at risk (from 20% to 27.7%).

Table 2 *Perceived Susceptibility of NPC Before and After Reading the NPC Pamphlet*

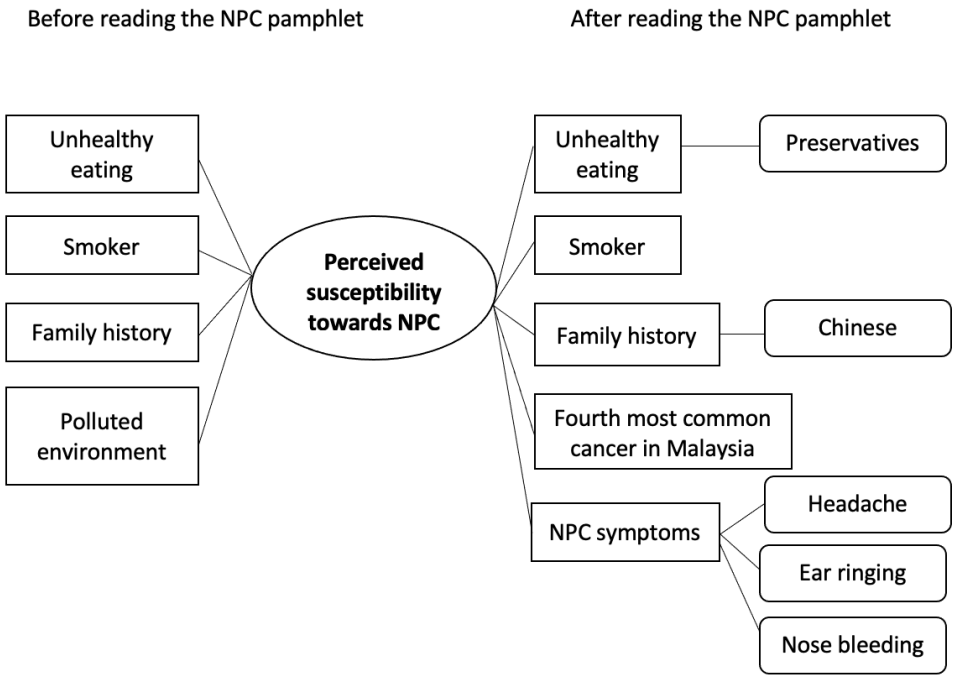
Perceived Susceptibility	Before Reading the Pamphlet	After Reading the Pamphlet
Not at risk	21 (32.3%)	18 (27.7%)
Maybe at risk	23 (35.4%)	29 (44.6%)
Yes, at risk	13 (20.0%)	18 (27.7%)
Do not know	8 (12.3%)	0 (0%)

Figure 4 shows participants' perceived susceptibility to NPC before and after reading the NPC pamphlet. It also shows the participants' perceptions on risk factors predisposing to NPC. Before reading the NPC pamphlet, the participants said that smoking, unhealthy eating, family history, polluted environment, age, and ethnic background were risk factors. Smoking was listed as the first factor in the NPC pamphlet, but before reading it, most of the participants already identified smoking as a common cause for cancer. Participant 3, a retiree, who initially said "No [I'm not susceptible to NPC], I don't smoke" changed his mind after reading he pamphlet. He said, "Probably, probably. If you avoid [the risk factors], then it [NPC] won't happen. If you don't avoid, and continue, then it'll happen."

After reading the NPC pamphlet, additional symptoms mentioned by participants as indicative of NPC were headache, ear ringing, and nose bleeding. They felt that if they already experienced the early symptoms of NPC, they might have NPC. Before reading the NPC pamphlet, they mentioned unhealthy eating as a cause of NPC, but the pamphlet alerted them to the danger of preserved food. Generally, unhealthy food is thought of as salty and oily food in Malaysia, but fewer people put preserved food in this category.

Interestingly, although Epstein Barr virus infection was listed as a risk factor in the NPC pamphlet, none of the participants mentioned it after reading the pamphlet. They continued to mention the three risk factors that were not stated in the pamphlet, that is, polluted environment, age, and ethnic background. These items represented general knowledge that they had acquired from various sources. Excerpts will be shown to show their level of knowledge on these risk factors.

Figure 4 *Participants' Perceived Susceptibility of NPC Before and After Reading the NPC Pamphlet*



On the polluted environment, P59, a researcher on NPC, recounted her childhood memories when she was helping her dad in a wood factory. After reading the pamphlet, she said she was not

susceptible to NPC because she consumed healthy food, went for regular screening, and exercised regularly. Her responses are given in Excerpt 6 as follows: (Before reading the NPC pamphlet): "If I eat a healthy diet, I'm fine. And do regular check-up. Exercise more. Eat healthy food. Try to … if you're working in a carcinogenic environment, you try to follow the working procedures." (After reading the NPC pamphlet): "Even though sometimes we lead a healthy lifestyle, there are still people who smoke, and there's family genetic issues."

This educated participant used the adjective "carcinogenic" to describe the environment based on her prior knowledge of NPC. Her post-reading responses showed that she had gained new information from the NPC pamphlet that eliminated her risk to NPC on account of her early exposure to wood dust.

On the susceptibility of certain ethnic groups to NPC, apparently some participants were informed. For instance, P30, a lecturer, believed that he could be at greater risk of NPC because he was a Chinese (Excerpt 7).

> First thing, I'm a Chinese. Second thing, it's the fourth highest cancer in Malaysia. Even if I don't smoke, the risk is still high. You look at the genetic, it is also one of the important factors. In other words, Malaysians are susceptible to NPC.

Another participant (a postgraduate student) with some knowledge on NPC knew that the Bidayuh group of Sarawak was also susceptible to NPC (Excerpt 8).

> As a master's student, I focus on … I did quite an amount of literature review, so I think that in Sarawak, it's a very crucial issue that I think is awaited to be supported, because among the Bidayuh group especially, the risk of getting nasopharyngeal cancer is relatively higher. (Source: P2)

Devi et al. (2004) reported the high incidence of NPC among Chinese and Bidayuh in Malaysia. Since the risk factors given by the participants before and after reading the pamphlet were similar, this shows that the pamphlet may have been effective in only identifying preserved food as unhealthy food and alerting them to early signs of NPC.

Perceived Barriers

Figure 5 shows the two perceived barriers to taking measures to avoid NPC, which participants talked about after reading the recommended actions in the NPC pamphlet. A small proportion (19%) of the participants found it challenging to lead a healthy lifestyle because they lacked discipline and were busy with work or study. Another 14% reasoned that consulting a doctor was difficult and gave reasons such as "financial constraints," "no time," and "fear of pain and facing the truth."

When asked if they would like to lead a healthy a lifestyle, 100% of the participants agreed they did. However, when asked if it would be easy for them to lead a healthy lifestyle, eight participants reasoned that self-discipline was the barrier preventing them to do so. A Malay executive in her twenties, P2, expressed her desire to lead a healthy lifestyle, but gave in due to her bad habit of unhealthy food intake and peer influence (Excerpt 10).

