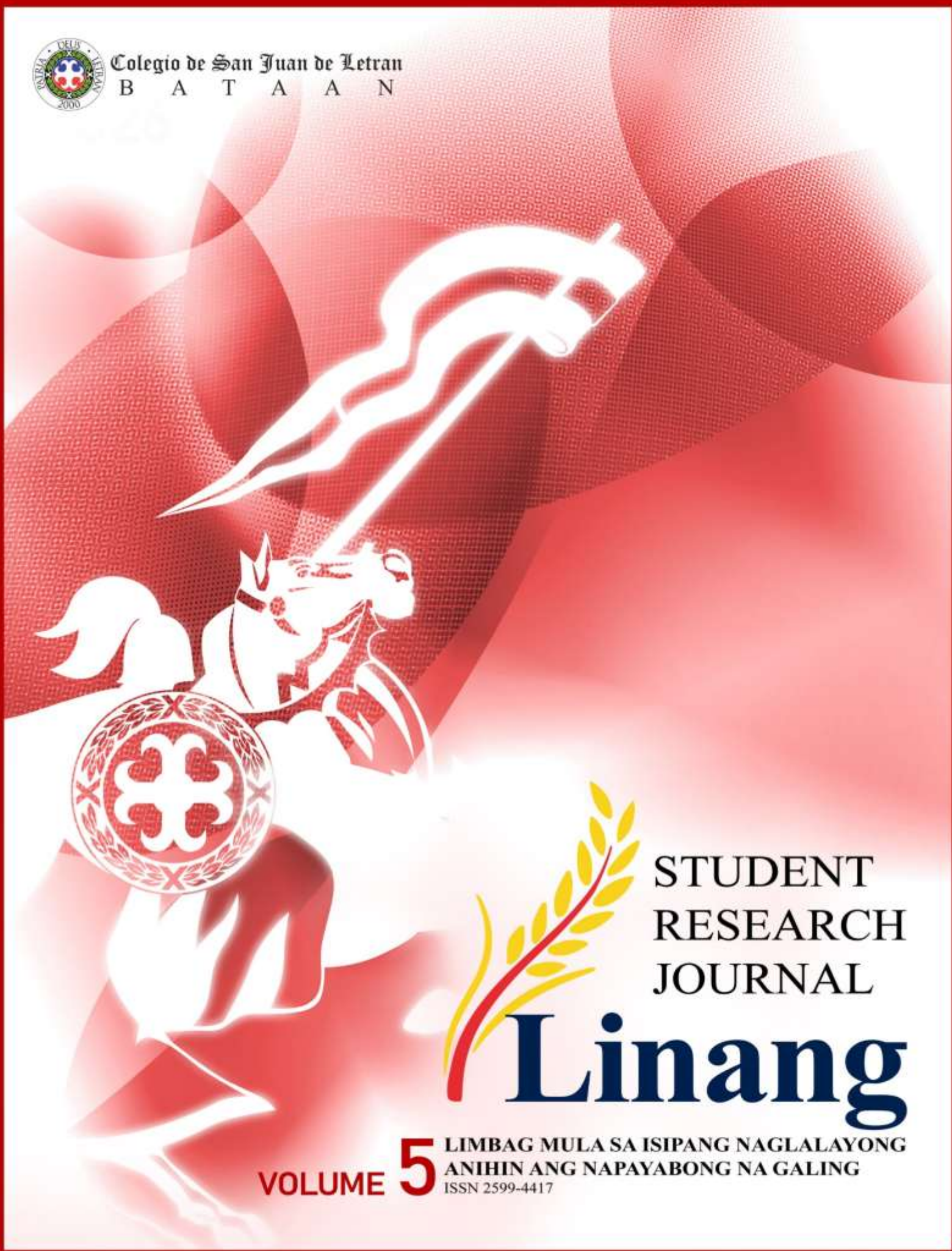
Colegio de San Juan de Letran
BATAAN



STUDENT RESEARCH JOURNAL

Linang

LIMBAG MULA SA ISIPANG NAGLALAYONG ANIHIN ANG NAPAYABONG NA GALING

VOLUME 5
ISSN 2599-4417

PREFACE

Linang in Filipino denotes lugar ng *sakahan*, *bukid*, *bungkal*. This means to cultivate or to foster the growth of anything.

Just like Bataan that is known for its remarkably magnificent range of mountains and predominantly an agricultural province despite the very fast industrialization. Linang aims to cultivate the research potential and competence of student researchers of Colegio de San Juan de Letran-Bataan.

Each article in the journal provides an example of research study that elucidates the impact of each academic discipline not only to the Colegio but also in and out of the academic community.

These articles exemplify the reconnaissance and analysis of student researches in their chosen discipline. They provide constructive insight into the studied problems and offer substantial research studies and even experimental analysis.

It is our aspiration that this compendium of student research articles will be both an inspirational and intellectual resource for both faculty and students and will encourage the community of Colegio de San Juan de Letran to expand our perspective and let research be part of our Arriba culture.

Arriba, Letran! Arriba!

LINANG VOLUME 5

EDITORIAL BOARD

Rev. Fr. Jesus M. Miranda Jr., O.P., PhD
Editor-in-Chief

Asst. Prof. Norady D. Mercado-Pere, LPT, RL, MLIS, MAEd, PhD
Associate Editor

Asst. Prof. Hazel F. Nisay, ECE, MEM
Instr. John Ian L. Seckts, LPT, MAComm
Asst. Prof. Alvin T. Dela Peña, ECE, MEng'g, LPT
Instr. Clarissa F. Quezon, CPA
Consultants

Ms. Abegail M. Abelgas, LPT
Managing Editor

Ms. Francesca A. Clare Blanco, LPT
Copy Editor

Mr. Ranier Lanz M. Alarcon
Ms. Charrissa Fatima R. Peñaflor, RPm
Layout and Art Editor

MESSAGE

I would like to congratulate the Research and Publication Office of Letran Bataan for producing the fifth volume of the journals Likha and Linang, where the research outputs of our employees and students are published. This is a clear testament of your commitment in the pursuit of new knowledge for the advancement of your chosen discipline which could catalyze positive social change.

It is a known fact that research is one of the tripartite pillars of any educational institution. As an indispensable pillar, it contributes to the advancement and development of knowledge and understanding of various issues and fields. In the academe, engagement in research is vital as it aims to advance discussions that could lead to insights and ideas which could drive progress, improve quality of life and address pressing concerns of society. This is our hope and desire for education researches—studies that have impact and relevance in the lives of people and the communities we serve.

While Research is one of the priorities of our institution, the reality is that, involvement in this enterprise remains to be scarce and a challenge. This is because Research is not for the mediocre but for the disciplined ones. It entails time, focus, patience and sacrifice to be able to produce a well-crafted opus. That is why we continue encouraging our employees and students to embrace the culture of research in view of its benefits professionally and institutionally. After all, for a genuine Researcher, incentive is not the primary motivation but the excitement of new discovery and understanding in the pursuit of knowledge.

Lastly, there is still one challenge that confronts any noble undertaking, and that is sustainability of the program or project. Research is a tough task because of its rigorous and meticulous process. Commitment and perseverance will be values that you summon to sustain this significant milestone.

Thank you and may God bless all your endeavors!

REV. FR. RAYMUND FERNANDO. P. JOSE, O.P.
Rector and President
Colegio de San Juan de Letran
Abucay, Bataan

Linang Research Journal

Volume 5

LIMBAG MULA SA ISIPANG NAGLALAYONG
ANIHIN ANG NAPAYABONG NA GALING

ISSN 2599-4417

TABLE OF CONTENTS

6 **The Influence of Financial Literacy and Saving Capacity on the Saving Behavior of Employees in the Municipal Government of Hermosa, Bataan**
Erika Jane V. Seno

15 **The Perceived Social Support and Resilience of Long-term and New Clients of a Therapeutic Community Foundation: A Correlational Study**
Jhannus Osman, Rasheed Isac M. Zabala

21 **"Ako'y Isang Sirena" in a Macho World: A Phenomenological Study of Hegemonic Culture Among Gay Men in Bataan**
Julia Lauren M. Garcia, Adrielle D. Haciñas, Kaila Diane R. Olaya

29 **Cereserve: Letran-Bataan Web-Based Food Ordering Application**
Aaron Salvio

39 **Assessing Electrical Hazard Awareness and Safety Measures Among Grade 12 Students at Letran-Bataan: Gender and Track-Based Differences and Community Literacy Implications**
Joseph Austin Enriquez, Jim Andrei Manrique, Richelle Tolentino

STUDENT RESEARCH JOURNAL
OF COLEGIO DE SAN JUAN DE LETRAN BATAAN

THE INFLUENCE OF FINANCIAL LITERACY AND SAVING CAPACITY ON THE SAVING BEHAVIOR OF EMPLOYEES IN THE MUNICIPAL GOVERNMENT OF HERMOSA, BATAAN

Erika Jane V. Seno

Collegiate

Correspondence: 4200023@letranbataan.edu.ph

ABSTRACT

The paradigm shifts in the financial sector, driven by technological innovations, poses a challenge for both management and consumers in understanding new financial landscapes. In this context, financial literacy becomes crucial for making informed personal finance decisions, suggesting that individuals with greater financial knowledge are better equipped to make sound financial choices. Additionally, the ability to save is vital for protection against future needs and unexpected financial challenges. Despite recurrent examination of various financial aspects, the connections between saving capacity and saving behavior, as well as between financial literacy and saving behavior, remain underexplored in local contexts. This study, grounded in the Theory of Planned Behavior (TPB) and employing a correlational research design, aims to investigate these relationships among public employees in the municipal government of Hermosa, Bataan. Utilizing purposive sampling, 195 participants aged between 23 to 61 were recruited. Data was collected through a self-administered questionnaire distributed via pen and paper. The results indicate that financial literacy moderately influences saving behavior, while saving capacity has a significant and positive impact. This highlights that individuals with higher saving capacities tend to demonstrate better saving behaviors. It also reveals that while financial literacy moderately affects saving behavior among the participants, saving capacity plays a more crucial role, emphasizing the importance of enhancing financial knowledge and saving abilities in fostering positive financial behaviors.

Keywords: Finance, Saving Behavior; Saving Capacity; Financial Literacy; Correlation

INTRODUCTION

The fast-changing technology and digital transformation observed in our market today infer a paradigm shift in different industries, especially in the financial sector, imposing a challenge of understanding not only to its management but also to its consumers (Abad-Segura & Gonzalez- Zamar, 2020). As technology progresses in the financial sector, a lot of new age and more complex financial products with varying benefits and risks are becoming available in the market, increasing the consumer's responsibility to manage their finances cautiously (Bhushan, 2014; Murendo & Mutsonziwa, 2016). Thus, in today's complex financial landscape, having a good understanding of financial matters is critical for making informed decisions about one's personal finances; which suggests that individuals who are more financially literate are able to make more informed and sound finance decisions.