> Because you see, it's hard to break the habit. It's the habit. Besides, the culture don't allow us to change the habit. I'm not sure about Sabah and Sarawak. When I went Sabah and Sarawak, I don't see 24 hours mamak stall. But in Kuala Lumpur [the capital of Malaysia], we've 24 hours mamak stalls, KFC, Starbucks. It's very accessible. So if you don't get it, it's just like not a normal person, not normal person, you're just … not keep up with the trend. Peer influence, I think.

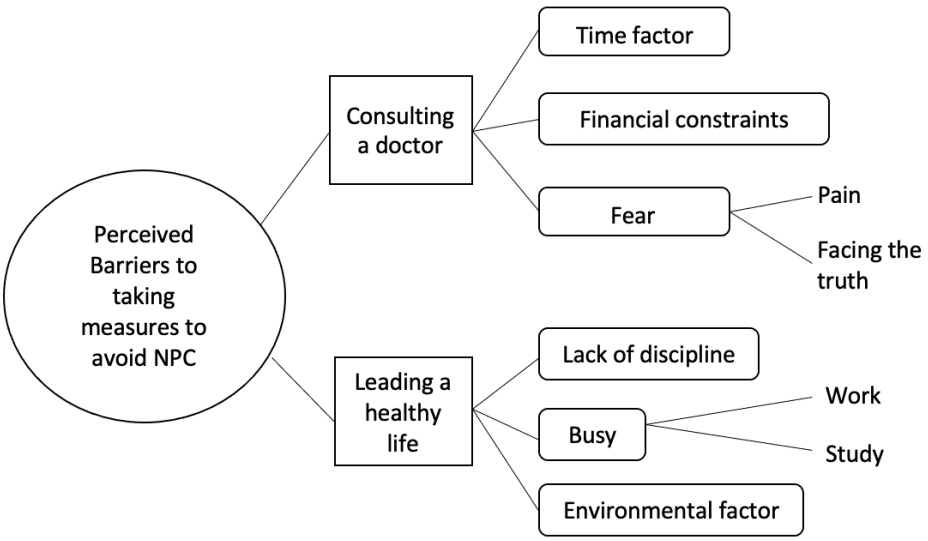
Besides unhealthy food like instant noodles and junk food (P6), participants also found it hard to exercise regularly. Participant 8, an Indian assistant administrator, said that it was hard for him to set aside time for exercising (Excerpt 11).

> (Laughs) It's not easy. Sometimes, we don't think, especially when we work. Normally, we will put aside this unhealthy lifestyle, because of stress. When we go home, it's so hard for us to exercise for 30 minutes. But maybe for eating, that one we can do. Not for exercise, because that needs time.

Secondly, consulting a doctor to avoid NPC was a main barrier to 14% of the participants. The reasons given were time and financial constraints, and fear of pain and fear of facing the truth. The perceived barriers for P47, a Malay lecturer in his forties, were as follows (Excerpt 12).

> No, I don't hate going to the doctor for consultation. But I really feel bad with the consultation that take too long time, when it shows only a symptom. For those who have money, they can go to private clinics. But you don't have money, so you have to go to the public clinics, the government clinics and all those. And then it so happens that you've to wait. I mean you've to wait at 7am because you know the clinic is full with patients of course it's free, isn't it?

Figure 5 *Perceived Barriers to Taking Measures to Avoid NPC After Reading the NPC Pamphlet*



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The final barrier preventing them from seeking medical consultation was fear of pain and fear of facing the truth. Participant 60, an undergraduate student, said that she "feel scared" to consult the doctor. Similarly, P14, an indigenous administrator revealed her fear of facing the truth of cancer (Excerpt 13).

> Usually it's either I'm neglecting the fact that I may be sick, or I am afraid of these things that are happening to me or I'm trying my best not to accept the reality that it could, it's not the symptoms of nose and throat cancer. Yeap, like the fear of it.

To sum up, the barriers preventing participants from consulting a doctor were time, finance, and fear, while the barriers preventing them from leading a healthy lifestyle were time and lack of discipline. In this study, information on the participants' perceived barriers to taking actions to minimize NPC risk was obtained after they had viewed the pamphlet. Due to the sequence of interview questions, their perceived barriers before viewing the pamphlet was not elicited. The interview began with questions on perceived risk and severity and the focus then turned to barriers in the last part of the interview. They were not directly asked about barriers but they provided the information as a justification of whether it was easy or difficult for them to consult the doctor if they had NPC symptoms and to lead a healthy lifestyle to avoid getting NPC. The data on barriers were also obtained through an open question on whether it was easy or difficult for them to take the recommended actions in the pamphlet. The information in the pamphlet was mostly on NPC risk and severity, which was why we investigated the changes in these perceptions before and after reading the pamphlet. The pamphlet did not address barriers. Furthermore, it is unlikely that barriers would have changed after viewing the pamphlet, as this comes from an individual's personal experiences and their situation.

Discussion

The study on perceived susceptibility, severity, and barriers before and after reading an NPC pamphlet yielded three notable findings. First, the study showed that the noun "cancer" conjured fear among the general public. It brought images of sick and suffering patients, losing weight, undergoing chemotherapy, and lying on one's deathbed. Second, we showed that perceptions of susceptibility towards NPC could be changed after exposure to health risk messages in pamphlets. For example, P30 switched from using the first personal pronoun "I" to "Malaysians" when he was assessing his risk of getting NPC. He did not utter "I am susceptible to NPC." By unconsciously using a third person reference, he distanced himself from the perceived risk of NPC. Nonetheless, while individuals' perceptions may change, the topic of cancer remains taboo in Malaysia. This is seen in research that found hesitation among people in assessing their risk of NPC (Ting et al., 2018). They reported that some individuals believed that if they estimated their risks to be high, it is as if they were cursing themselves with cancer; yet, they were afraid to assess their risk as low because it showed that they did not believe in God's control over their lives.

Finally, the study revealed that Malaysians encounter barriers when it comes to leading a healthy lifestyle and consulting a doctor to avoid ailments. The result confirms previous findings that patient-reported barriers to cancer screening were fear, lack of information, time, access to care, and absence of physician advice (McLachlan et al., 2012). Another study revealed that barriers to screening were financial constraints, low self-worth, and negative past experiences with screening (Jones et al., 2010). Though screening can be effective in early cancer detection at treatable stages, a large proportion of people at risk have not been screened or are not screened regularly, as recommended by National guidelines (James et al., 2002).

Conclusion

The study on NPC perceptions showed increased knowledge of the cancer, moderate perceived severity, moderately high perceived susceptibility, and weak perceived barriers towards NPC after exposure to NPC risk messages in a pamphlet produced by the Malaysian Ministry of Health. The most striking finding from our study was the changes of expressions participants used to describe their health beliefs towards NPC before and after reading the NPC pamphlet. The expressions used after participants had viewed the pamphlet suggested that participants have gained new knowledge about NPC. It is hoped that future NPC health communication can address the fears of seeking medical attention and highlight the significance of overcoming time and financial barriers. When the public is aware of the severity, susceptibility, and barriers of NPC, they would be willing to go for regular screening, which would lead to earlier detection of NPC and better treatment and survival outcome. To our knowledge, our study is the first in Malaysia to report perceptions of severity and susceptibility towards NPC and perceived barriers to taking preventive measures to reduce NPC risk. However, the findings are limited to the people who are residing in Kuching and Kota Samarahan districts of Sarawak. Research in other communities residing in other places should be conducted.

Acknowledgement

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Appendix 1: Semi-structured Interview Guide on NPC

1. Have you heard of nose and throat cancer?
2. If yes, where and how did you learn about this cancer?
3. How do you know if a person has nose and throat cancer?
4. What do you think are the signs of nose and throat cancer?
5. Do you think nose and throat cancer is a serious disease?
6. What makes you say so?
7. What do you think are the causes of nose and throat cancer?
8. Do you think you might be at risk of nose and throat cancer?
9. What makes you say so?
10. What would you do to prevent nose and throat cancer? [Show the NPC pamphlet]
11. Is there anything new you learnt about nose and throat cancer?
12. If so, what are the new things learnt?
13. This pamphlet makes me feel that I am risk of nose and throat cancer. (1–*strongly disagree*; 7–strongly agree)
14. Why do you circle that?
15. This pamphlet makes me feel that nose and throat cancer is serious. (1–*strongly disagree*; 7–*strongly agree*)
16. What makes you think so?
17. What does this pamphlet recommend you to do to avoid nose and throat cancer?
18. Would you consult the doctor to avoid nose and throat cancer if the symptoms show? (1–*definitely no*; 7–*definitely yes*)
19. What makes you think so?
20. Is it easy for you to consult the doctor if the symptoms show? (1–*very hard*; 7–*very easy*)
21. What makes you think so?
22. Would you lead a healthy lifestyle to avoid nose and throat cancer? (1–*definitely no*; 7–*definitely yes*)
23. What makes you think so?
24. Is it easy for you to lead a healthy lifestyle? (1–*very hard*; 7–*very easy*)
25. What makes you think so?

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Factors Affecting Adoption of Knee Osteoarthritis Preventive Behavior among the Elderly in Saraburi Province, Thailand

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Abstract

A cross-sectional survey was initiated to study the factors affecting adoption of preventive behaviors regarding knee osteoarthritis among the elderly in Nong Yang Suea Subdistrict, Muak Lek District, Saraburi Province. The PRECEDE-PROCEDE Framework model was adopted as the basis for the investigation. The population chosen consisted of elderly people aged 60 years and over who had never been diagnosed with osteoarthritis. Data were collected, via a specially generated questionnaire, from 285 respondents selected using proportional quota sampling. The questionnaire possessed acceptable internal consistency (Cronbach's Alpha Coefficient of .82). Data were analyzed by utilizing descriptive statistics, *t*-test, Pearson's correlation coefficient, and stepwise multiple regression analysis. The results showed that the overall adoption of osteoarthritis preventive behaviors by the elderly was at a moderate level (78.6%). The predisposing, enabling, and reinforcing factors were associated with the adoption of preventive behaviors for osteoarthritis in the elderly. The predisposing factors, which include perceived self-efficacy and attitude to prevent osteoarthritis, the enabling factors, which involve the arrangement of the home environment, and reinforcing factors, which involve the social support, were able to predict (31.9%) the osteoarthritis preventive behaviors adopted by the elderly ($p < .05$).

Keywords: *Preventive behaviors, knee osteoarthritis, elderly, Precede-Proceed Framework*

Background and Importance of the Problem

At present, the aging population around the world has caused an increase in the rate of illnesses from chronic non-communicable diseases. Osteoarthritis fits into this category (Worathanarat et al., 2014). In Thailand, data from the Ministry of Public Health for the years 2007 to 2009 indicated that the number of patients in the country with knee osteoarthritis per 100,000 population was 33.87%, 38.90%, and 40.54%, respectively. If classified by region, it was found that the central region had the highest number of osteoarthritis cases (Bureau of Policy and Strategy, 2009). Among the elderly in Thailand, osteoarthritis is one of the top five health problems. The others are, in order of importance, hypertension, diabetes, having less than 20 active teeth, and depression (Kanyayant et al., 2020).

Osteoarthritis involves the deterioration of the knee joint, also known as degenerative joint disease, characterized by the chronic and permanent pathology of articular cartilage and the destruction of articular cartilage, which occurs slowly (Hochberg et al., 2012). According to statistics from Thailand in 2010, there were more than six million patients with orthopedic disease. The most degenerative of these occurs in the knee joint (Pereira et al., 2011), as the knee must support all parts of the body. Age is one of the many risk factors for osteoarthritis (Charoenchonwanich, 2016).

Knee degeneration has many causes. Degeneration may be caused by deterioration of the cartilage with age. Up to 40% of people over 60 years have osteoarthritis of the knee. It is two to three times more frequently found in women than in men. Overweight people are at greater risk of knee degeneration, as are those whose knees have been exposed to long term usage, incorrect posture, or activities that put a lot of pressure on the knee joint. Such assaults cause defects in components of the joints, such as loose knee joints and weak thigh muscles. Alternatively, damage may be caused by accidents resulting in injuries to ligaments and chronic injuries in knee joints (Royal College of Orthopedic Physicians of Thailand, 2011).

The factors relating to beneficial self-care behaviors adoption among the elderly with osteoarthritis were optimizing knee physiology and body mass index monitoring. Related factors such as the diligence shown by the primary caregiver, the living conditions of the house, and stress reduction all contributed to a positive outcome (Singha et al., 2015). Although osteoarthritis is not life-

threatening, it has significant and adverse consequences, which can cause chronic disabilities affecting both physical and mental health. In severe cases, it causes a lot of pain, joint deformities, and disabilities. This affects both physical and mental health, the career of patients, and family welfare—causing considerable economic, labor, and social loss and heightened resource utilization (Orthopedic Decade Foundation, 2011).

From the information mentioned above, it can be seen that the incidence of osteoarthritis is continuously increasing among the elderly in Thailand. The role of community health personnel and nurses is to emphasize preventive measures regarding health problems identified in the community. Therefore, the current researchers were interested in studying the preventive behaviors adopted for osteoarthritis among the elderly in Nong Yang Suea sub-district, Muak Lek District, Saraburi. This is a locality where preventive behaviors among the elderly with respect to osteoarthritis has never been studied. The Nong Yang Suea subdistrict is divided into 14 villages (March 29, 2016 civil registration figures). Health care is under the responsibility of the Subdistrict Health Promoting Hospital of Nong Yang Suea consisting of seven villages and Khlong Sai Sub-district Health Promoting Hospital, seven villages. The results of this study will be used to develop plans for enhancing and minimizing elderly health problems, which will contribute to sustainability and improve the quality of life among the elderly.