Financial literacy is the ability to make informed financial decisions and to apply financial knowledge to everyday situations (Lusardi & Mitchell, 2014). In recent studies, the definition of the Organisation for Economic Co-operation and Development (OECD) was adopted, which characterized it as the combination of awareness, knowledge, skills, and behaviors necessary to make sound financial decisions and ultimately achieve financial wellbeing. Being financially literate entails that individuals manage their money efficiently, make appropriate investment decisions, plan behavior towards saving, and take advantage of the financial products in the market (Alshebami & Aldhyani, 2022; Mendez Prado, Chiluiza, Everaert, & Valcke, 2022). Studies and research in the area of financial literacy made it become increasingly important in recent years, such that 70% of adults in Asia, Europe, and Latin America are aware of developments in financial products and technologies (OECD, 2020). Additionally, the rising population of financially literate individuals are taking more consideration of their retirement savings and investments since there were swift changes from employer-sponsored defined benefit plans to private contributions in various countries (Lusardi & Mitchell, 2011; Lusardi & Mitchell, 2014; Henager & Mauldin, 2015; Lu sardi, 2017; Garcia & Vila, 2020).

However, studies have shown that financial literacy remains low in various countries, such that around 33% of adults globally are financial literate or showing awareness, knowledge, and skills in the four basic financial concepts—risk diversification, numeracy, inflation, and compound interest (Klapper, Lusardi, & van Oudheusden, 2015). Furthermore, high-income countries, like Germany, Japan, Italy, and France, still observed low levels of financial literacy even when their financial markets are well-developed (Lusardi & Mitchell, 2011; OECD, 2017).

Financial literacy also plays an important role in an individual's plan and intention to save. An individual who can make informed choices regarding their current financial situation is deemed to initiate various savings and retirement plans for their future, which in turn, affects an individual's saving pattern, management, and behavior

(Gaisina & Kaidarova, 2017; Lusardi, 2017; Adetunji & David-West, 2019; Morgan & Long, 2019; Morgan & Long, 2020).

Saving is defined as the difference between an individual's income and expenditures (Million & Belay, 2019), while some define it as the capacity of an individual to set aside a portion of his income before consumption (Lidi, Bedemo, & Belina, 2017; Ambong, Bantog, & Declaro- Ruedas, 2021). Having the capacity to save safeguards an individual from future needs as well as unforeseen and uncertain financial circumstances. It is also one of the ways to reach financial stability and well-being in the future as saving entails wealth accumulation, sound financial management and investment behavior (Sabri, Reza, & Wijekoon, 2020).

The saving capacity of an individual also affects saving behavior. Saving money regularly is impossible when an individual's expenditure level is high, wherein people are most likely to spend all of their income instead of saving a portion of it. It is not only the personal consumption that hinders an individual's saving capacity, but also the household obligations that must be met monthly, such as rent, utilities, and recreation (Million and Belay, 2019). Inversely, financial literacy promotes an individual's saving capacity wherein individuals manage their finances, decrease the level of indebtedness, and increase the capacity to save and invest for their future (Amari, Salhi, & Jarboui, 2020).

On the other hand, saving behavior refers to an individual's tendency to set aside a portion of their income for future use, such as emergency savings, retirement, or savings for specific goals (Friedline et al., 2013; Agustina et al., 2023). Similarly, it involves the ability to prioritize saving over immediate consumption and to make deliberate decisions on how to allocate one's resources. This behavior can also be dependent on the knowledge, perceptions or intentions of the individuals to save, such as saving for a purpose, saving for risks, and saving barriers (Widyastuti, Suhud, & Sumiati, 2018). Saving is considered as an essential part of the economic domain, especially on an individual basis, since other people purposely save for future investment and retirement; while others save for future consumption, such as recreational activities and marriage (Abrera & Gebreslassie, 2016).

There are a variety of factors that affect saving behavior such as, social comparison (Raue, D'Ambrosio, and Coughlin, 2019); income level (Morgan & Long, 2020); number of dependents (Mahdzan & Tabiani, 2013); marital status (Sembiring & Leon, 2021); and incentives and other financial support (Huang, Nam, and Sherraden, 2013; Schaner, 2018).

Detrimental consequences can occur due to a lack of financial literacy, most especially to one's saving behavior. Financial difficulties experienced by individuals are frequently caused by their poor financial management and behavior. Consequently, it will affect an individual's behavior, mental health condition, and physical and financial wellbeing (Alehkam, Salleh, & Mokhtar, 2018). Poor saving practices can also lead to individual bankruptcy and over indebtedness in banks and other money lenders as people are more likely to borrow when their income is low and can't cover their current and unexpected expenditures (Lusardi & Tufano, 2015; Kassim, Mohamed, Jahari, and Zain, 2019; Agustina et al., 2023). The inability to effectively save, which is a key component of financial well-being, individuals may be unprepared for unexpected financial hurdles and challenges, and be hindered from their respective financial goals.

Although various factors have been repeatedly seen in other financial concepts, little attention has been given to the relationship of saving capacity and saving behavior, financial literacy and saving behavior, particularly in the local setting. Therefore, it is critical to examine the relationship between the level of financial literacy and saving behavior, and between the saving capacity and saving behavior in a specific local setting and population to gain a deeper understanding of their current financial status.

With that said, this study primarily aims to investigate the correlation between the level of financial literacy and saving behavior, and between saving capacity and saving behavior among public employees in Hermosa, Bataan, with the ultimate goal of providing insights that can help improve financial literacy and promote healthy financial habits. Specifically, this research has the following objectives, (1) to determine the relationship between the level of financial literacy and saving behavior; and (2) to determine the relationship between saving capacity and saving behavior.

Therefore, this study hypothesizes that: (1) there is no significant relationship between an individual's level of financial literacy and saving behavior; (2) there is no significant relationship between an individual's saving capacity and saving behavior; and (3) there is no significant relationship among the level of financial literacy, saving capacity, and saving behavior of individuals.