Research Objectives

1. To study the prevention behavior of osteoarthritis among the elderly in Nong Yang Suea sub-district, Muak Lek District, Saraburi.

2. To study the factors affecting adoption of preventive behaviors for osteoarthritis among the elderly in Nong Yang Suea Subdistrict, Muak Lek District, Saraburi. Predisposing factors considered were gender, age, body mass index, education level, occupation, income adequacy, chronic health problems, history of knee injury/accident and severity of osteoarthritis using the Oxford Knee Score, knowledge, attitude, and perceived self-efficacy. Enabling factors investigated included the arrangement of the home environment, and reinforcing factors included social support from family/caregivers, neighbors, and health workers.

Research Hypotheses

1. The predisposing, enabling, and reinforcing factors are associated with preventive behaviors for osteoarthritis among the elderly, with a statistically significant at the .05 level

2. The predisposing, enabling, and reinforcing factors affect the behaviors adopted for preventing osteoarthritis among the elderly, with a statistical significance at the .05 level

Research Conceptual Framework

A cross-sectional survey was adopted to study factors affecting preventive behaviors and prevention of osteoarthritis among the elderly. This was accomplished by applying the conceptual PRECEDE-PROCEED Framework model (see Figure 1), including concepts and research findings related to three E-behaviors (eating, exercise, emotion), including the theory of prevention of osteoarthritis.

Research Methodology

This was a cross-sectional research study which aimed to study factors affecting adoption of behaviors to prevent knee osteoarthritis in respondents at Nong Yang Suea Subdistrict, Muak Lek District, Saraburi.

Population and Sample

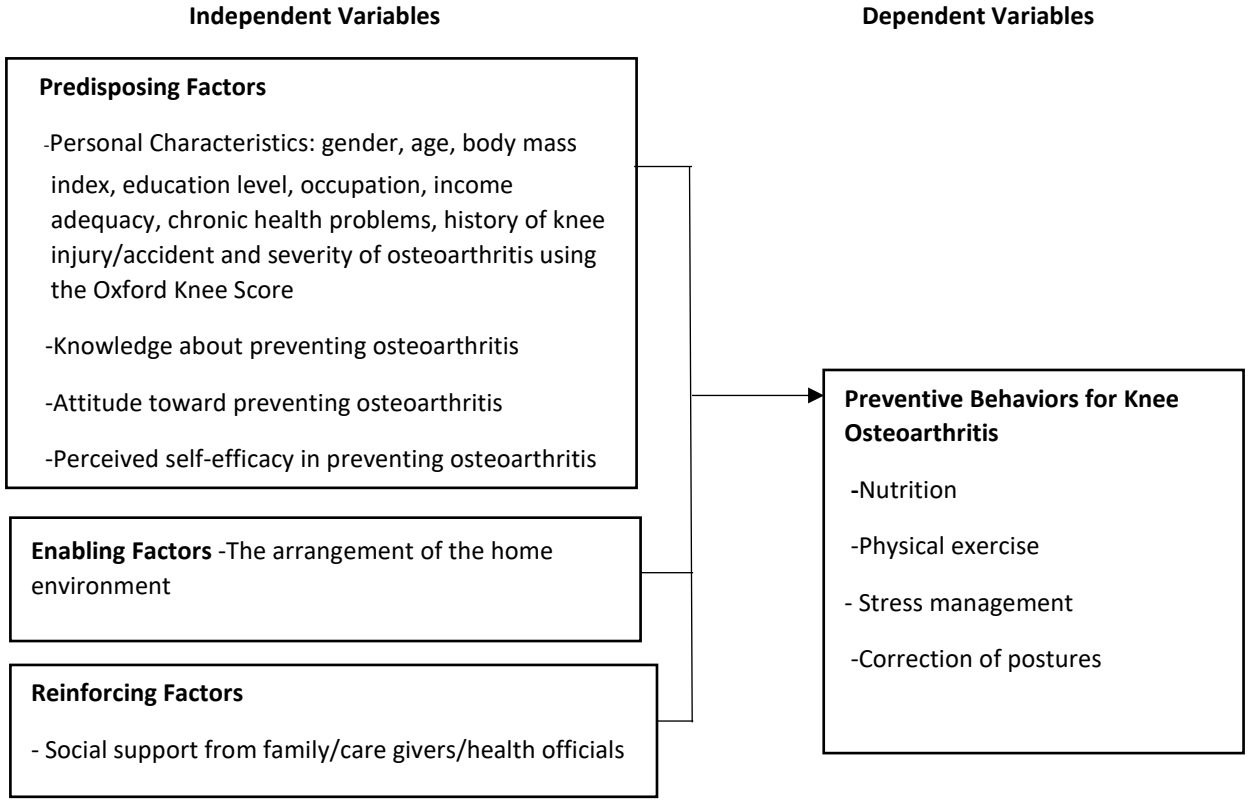
Population

The population refers to people aged 60 years or more who live in Nong Yang Suea Sub-district, Muak Lek District, Saraburi Province, or 1,048 people (information from Muak Lek District Public Health Office, Saraburi Province, June 16, 2019) who had never been diagnosed with knee osteoarthritis by a physician.

Sample Group

The sample consisted of respondents aged 60 years and above living in Nong Yang Suea Subdistrict, Muak Lek District, Saraburi Province, which came to 285 people. The calculation of the sample size was done by using Proportional Quota Sampling.

Figure 1 *Research Conceptual Framework*



Data Collection Tool

The tool used in this research was a questionnaire created by the researchers in question form per the theoretical concepts used in the study, together with a review of the relevant literature to cover the scope of the study's content and objectives. The data collection questionnaires consisted of 4 parts:

Part 1: Predisposing Factors consisting of 4 sections

Section 1: Personal characteristics of the population group, consisting of gender, age, body mass index, education level, occupation, income adequacy, chronic health problems, history of knee injury/accident, and severity of knee osteoarthritis using the Oxford Knee Score.

Section 2: Knowledge about preventing knee osteoarthritis, consisting of meaning, cause, symptoms, risk factors, and treatment on a five-point rating scale questionnaire (strongly agree, agree, somewhat agree, disagree, strongly disagree).

Section 3: Attitude toward preventing knee osteoarthritis, consisting of belief and opinion in self-care preventive behavior on a five-point questionnaire (strongly agree, agree, somewhat agree, disagree, strongly disagree).

Section 4: Perceived self-efficacy in preventing knee osteoarthritis, consisting of nutrition, physical exercise, stress management, proper manner in walking, sitting and avoiding knee injury on a five-point questionnaire (strongly agree, agree, somewhat agree, disagree, strongly disagree).

Part 2: Enabling Factors consisting of 1 section

Section 5: Arrangement of home environment, consisting of placement of home appliances, organizing the environment around the house on a five-point questionnaire (*strongly agree*, *agree*, *somewhat agree*, *disagree*, *strongly disagree*).

Part 3: Reinforcing Factors consisting of 1 section

Section 6: Social support from family/care givers/health officials, consisting of advice on nutrition, physical exercise, stress management, proper manner in walking, sitting and avoiding knee injury on five-point questionnaire (every day, 5–6 times per week, 3–4 times per week, 1–2 times per week, never).

Part 4: Preventive Behaviors for Knee Osteoarthritis consisting of 1 section

Section 7: Preventive behaviors for knee osteoarthritis of the respondents, consisting of nutrition, physical exercise, stress management, proper manner in walking, sitting and avoiding knee injury on five-point questionnaire (every day, 5–6 times per week, 3–4 times per week, 1–2 times per week, never).

Criteria and Interpretation

The criteria and interpretation of the questionnaire is calculated by using range (Ritjaroon, 2014), and divided into three levels as followings:

- severity of knee osteoarthritis using the Oxford Knee Score: a) satisfactory joint function = 40–48; b) mild to moderate knee osteoarthritis = 30–39; c) moderate to severe knee osteoarthritis = 20–29; and d) severe knee osteoarthritis = 0–19.
- Knowledge in preventing knee osteoarthritis: a) the highest level, with scores from 48–64; b) moderate level, with scores from 31–47; and c) low level, with scores from 13–30.
- Attitude toward preventing knee osteoarthritis: a) the highest level, with scores from 52–70, b) moderate level, with scores from 33–51; and c) low level, with scores from 14–32.
- Perceived self-efficacy in preventing knee osteoarthritis: a) the highest level, with scores from 55–75; b) moderate level, from 35–54; and c) low level, from 15–34.
- Arrangement of the home environment divided into three levels: a) the highest level, with scores from 45–60; b) moderate level, from 29–44; and c) low level from 12–28.
- Social support from family/care givers/health officials: a) the highest level, with scores from 45–60; b) moderate level, from 29–44; and c) low level from 12–28.
- Preventive behaviors for knee osteoarthritis of respondents: a) the highest level, with scores from 89–120; b) moderate level, from 57–88; and c) low level from 24–56.

Psychometric Evaluation of the Questionnaire

The questionnaire's reliability was tested on respondents in the Muak Lek District, Saraburi Province. The respondents were a group of 30 who possessed similar criteria to our study. Results were calculated as a reliability coefficient using Cronbach's Alpha Coefficient Method, with a reliability value equal to .82.

Planning Research Ethics to Protect the Rights and Confidentiality of Research Participants

In this study, the rights of participants were protected. This research project was approved by the Human Research Ethics Committee of Asia-Pacific International University. Sample group members could terminate their participation without giving a reason to the researchers. The information in the questionnaire was kept confidential and not disclosed; hence, the results were summarized as a whole.

Data Analysis

The data were analyzed using a statistical software program; the following statistics were used:

1. Descriptive Statistics were used to describe the information on predisposing factors, enabling factors, reinforcing factors, and preventive behaviors for osteoarthritis of the elderly. This was presented in the form of a table showing frequency, percentage, mean, and standard deviation (*SD*).

2. Analytical Statistics

2.1 Analysis of relationships between the predisposing factors, with a nominal scale and an ordinal scale (gender, body mass index, chronic health problems, history of knee injury/accident) and preventive behaviors for musculoskeletal syndrome, was accomplished by using a *t*-test and one-way ANOVA.

2.2 Analysis of relationships between the predisposing, enabling, and reinforcing factors with an interval scale, and adoption of preventive behaviors for osteoarthritis among the elderly, was accomplished using Pearson's correlation coefficient.

2.3 Analysis of the success of preventive behaviors moderating the occurrence of osteoarthritis in the elderly was accomplished using stepwise multiple regression analysis.

Research Results

Predisposing Factors

Most respondents were female (67.7%) with an average age of 68.4 years. A total of 63.5% had a body mass index lower than 25, most (74.7%) had finished primary education, worked as hired employees (29.5%), and earned an adequate income with some savings (38.2%). Of this number, 80.7% had chronic health problems, and 69.5% had never had a knee injury/accident. The severity of any undiagnosed knee osteoarthritis was estimated using the Oxford Knee Score; more than half of the population (52.2%) had satisfactory joint function, 25.7% had mild to moderate knee osteoarthritis, 15.1% had moderate to severe knee osteoarthritis, and 7.4% had severe knee osteoarthritis.

As for knowledge and perceived self-efficacy in preventing knee osteoarthritis, they were at high levels overall (78.6% and 74.7%, respectively), followed by moderate levels of 18.2% and 25.3%. As for perceived self-efficacy in preventing knee osteoarthritis, it was at a moderate level of 72.3%, followed by a high level of 27.7 %, as shown in Table 1.

Table 1 *Number and Percentage of Predisposing Factors* (*N* = 285)

Predisposing Factor	Level			Mean	*SD*
	Low (%)	Moderate (%)	High (%)		
The knowledge score on the prevention of osteoarthritis	9 (3.2)	52 (18.2)	224 (78.6)	2.7	0.5
Attitudes towards preventing osteoarthritis	0 (0.0)	206 (72.3)	79 (27.7)	2.3	0.4
Perceived self-efficacy in preventing osteoarthritis	0 (0.0)	72 (25.3)	213 (74.7)	2.7	0.4

Enabling Factors

Regarding enabling factors, which occurs in the setting of the home environment of the elderly, these were found to be at either a moderate or high level (Table 2). When considering each item, it was found that adequate lighting returned the highest score (70.9%), followed by living on the ground floor (69.1%), and then provision of support or walking aids (14.4%), such as handrails and the installation of handrails in the bathrooms for the elderly.

Table 2 *Number and Percentage of Enabling Factors* (*N* = 285)

Enabling Factor	Level			Mean	*SD*
	Low (%)	Moderate (%)	High (%)		
The setting of home environment	2 (0.7)	144 (50.5)	139 (48.8)	2.5	0.5

Reinforcing Factors

Most of the elderly received a low level of overall social support (75.8%). Considering each aspect, it was found that social support mostly came from health workers, followed by family/caregivers, and the least was from friends/neighbors, as shown in Table 3.