Financial Literacy

Possessing a good amount of financial literacy signifies that a person benefits from their knowledge and ability to understand and process financial information by using it to make sound financial decisions (Lusardi & Mitchell, 2014; Mendez Pradoet al., 2022). Individuals with high levels of financial literacy are deemed to be capable of getting through financial difficulties as it correlates with positive behavior (Bhushan & Medury, 2013). This study evaluated the level of financial literacy among salaried individuals in India, aged 20-60 years old. From there, they found that financially literate consumers in the age group of 31-60 years tend to accumulate savings, purchase insurance, and have diversified investment. The findings of Bhushan & Medury (2013) revealed that increased financial literacy can also increase an individual's financial behavior, as knowledgeable people actively participate in the financial market (Landerretche & Martinez, 2013). For example, when talking about credit card debt, more financially knowledgeable people tend to pay in full to avoid fees and additional interest, whereas those who are less knowledgeable prefer paying the minimum amount, incur additional interest, and late payment fees (Lusardi & Tufano, 2015). Positive effects to saving habits are also seen with higher financial literacy level, particularly, people are likely to initiate different saving and retirement plans as they become more informed with their finances (Mahdzan & Tabiani, 2013; Henager & Mauldin, 2015; Gaisina & Kaidarova, 2017; Kaasim et al., 2019). In the study of Gaisina & Kaidarova (2017) conducted In Kazakhstan, adult respondents with an average age of 35-44 were recruited to determine if their financial literacy level determines their saving behavior. The study found that people who are employed and with a high educational background are more likely to be classified with a high financial literacy. The study also concluded that financial literacy is a positive determinant of an individual's saving level. Being able to maximize financial knowledge, individuals were found to be more likely to plan, save, invest in stocks, and accumulate more wealth over time (Lusardi & Mitchell, 2014; Mouna & Anis, 2017; Garcia & Vila, 2023).

Generally, it is believe that an individual's behavior towards financial services and products can be influenced by an individual's financial literacy or financial knowledge. However, West (2012) highlighted in his study that financial literacy does not provide sustained changes to an individual's financial behavior. This is supported by Garcia & Vila (2020), who asserted that higher financial literacy cannot be automatically correlated with better financial behavior, particularly in saving and retirement planning. It argues that providing adequate behavioral interventions to individuals encourages them to act, hence, improving their actual financial behavior. It was also revealed that incentivizing individuals can generate persistent changes in an individual's saving and investment behavior (Schaner, 2018).

Locally, Gonzalvo and Aliva (2019) found that microbusiness owners typically lack basic financial literacy, particularly in areas like record-keeping, saving, and borrowing. They were discovered to have an average level of financial behavior and attitude. Financial literacy was shown to be higher among female microbusiness owners than male microbusiness owners, and among single microbusiness owners than among married, widowed, or separated microbusiness owners. Their study also discovered a negative association between the age of the business and the microbusiness owner's level of financial literacy as well as positive correlations between greater levels of financial literacy and larger monthly business income. Thus, microbusiness owners need to become more financially literate because it helps their business perform better.

Sociodemographic Factors and Saving Capacity

One's saving capacity is posited to be constrained by different sociodemographic factors, such as age, income level, and number of dependents. In the study conducted by Million and Belay (2019) using inferential statistics, they found that age and income are the most determining factors of saving capacity, showing a direct relationship. This indicates that as an individual's age increases, their saving capacity also increases as its income is assumed to increase over time (Abrera & Gebreslassie, 2016). Endalew (2019) further supports the claim by concluding that age and income level positively and significantly affect one's saving capacity. Conversely, Aron, Negus, and Getnet (2013) argued that age negatively and significantly influences an individual's saving capacity due to the effect of diminishing marginal productivity to an individual's income.

Aside from the aforementioned, the dependence ratio or family size is considered one of the demographic factors that decrease an individual's saving capacity, which has been consistent with many empirical studies. As stated in the study of Egwu and Nwibo (2014) investigating the determinants of the saving capacity of rural women farmers in Nigeria using a multi-regression analysis, they deduced that having a family size of 5-8 people in a household is relative to an increase in consumption, which is not favorable to an individual's saving capacity. Moreover, a negative correlation between household size and saving capacity, showing an inverse relationship, was also seen in the results of the studies performed by Soman & Cheema (2011), Ambong et al., (2021), and Million & Belay (2019). Contrarily, while it is believed that individuals who have a large number of dependents have a high possibility of negative saving capacity, the result of the data examined by Abrera & Gebreslassie (2016) showed that people who have dependents such as family or other people to help financially have a greater possibility to save as they are more cautious about their spending since they are aware of their current and future financial responsibilities. Moreover, the saving capacity shows a positive relationship to the number of children an individual has. People with more dependants such as children feel more financial responsibility because of their future, hence, they start to develop better financial goals to save for educational expenses and inheritance (Mahdzan and Tabiani, 2013). However, Nguyen and Doan (2020) revealed in their study that the number of children an individual has does not significantly affect his saving capacity and behavior.

Saving behavior

Multiple studies have been conducted to prove that an individual's saving behavior can be influenced by a lot of factors. The study of Raue et al. (2019) has found that the tendency of people to compare their financial status and capability with others motivates them to change or boost their behavior. This approach demonstrates a positive motivation for individuals to start saving for their future retirement or increase their current savings. Morgan & Long (2019) disclosed that high and middle-income earners are more likely to incur savings, both formal and informal, than those who have lower income. This is due to the higher disposable income that high and middle earners have, which could raise the probability of saving.