Table 3 *Number and Percentage of Receiving Social Support* (*N* = 285)

Reinforcing Factor (Level)	Low (%)	Moderate (%)	High (%)	Mean	*SD*
Overall social support	216 (75.8)	59 (20.7)	10 (3.5)	1.3	0.5
Social support from family/caregivers	186 (65.3)	64 (22.5)	35 (12.3)	1.5	0.7
Social support from friends/neighbors	246 (86.3)	29 (10.2)	10 (3.5)	1.2	0.4
Social support from health workers	106 (37.2)	123 (43.2)	56 (19.6)	1.8	0.7

Preventive Behaviors of Osteoarthritis among the Elderly

Most of the elderly (78.6%) had adopted a moderate level of preventive behaviors regarding knee osteoarthritis. When considering each aspect, it was found that a majority had adopted preventive behaviors for stress management, followed by doing exercises, and lastly, the correction of posture was given moderate attention, as shown in Table 4.

Table 4 *Number and Percentage of Osteoarthritis Preventive Behaviors* (*N* = 285)

Reinforcing Factor (Level)	Low (%)	Moderate (%)	High (%)	Mean	*SD*
Preventive behaviors for osteoarthritis (overall)	22 (7.7)	224 (78.6)	39 (13.7)	2.1	0.5
Diet	35 (12.3)	170 (59.6)	80 (28.1)	2.2	0.6
Stress management	16 (5.6)	74 (26.0)	195 (68.4)	2.6	0.6
Physical exercise	68 (23.8)	70 (24.6)	147 (51.6)	2.3	0.8
Adjustment and correction of the posture	121 (42.5)	145 (50.8)	19 (6.7)	1.6	0.6

Relationships between Predisposing, Enabling, and Reinforcing Factors and Preventive Behaviors for Osteoarthritis

An analysis of differences, using t-test statistics, was completed between two groups of independent variables (i.e., the predisposing factors which are gender, body mass index, chronic health problems, and history of knee injuries/accidents) and the dependent variable (i.e. preventive behaviors for knee osteoarthritis of the elderly). It was found that males and females adopted different behaviors in preventing osteoarthritis. For body mass index, chronic health problems, and history of knee injuries/ accidents, no differences in preventive behaviors for osteoarthritis were found as shown in Table 5.

Table 5 *Influence of Predisposing Factors on Preventive Behavior for Osteoarthritis in the Elderly (N = 285)*

Variables	*N*	Mean	*SD*	*df*	*F*	*p*-value
Gender				283	4.314	.039*
Male	92	2.13	0.47			
Female	193	2.03	0.45			
Body Mass Index				283	0.824	.365
More than 25	104	2.08	0.48			
Less than 25	181	2.05	0.45			
Chronic Health Problems				283	3.087	.080
Absent	55	2.16	0.46			
Present	230	2.03	0.45			
History of Injuries/Accidents around the Knee Joint				283	0.087	.769
Absent	198	2.04	0.48			
Present	87	2.10	0.40			

Note. **p* value < .05

Analysis of the impact of predisposing, enabling, and reinforcing factors on preventive behaviors for osteoarthritis in the elderly indicated that a majority of predisposing factors significantly ($p < .05$) impacted preventive behaviors for osteoarthritis (Table 6). These included adequacy of income, knowledge of osteoarthritis prevention, attitudes to prevent osteoarthritis, and perceived self-efficacy to prevent osteoarthritis.

The enabling factors represent arrangements adopted in the home environment. A positive correlation was found between osteoarthritis preventive behaviors in the elderly and most enabling factors studied ($p < .05$). A similar level of significance was noted for reinforcing factors, except that there was no reinforcement from support offered by health care officials (Table 6).

Table 6 *Influence of Predisposing, Enabling, and Reinforcing Factors on Osteoarthritis Preventive Behaviors* ($N = 285$)

Variables	Preventive Behavior	
	r	***p* value**
Predisposing Factors		
Age	-.110	.065
Educational level	-.053	.373
Career	-.021	.727
Income Adequacy	-.155	.009*
Knowledge of osteoarthritis prevention	.125	.034*
Attitudes to prevent osteoarthritis	.159	.007*
Perceived self-efficacy to prevent osteoarthritis	.392	.000*
Enabling and Reinforcing Factors		
The arrangement of home environment	.206	.000*
Receiving social support	.181	.002*
Receiving social support from family/caregivers	.185	.002*
Receiving social support from friends/neighbor	.167	.005*
Receiving social support from health care officials	.052	.382

Note. **p* value < .05

Predicting Predisposing, Enabling, and Reinforcing Factors Most Effective in Preventing Osteoarthritis

A number of factors operated to influence the prevention of osteoarthritis in the elderly. These might have a predictive ability. Their ability to predict the preventive behavior of osteoarthritis of the elderly was 31.9%, as shown in Table 7.

Table 7 *Stepwise Regression Analysis of Elderly Osteoarthritis Preventive Behaviors*

Variables	B	Std. Error	Beta	*t*	*p*-value
Perceived self-efficacy to prevent osteoarthritis	0.375	0.058	0.355	6.421	.000
Arrangement of house environment	0.115	0.049	0.129	2.338	.020
Attitude towards to prevention of osteoarthritis	0.115	0.056	0.113	2.076	.039

Code. Constant = 3.671; $R^2 = .319$; $F = 21.065$; p value < .001

Discussion

Osteoarthritis Preventative Behaviors Seen in the Elderly

The results showed that the elderly surveyed in this study had adopted strategies favorable to the prevention of osteoarthritis. A majority gave emphasis to stress management and exercise, but considerable improvement in diet and posture would be beneficial. This is consistent with the study of Taweechai (2000), who found that the elderly with osteoarthritis had moderate self-care behaviors.

There is a clear physical change with age and a deterioration of various systems in the body, especially when they are associated with osteoarthritis. Unsurprisingly, osteoarthritis impairs the elderly's physical fitness (Ham & Sloane, 1992). Thus, self-care behaviors must be adjusted to suit the

physical condition in order to reduce the severity of the disease. When considered in detail, it can be seen that the majority of the elderly took care of themselves by preventing accidents while walking down the stairs by holding the handrail every time, followed by getting enough rest and sleep (least 6–8 hours a day), and avoiding squat toilets. Applying warm or cold water to the knee joints to provide comfort in the knee area was less commonly seen; this may be because the elderly had an incomplete understanding of osteoarthritis.

Predisposing Factors

The results showed that gender was associated with the occurrence of osteoarthritis among the elderly. Females were at a greater risk than males (*p* value = .039). Following menopause, estrogen deficiency occurs, which is associated with osteoarthritis of the knee (Sun et al., 2007). Thus, the preventive behaviors adopted for osteoarthritis among the elderly are necessarily different. This is consistent with the study results reported by Muraki et al. (2009). Their Japanese population, aged 60 years and above, showed a 32% prevalence of osteoarthritis in females, while only 14% of males were affected. The latest results of the Thai Elderly Health Survey 2013 (Duangthipsirikul et al., 2013), which collected data from 14,000 elderly people randomly assigned to be representatives from 28 provinces in 12 nationwide health service networks, found that most of the samples had never been tested for osteoarthritis (72.9 %). The elderly who were diagnosed by a doctor as suffering from osteoarthritis accounted for 10.60% of the population. Of these, 2.20% were males and 8.40 % were females.