Attitude and behavior indicate an individual's willingness to save money. Some individuals only save when there is money left in their pockets and some choose to actively save by keeping a portion of money aside before planning where to spend the rest (Tonsing & Ghoh, 2019). Murendo & Mutsonziwa (2016) have found that the saving behavior of individuals in Zimbabwe, influenced by their financial literacy level, has increased the likelihood to saving through formal and informal mechanisms. The study also revealed that only 48% of the respondents are saving and only 11% of it uses formal mechanisms. Similarly, Morgan & Long (2020) have found that the level of financial literacy raises the likelihood of an individual to save through formal savings portfolios, such as the use of bank accounts, cooperatives, mobile banking, and microfinance. This implies that people who are knowledgeable with different financial instruments have more likelihood to access one.

However, photovoltaic systems require controversial performance enhancements to obtain much higher production and cost-effective solar energy systems. The MPPT may use to ensure that the PV system provides the load with the maximum power constantly. The MPPT algorithm's primary objective is to determine the output power difference by using the voltage or current of the photovoltaic system. To maintain maximum power output while regulating the voltage, a DC - DC converter integrated with the MPPT algorithm must be used as the charge controller in the photovoltaic system. [2]

The maximum power point tracking system not only maximizes the amount of energy harvested from the photovoltaic system, but also manages the current and voltage flows within the circuit. It protects the battery from overcharging and the system from shorting out. When the photovoltaic system is operating at maximum power point tracking, it produces peak output power. It is because voltage and current are proportional to the maximum output power of a solar panel.

The maximum power point tracking system not only maximizes the amount of energy harvested from the photovoltaic system, but also manages the current and voltage flows within the circuit. It protects the battery from overcharging and the system from shorting out. When the photovoltaic system is operating at maximum

power point tracking, it produces peak output power. It is because voltage and current are proportional to the maximum output power of a solar panel.

Today, an android application is one of the most popular devices for human communication. It was developed to integrate additional functions into the current maximum power point tracking system, such as an Android smartphone monitoring system for the MPPT. Through integration, the MPPT becomes more accurate on monitoring the display MPPT parameters output.

The desired prototype was utilized to accurately display MPPT parameters output such as solar power, solar voltage, solar current, battery voltage, battery current, charging current, and battery percentage via an android application accurately and effectively. [3

THEORETICAL FRAMEWORK

In the context of financial literacy, saving capacity, and saving behavior, an individual's attitude, personal norms, and behavioral control will be investigated such that their intentions and actions to save are being influenced. From here, financial literacy and saving capacity can be considered as an essential factor in affecting and influencing attitudes towards saving behavior. In the study of Lusardi and Mitchell (2014), individuals with higher levels of financial literacy tend to have more favorable attitudes and saving behavior. Moreover, Minibas-Poussard, Bingol, and Roland-Levy (2018) provides a positive influence of the control beliefs to an individual's control behavior, hence, to its saving behavior. Thus, this study will be anchored in the Theory of Planned Behavior (TPB) (Ajzen, 1991).

The Theory of Planned Behavior (TPB) has been used in social psychology as an effective theory to explain relationships between and among attitudes, behavior, actions, and intentions (Ajzen, 1991). This theory posits that three (3) factors influence behavior: attitude, subjective norms, and perceived behavioral control. Attitude pertains to the overall evaluation of a particular behavior of a person. Subjective norms, on the other hand, refer to a behavior being performed due to the perceived social pressure from significant others or immediate people in their surroundings. Now, perceived behavioral control is the perception of a person towards their ability to perform the behavior.

The Theory of Planned Behavior provides a comprehensive framework for understanding the relationship between financial literacy and saving behavior, and between saving capacity and saving behaviors. TPB can help in explaining the matters and factors which affect an individual's saving behavior, thus, providing a stable foundation in conducting this study and provide reliable insights in financial literacy and saving behavior.

CONCEPTUAL FRAMEWORK

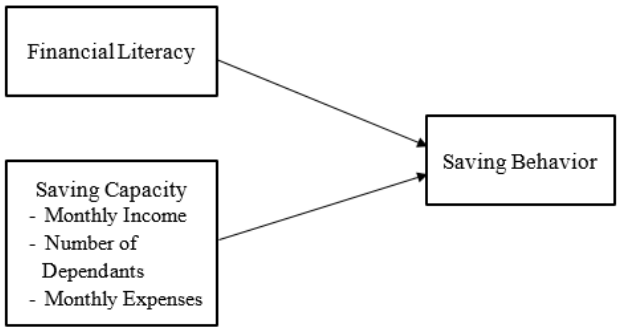


Figure 1. The Conceptual Framework of the Study, Showing the Relationship of its Dependent and Independent Variables

Figure 1 depicts the proposed research paradigm based on the Independent and Dependent Variable Framework. This model illustrates the influence of financial literacy and saving capacity to the saving behavior, with financial literacy as the independent variable and saving behavior as the dependent variable. This model also identifies demographic factors such as marital status, income level, and number of dependents as a moderator of the influence between saving capacity and saving behavior.

METHODOLOGY

Design

This study used a quantitative research design, particularly a descriptive correlational design. The purpose of this design is to describe the three variables of this study and identify the influence of financial literacy and saving capacity on the saving behavior of the participants of this study. The independent variables are financial literacy and saving capacity, while the dependent variable is saving behavior. Furthermore, this research design provided a clear picture of the current financial state of the participants in this study.

Participants

By utilizing the purposive sampling technique, a non-probability sampling, a definite number of participants are gathered. Since a non-probability sampling is used, a number of 195 participants out of the total population of 458, which is deemed sufficient, was assigned to be the sample size of this study. The study recruited 195 participants who are public employees in the municipal hall of Hermosa, Bataan, with an age ranging from twenty-three (23) to sixty-one (61) years of age.

The data was collected using a self-administered questionnaire distributed via pen and paper. The questionnaire consisted of four sections: demographic information, financial literacy, saving capacity, and saving behavior. Financial literacy was measured by an adapted scale, called the OECD Scale, while saving capacity and saving behavior were measured using self- administered questionnaires.

Research Instrument

Financial Literacy Questionnaire. This instrument was adapted from the OECD Toolkit (OECD, 2018), wherein it measured the financial literacy component which is defined by the OECD as "A combination of awareness, knowledge, skill, attitude, and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" (OECD, 2018, p. 4). According to the OECD (2018) Toolkit, their scale was developed from existing surveys, and was proven reliable and valid by their pool of experts which can effectively measure financial literacy. In this study, the domains of Financial Knowledge, Attitudes, and Behavior were solely adapted and used since they can stand alone in the purpose and definition of financial literacy in this study.

Saving Capacity Questionnaire. This self-administered questionnaire was intended to measure the saving capacity of an individual, which is defined in this study as the ability of an individual to set aside the maximum amount of money based on his income, expenses, and other obligations. In addition to that, this 6-item questionnaire was measured using a 4-point Likert scale (Disagree/Agree).

Saving Behavior Questionnaire. This self-administered questionnaire was intended to measure the saving behavior of an individual, which is defined in this study as an individual's tendency to set aside a portion of their income for future use, such as emergency savings, retirement, or savings for specific goals (Friedline et al., 2013). In addition to that, this 6-item questionnaire was measured using a 4-point Likert scale (Disagree/Agree).

Data Gathering Procedure

The research instrument was conducted via a pen and paper set-up. A letter, containing the purpose and intent of the data gathering, was given to the respective municipality before the proper data gathering. Before answering, informed consent was given to the participants to provide the rationale of the questionnaire. The responses of the participants who declined or did not continue with answering the questionnaire were not recorded and were discarded.

After agreeing to the informed consent, the participants answered the demographic profile, while taking into consideration their anonymity. Then, there were three sets of questions within the instrument; each set was for the variables of this study—financial literacy, saving capacity, and saving behavior. Incomplete responses were not counted and were discarded. Completed responses were personally collected and stored in a sealed container by the researcher.

Upon reaching the desired number of respondents, the encoded responses were stored in the researcher's Google drive and personal computer, which are password-protected. The data were accessed by the researcher and the statistician who analyzed the dataset.

Data Analysis

The collected data were tested if it fell under the normal distribution via Shapiro-Wilk Test. Accordingly, the data were, then, analyzed using the Spearman's rank order correlation coefficient which determined the strength and direction of the relationship between financial literacy and saving behavior, and between saving capacity and saving behavior. Also, the results were presented in tables.

Ethical Considerations

The study abided by the guidelines in accordance with the Republic Act of 10173 (The Philippine Data Privacy Act of 2012). Privacy, confidentiality, and anonymity in the entire research process were strongly upheld. Thus, the following ethical considerations were strictly followed:
Privacy, Confidentiality, and anonymity

The participants were informed about the purpose and nature of the study, and their consent was obtained before partaking in the survey of this study. The right to withdraw from the study at any time without any consequences was given to the participants, as well. The confidentiality of the participants was upheld by granting anonymity on the survey forms, and the data were solely used for research purposes. The data were securely stored on the researcher's personal computer and Google Drive and were discarded at the completion of this study

RESULTS

This study garnered diverse quantitative datasets, meticulously sourced from a survey. The primary objective was to unravel potential relationships between the variables of this research, thereby providing empirical insights. To achieve this, correlational analysis was employed to identify and quantify the strength and direction of relationships between variables. Specifically, this study focused on the relationship between Financial Literacy and Saving Behavior, and Saving Capacity and Saving Behavior.

Table 1. Descriptive statistics of Saving Capacity in terms of number of dependants, monthly income, and monthly expenses.

		Saving Capacity			
		n	Mean	SD	Verbal Interpretation
Number of dependants	1 dependant	46	3.123	0.425	Somewhat
	2 dependants	52	3.100	0.418	Somewhat
	3 or more dependants	51	2.996	0.483	Somewhat
	No dependant	46	3.431	0.444	Completely
Monthly income	Under PhP 20,000	46	3.152	0.491	Somewhat
	PhP 20,000 - PhP 29,000	43	3.156	0.500	Somewhat
	PhP 30,000 - PhP 39,000	24	3.417	0.423	Completely
	Over PhP 40,000	82	3.110	0.442	Somewhat
Monthly expenses	Under PhP 10,000	78	3.116	0.443	Somewhat
	PhP 10,000 - PhP 19,000	34	3.144	0.543	Somewhat
	PhP 20,000 - PhP 29,000	20	3.146	0.559	Somewhat
	Over PhP 30,000	63	3.209	0.458	Somewhat

Note: Qualitative interpretation: 3.25-4.00-Completely, 2.50-3.24- Somewhat, 1.75-2.49- Very Little, 1.00-1.74- Very Dissatisfied

Before proceeding to the correlational analysis, the descriptive statistics can show the trend of one of the variables for each respective demographic, which can help in explaining the relationships later on. In terms of the number of dependants, individuals with one dependant have a moderate ability to save. The mean score being above 3 suggests they are somewhat successful in saving, but not completely. The slight decrease in mean in 2 dependants indicates a marginal reduction in saving capacity with an additional dependant. The trend of decreasing saving capacity continues with three or more dependents. The mean is closer to the lower end of the 'somewhat' category, suggesting increased financial strain. Individuals without any dependants show the highest saving capacity. The 'completely' category indicates a strong ability to save, likely due to fewer financial obligations.