Palank (1991) indicated that learning opportunities increase with age; older people have a greater chance of accumulating experiences with appropriate stimuli, perceptions, and behaviors than do younger ones. The current study included only the elderly, so there was no meaningful difference in age range. Hence, age was not correlated with osteoarthritis preventive behaviors.

In this study, body mass index was not correlated with the adoption of preventive behaviors of osteoarthritis among the elderly. This may have been because the majority of individuals had a body mass index lower than 25, which did not exceed the standard value. Hence, they did not ascribe importance to the adoption of preventative behaviors. When there is an excess body mass index or obesity (BMI greater than 25), the body has to bear more weight, and this results in a loss of space between the knee joints. This means the knee joints are subjected to repeated friction or shock when activities occur, and this can easily result in joint injury (Teichtahl et al., 2008). This is a reinforcing factor for osteoarthritis.

The level of education was not correlated with the elderly's osteoarthritis preventive behaviors. This may have been due to the little difference in the educational level of the sample selected for this study. For example, most of the participants had finished primary school (74.7%) and with a further 17.2% never having been to school. This finding was inconsistent with the results obtained by Callahan et al. (2010) who examined the association between education level with X-ray results and the symptoms of osteoarthritis in African-Americans and Caucasians. They found that those who have had less than 12 years of studies have a greater than 50% risk of detecting osteoarthritis of the knee. There was a higher risk of developing the disease in females than males.

Occupation was not correlated with osteoarthritis preventive behaviors. This was because the majority of the sample group were hired employees, followed by agriculture (29.5% and 23.5%, respectively). These represent the kinds of occupations that require them to work outside the home but do not involve occupations that require unusual force to be applied through joints. According to a study conducted by Nilkanuwong and Prechanon (2005), standing, lifting, squatting, and repetitive activities, where unusual high loads are exerted on the joints (such as roadworkers who use jack hammers), cause much friction to occur in the joints leading to greater risks of osteoarthritis. This is consistent with a study conducted by Dahaghin et al. (2009), who indicated that women who worked from home were at greater risk of developing osteoarthritis than those who work outside the home.

Income adequacy was related to osteoarthritis preventive behaviors adopted by the elderly (*p* value = .009), which was in accordance the commencing hypothesis adopted. This may have been because the majority of the study group had sufficient income but no savings, followed by those with

an inadequate income with accompanying debt (38.2% and 26.3%, respectively). This is consistent with the outcomes obtained in the study of Boukeaw and Teungfang (2016). They studied the health care and health status of Thai elderly individuals using secondary data from the 2011 Elderly Population Survey. It was found that income was the most important variable in predicting the health status of the elderly in Thailand with a standard regression coefficient (β) reported of .174.

The history of injuries or accidents involving the knee area had no relationship on the level of osteoarthritis preventive behaviors adopted by the study group reported here. This was probably because the majority of the elderly had never had a history of knee injury or accident. The Oxford Knee Score showed that more than half (52.2%) of the elderly did not have any abnormality in the knee joint followed by 25.3 % who had only mild symptoms of osteoarthritis. Hence, it is not difficult to understand why there was no effect reported for this variable.

Knowledge about preventive behavior regarding osteoarthritis was associated with the actual adoption of preventive behaviors for osteoarthritis (*p* value = .034), which was in accordance with the commencing hypothesis adopted. A total of 78.6 % individuals had a high level of knowledge about preventing osteoarthritis. This is probably because most of the people involved had chronic health problems (80.7 %). They had to visit health workers regularly. Therefore, there were opportunities for them to talk about health care and health practices including behaviors beneficial to preventing osteoarthritis of the knee. Knowledge and the information gained about the disease are essential to enable patients to practice healthy behaviors to prevent and manage the disease properly and appropriately (Royal College of Orthopedic Medicine of Thailand, 2010)

Attitudes towards the prevention of osteoarthritis were associated with preventive behaviors for osteoarthritis in the elderly (*p* value = .007). The results obtained supported the commencing hypothesis. This is in line with Green and Kreuter's (2005) concept. Attitudes are beliefs and the feelings a person has towards people, things, actions, situations, etc., have both positive and negative effects on behavioral change. This also is consistent with the study conducted by Kuptnirattisaikul et al. (2000). They studied the attitudes and health behaviors in the elderly with osteoarthritis after letting them watch videos and suggesting exercises for knee osteoarthritis. It was found that the resulting attitudes towards exercise were mostly rated as positive. The authors concluded that exercise-guided videos can change attitudes and health behaviors regarding self-care among the elderly with osteoarthritis.

Perceived self-efficacy represents the practice of preventing osteoarthritis. This was associated with the adoption of preventive behaviors for osteoarthritis among the elderly (*p* value = .000). The result obtained supported our commencing hypothesis. This is in line with the concept promoted by Bandura (1977). He stated that perceived self-efficacy was a person's belief that they were capable of effectively performing any desired behavior. If persons believed that they were capable of performing an act, then they were likely to be able to perform that act. Therefore, if the elderly possess beliefs about the possibility of preventing osteoarthritis, they are more likely to adopt correct preventive behaviors. This is consistent with the study of Chanwan et al. (2015), who found that perceived self-efficacy was statistically related to participation in health promotion among the elderly.

Enabling Factors

The results showed that the home environment was positively correlated with the adoption of preventive behavior for knee osteoarthritis (*p* value = 0.000). From the study, it was found that the majority of the sample population had a home environment favouring osteoarthritis prevention (moderate and high levels totaled 64.4%). This is consistent with recent literature, which indicates that a suitable environment for everyday life prevents further deterioration of joints and prolongs the functional life of joints (Royal College of Orthopedic Medicine, 2011). Developing a favourable house environment includes living on the ground floor, going up and down the stairs as little as possible, holding the railing when going up and down, using a bathroom with a Western (Sit) toilet or, if a squat toilet is the option, using a chair with a hole in the middle or placing a three-legged device over the toilet, and finally placing handrails beside the toilet to enable the elderly to stand up conveniently. For

those with weak knees, and knee-buckling issues, there should be railings in the bathroom and indoors to prevent falls. Therefore, in order for a person to adopt proper health behaviors, the environment must also be taken into account. From the study of Kulwai (2009), it was found that the condition of the residence or the place of the family residence was a factor that promoted the person's environmental safety. In the study conducted by Ratnai (2012), he indicated that safe home conditions might mean that home modifications were needed to ensure the corridors were not slippery, the floors smooth, there were no raised floors or steep steps (ideally the elderly inhabit a ground floor), that no furniture obstructed walkways, appropriate railing was attached on the wall of the bathroom and in general areas, and brightness was increased in some places. These measures help support and prevent injuries in the elderly that occur in the home by providing an environment suitable for them, thus enabling the elderly to adopt self-care behaviors that are convenient and easy to follow.