When grouped according to monthly income, the trend in the mean results of the respondents in the saving capacity domain becomes increasingly higher. Higher income allows for more flexibility in saving, leading to a 'completely' capable rating in the PhP 30,000 to PhP 39,000 bracket. However, the highest income group does not have the highest saving capacity, falling into the 'somewhat' category. This could be due to higher lifestyle costs or other financial commitments. Table 1 also presents the mean results of the respondents according to their monthly expenses. Monthly expenses do not drastically change in their responses in saving capacity. Even with further increased expenses, the response in saving capacity remains in the 'somewhat'
category.

Table 2. Test for normality (Shapiro-Wilk Test)

	Shapiro-Wilk	p
Financial Literacy and Saving Behavior	0.978	0.018
Saving Capacity and Saving Behavior	0.978	0.017

The analysis of this study focused on exploring the relationships among Financial Literacy, Saving Capacity, and Saving Behavior. Utilizing Spearman's rank correlation, suitable for our non- normally distributed data as seen on the significant values in table 2, significant relationships were observed, but with varying strengths.

Table 3. Size of correlation and the corresponding interpretation

Size of Correlation	Interpretation
90 to 1.00 (-90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-70 to -90)	High positive (negative) correlation
50 to .70 (-50 to -70)	Moderate positive (negative) correlation
30 to .50 (-30 to - 50)	Low positive (negative) correlation
.00 to .30 (.00 to -30)	negligible correlation

Table 3. Correlational analysis of Financial Literacy, Saving Capacity, and Saving Behavior

	Spearman's rho (r)	P
Financial Literacy and Saving Behavior	0.179*	0.030
Saving Capacity and Saving Behavior	0.503***	<0.001

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

Table 3 shows the relationships among the three variables. Among the three, only two were flagged to have significant relationships. A statistically significant correlation was observed between Financial Literacy and Saving Behavior with a coefficient of r=0.179 (p=0.030). This weak or modestly positive relationship indicates that individuals with higher financial literacy tend to exhibit slightly better saving behaviors. Finally, the most notable result was the moderately positive and highly significant correlation between Saving Capacity and Saving Behavior (r=0.503; p<0.001). This result highlights a meaningful relationship, suggesting that individuals with a higher saving capacity tend to demonstrate more favorable saving behaviors.

DISCUSSION

Saving is vital for both macro and micro level of economic domain as it promotes long- term economic development and growth and acts as a contingency plan for individuals for unexpected financial downturns. However, multiple studies concluded that an individual's saving behavior can be influenced by a lot of factors, including financial literacy, financial inclusions, saving intention, and sociodemographic factors. Now, this study aims to explore the relationship between the financial literacy, saving capacity, and saving behavior of public employees in the municipal hall of Hermosa, Bataan. Hence, this study tested the following hypotheses: (1) there is a significant relationship between an individual's level of financial literacy and saving behavior; and (2) there is a significant relationship between an individual's saving capacity and saving behavior.

A weak or modestly positive correlation in terms of an individual's financial literacy and saving behavior implies that even individuals with high financial literacy only tend to have slightly better saving habits or do not necessarily have an active and positive saving behavior. This result was contrary to numerous studies that provided a significant and positive effect and relationship of financial literacy to an individual's saving capacity. Alshebami and Adhyani (2022) concluded a positive and significant correlation between financial literacy and saving habits, explaining that having a moderate to high level of financial literacy encourages individuals to manage their finances effectively which leads to promotion and continuation of the culture of saving. Similarly, the study of Nguyen and Doan (2020) deduced that individuals with high financial literacy also have a high possibility of positive saving behaviors.

Furthermore, an individual's saving capacity exhibits a stronger relationship with an individual's saving behavior than financial literacy. Thus, having a positive and highly significant relationship implies that an individual's capacity to save is highly associated with a positive saving habits and behavior. This is consistent with the results of different studies; as such with Klapper and colleagues (2013) which found that individuals who reportedly have a high level of unspent income display an effective financial management which increases their capacity to set aside or save a portion of their income at the end of every month. The findings in the study of Million and Belay (2019) also corroborates that an individual's saving capacity has a positive effect on its saving behavior since managing finances effectively decreases the level of indebtedness and increases an individual's capacity to allocate a portion of its income either to different investments or savings account. Moreover, an individual's capacity to save can be limited by sociodemographic factors, particularly income. Contrastingly, the willingness of an individual to save is seen to be least affected by an individual's true saving capacity (Garcia & Vila, 2020).

Apart from the significant relationship between saving capacity and saving behavior, an individual's saving capacity is also seen to be varying and affected by different sociodemographic factors, such as an individual's number of dependants and income level which are shown in this study; ultimately, affecting their capacity and willingness to save. Specifically, a declining capacity in saving can be seen for individuals with an increasing number of dependants. Having zero or no dependants provides a greater ability to save as they may have fewer financial obligations other than themselves. Egwu and Nwibo (2014) also concluded that increasing household size results in an increase in consumption, leading to unfavorable financial circumstances and saving capacity. Contrarily, increasing numbers of financial dependants may cultivate a positive relationship towards saving capacity as individuals are more likely to be conscious in managing their finances and be aware of their financial responsibilities (Abrera & Gebreslassie, 2016).

Another expected outcome, the effect of an individual's income level to their saving capacity—higher income level provides enough room for increase in consumption and/ or savings without affecting the actual portion for savings. The higher the individual's income, the larger the portion of income for personal and household consumption, as well as the unspent income remaining at the end of every month for savings and investments (Sembiring & Leon, 2021).