Reinforcing Factors

The results showed that getting social support was associated with preventive behaviors for osteoarthritis among the elderly (*p* value = < .001), which supported the initial hypothesis adopted. This outcome was in line with the concept promoted by Green and Kreuter (2005), namely, reinforcing factors represent supporting information and encouragement an individual receives from another person, such as a colleague, supervisor, and health officers. The feedback received could include a reward that is tangible, a compliment, acceptance, or even punishment. All these affect the practice of health behaviors. The results also were consistent with the study conducted by Dana and Chinsuwan (2011). They found that caregivers had a significant effect on self-care behaviors of the elderly with knee osteoarthritis. The family or caregivers play a very important role in caring for the elderly because they are potentially able to keep the elderly safe without too many complications. The study conducted by Senchum et al. (2011) indicated that supportive family relationships were positively correlated with the role of caring for and promoting the health of the elderly. In another study, it was found that being supported by peers or health workers improved the learning of patients with osteoarthritis and their health practices improved (Piyakhachornrot et al., 2011).

In this research, it was found that predisposing and enabling factors were useful in predicting osteoarthritis preventive behavior uptake by the elderly. Variables, such as perceived self-efficacy for preventing osteoarthritis, attitudes towards prevention of osteoarthritis, and arrangement of home environments acted synergistically, enabling practitioners to predict osteoarthritis prevention behavior adoption by the elderly (*p* value < .001).

The results of this study were not totally consistent with the PRECEDE-PROCEED Framework model (Green & Kreuter, 2005). They found that the variables influencing change in behavior were predisposing and enabling factors. As for reinforcing factors, this study found no influence on behavioral change, contrary to expectations proposed by the Model. Therefore, when planning any behavioral change, the overall influence of these factors must be taken into account; one factor should not be taken into account exclusively. Green and Kreuter (2005) showed that behavioral change can be expected only when a motivating or inducing cause is present (the predisposing factor), but the behavior may be poor if the individual has not received the support, resources, or skills necessary to improve it. Thus, the proper allocation or use of resources (reinforcing factors) also encourages such behavior. In addition, receiving reinforcement in the form of supporting resources or motivation will increase individual behavior (enabling factor). When a person is encouraged by an enabling factor, this creates motivation and effects the predisposing factor. Likewise, when a person is rewarded and satisfied with the outcome of an action, (s)he is recognized and incentivized to continue that particular behavior. In addition, an appropriate health promotion environment and the availability of social reinforcement enables a behavior to persist because of help and support for each other in society.

Suggestions for Future Research

Preventive behaviors for osteoarthritis risk in the elderly should be studied using a combination of study methods such as observation, in-depth interviews, conducting group discussions, and surveys

to get to know the problems and obstacles in daily life that are consistent with reality. There also might be a study on the causes or factors that may affect the occurrence of falls or accidents in the elderly. The results could be used as a guideline for organizing activities to prevent knee osteoarthritis.

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Here are some general guidelines for preparing and submitting articles to *HBDS*.

1. Manuscripts for Submissions

1.1. Manuscripts should be no less than 8 and no more than 12 pages in length.
1.2. Manuscripts should be written in correct and standard academic English.
1.3. Manuscripts should be single-spaced.
1.4. Manuscripts should use Calibri font size 11.
1.5. Manuscripts should contain minimal formatting (bold and italics commands are acceptable).
1.6. Manuscripts should not contain editorial controls of any kind.
1.7. Manuscripts should also contain a 150-200 word abstract of the article. Provide at least three keywords, but do not exceed seven.

2. Suggested Referencing Format

2.1. In order to maintain a consistent look for *Human Behavior, Development and Society*, use of the American Psychological Association (APA) publication guidelines is mandatory. For details, please see the APA Publication Manual (7th edition).
2.2. *HBDS* follows the APA guidelines for endnotes (preferred), in-text citations and references.
2.3. Referencing Samples: Please refer to http://www.apastyle.org/ for questions about referencing, and serialization in the APA format.

3. Submissions Procedure

3.1. Manuscripts submitted to *HBDS* must not have been previously published elsewhere or under review for publication in other journals.
3.2. Manuscripts must adhere to the journal guidelines; failure to comply with these may result in the rejection of a submission.
3.3. Manuscripts must be submitted through the ThaiJo online submission system at https://so01.tci-thaijo.org/index.php/hbds; look for the HBDS web page.
3.4. Manuscripts should be submitted by no later than December 31 for the April issue, April 30 the August issue, and August 31 for the December issue. Nonetheless, even if a submission is received before the stated dates, and is accepted, the journal's Administrative Board reserves the right to decide on the publication date.

4. Review Process

4.1. Manuscripts will be checked for originality and prescreened by the editorial staff to see if their structure, content, and formatting complies with journal standards.
4.2. Manuscripts will undergo a double-blind review process conducted by at least 2 qualified independent peer reviewers who are external to authors' institutions, and knowledgeable in a relevant academic field. This process typically takes from 4–6 weeks, depending on peer reviewer response times.
4.3. Authors will be informed of reviewers' comments as soon as they are available.
4.4. Authors will be given up to 1 month to revise their papers (should that be necessary) and should return the revised version by the 1st of February/June/October (or earlier).

5. Numbers in APA Style

5.1 In general, round decimals to two places with the exception of *p*-values (three decimal places is the limit—$p < .01$ or .001). Percentages are expressed as whole numbers or to one decimal place.
5.2 Rounding rules: If the final number is 5 or more, add one to the last decimal place to be kept (1.565 becomes 1.57). If the number is less than 5, write the number with the required decimal places (2.344 becomes 2.34).
5.3 When a statistical expression cannot exceed the value of 1, then the number reported is NOT preceded by a zero (e.g., with p-values—$p < .01$, also applies to correlations, Cronbach's alpha).
5.4 Large numbers—use commas between groups of three digits in most figures of 1,000 or more.

5.5 Further information can be gained by consulting. James Cook University, Singapore. (n.d.). Numbers in APA. See https://www.jcu.edu.sg/__data/assets/pdf_file/0009/680085/Numbers-in-APA.pdf; Guadagno, R. (2010). Writing up your results – Guidelines based on APA style. Retrieved from https://ich.vscht.cz/~svozil/lectures/vscht/2015_2016/sad/APA_style2.pdf

6. Recommended Verb Tenses for APA Style Articles (p. 118)

Paper Section	Recommended Tense	Example
Literature review (or whenever discussing other researchers' work)	Past Present perfect	Quinn (2020) presented Since then, many investigators have used
Method Description of procedure	Past Present perfect	Participants completed a survey Others have used similar methods
Reporting results	Past	Results were nonsignificant Scores increased Hypotheses were supported
Discuss implications of results	Present	The results indicate
Presentation of conclusions, limitations, future directions, etc.	Present	We conclude Limitations of the study are

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