The strong relationship between saving capacity and saving behavior corroborates with the Theory of Planned Behavior (TPB) since it assumes that motivation and ability are antecedents of an individual's saving behavior. Ajzen (1991) discussed that the inter-linkages between an individual's attitude, subjective norms, and perceived behavioral control determines their intention, which then impacts their behavior. This affirms that an individual's attitude and ability towards their finances influences their intention to save (Ajzen, 1991). In the present study, monthly income and number of dependants are seen to affect an individual's motivation and ability to allocate a portion of their money for savings, investment, or retirement. Similarly, Shim, Serido, & Tang (2012) supports that saving and other future-oriented financial behaviors are anchored with three phases of the TPB, which are attitude, intention, and actual behavior. They concluded that the more strongly individuals believe that they are capable and have the capacity to save, the more likely they will build an intention to engage with such behavior. Moreover, Minibas-Poussard et al. (2018) verified that in cases of high personal control, financial attitudes align towards having a positive saving behavior. Consequently, their study found a linkage between level of income and control behavior, wherein higher income level constitutes to confident control behaviors and positive saving behavior.

CONCLUSION

Managing one's money and monthly finances is more challenging than producing and earning money. As a result, saving money or allocating a portion of their income is always at the end of the list for most people as they may either be overspending to satisfy their needs and wants or their monthly income is insufficient for their personal or household consumption. Aside from this, multiple studies have established different factors driving one's saving behavior—income (Mahdzan & Tabiani, 2013; Adetunji & David-West, 2019), finances and debt management (Lusardi & Mitchell, 2014), and financial control behaviors (Agustina et al., 2023). This study has shown that the financial literacy of public employees in the Municipal Hall of Hermosa, Bataan poses a moderate influence on their saving behavior; however, while financial literacy appears to have a modest influence on saving behavior, saving capacity emerges as a more potent factor on how individuals manage their savings. This insight can be beneficial for individuals to further enhance their financial decisions.

Drawing upon the analysis conducted and the results established in this study, it is evident that the research make up relevant information for the government and educators because it addresses timely, micro level issues and contributes to recent literature on financial literacy, saving capacity, and saving behavior of public employees in the local setting, particularly in the municipality of Hermosa. The insights obtained are not only timely but also crucial for informing policy and educational strategies at both governmental and institutional levels.

The detailed understanding of micro-level financial issues among public employees in Hermosa paves the way for targeted interventions and programs. These can be designed to enhance the financial decision-making skills of individuals, contributing to a more financially literate and competent workforce. Government bodies and educational institutions are thus positioned to leverage these findings, formulating strategies that transcend traditional financial education. By focusing on practical financial management skills and behaviors, these strategies can promote more effective and sustainable financial practices among public employees. In conclusion, this study stands as a pivotal resource for shaping financial literacy initiatives, providing a foundation for more informed, practical, and effective approaches to financial management education and policy-making.

RECOMMENDATIONS

In light of the findings from this comprehensive study on the financial literacy, saving capacity, and saving behavior among public employees in Hermosa, Bataan, it becomes important to delve deeper into several aspects of financial behaviors for a more nuanced understanding. The implications of this study extend beyond immediate educational and policy changes, offering a framework for future research and development in the realm of financial literacy. This framework can guide similar studies in other municipalities, contributing to a broader understanding of financial behaviors in the public sector.

On the other hand, future research should aim to broaden its geographic scope beyond Hermosa, Bataan, to include a diverse array of municipalities and regions. By incorporating a wider demographic range, including variations in socio-economic status, age, education levels, and employment sectors, researchers can gain insights into the multifaceted nature of financial literacy and behavior. This expansion would allow for a comparative analysis, highlighting potential regional differences and similarities in saving behaviors and financial literacy levels, offering a more holistic view of the financial literacy landscape across different communities.

ACKNOWLEDGEMENT

First and foremost, I would like to thank God for granting me the strength and courage to conduct this research, and for my family that provided their unwavering support, mentally and financially. I am also grateful to my school, Colegio de San Juan de Letran – Bataan, and my thesis adviser, Ms. Clarissa F. Quezon, CPA, for their guidance throughout this study. My sincere thanks also go to the defense panel and validators for their constructive criticisms, which greatly contributed to the refinement of this paper. Furthermore, I deeply appreciate the participants of this study for their unyielding cooperation. Lastly, I wish to express my heartfelt gratitude to Mr. John Ian Seeckts and Mr. Jose Carlo Mari Calinisan for their invaluable guidance on the technical aspects of this research, and for generously sharing their expertise as researchers.

REFERENCES

Abad-Segura, E., González-Zamar, M., López-Meneses, E., & Vázquez-Cano, E. (2020).
Financial Technology: Review of Trends, Approaches and Management. Mathematics, 8(6), 951. MDPI AG. http://dx.doi.org/10.3390/math8060951

Abrera, Y. & Gebreslassie, G. (2016). Utilization of and Factors Affecting Individuals Saving in Ethiopia: The Case of Dire Dawa. Natural Resources, Agricultural Development, and Food Security International Research Network, 16(2).

Adetunji, O. & David-West, O. (2019). The relative impact of income and financial literacy on financial inclusion in Nigeria. Journal of International Development. https://doi.org/10.1002/jid.3407

Agustina Y., Davis C., & Haryono, S. (2023). Financial management

behavior of Indonesian banking customer based on individual literacy level. Journal of Eastern European and Central Asian Research (JEECAR). 10. 164-178. 10.15549/jeecar.v10i2.988.
Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-211.
Alekam, J., Salleh, S., & Mokhtar, S. (2018). The Effect of Family, Peer, Behavior, Saving and Spending Behavior on Financial Literacy among Young Generations. International Journal of Organizational Leadership, 7, 309-323.
Alshebami, A. & Aldhyani, T. (2022). The Interplay of Social Influence, Financial Literacy, and Saving Behaviour among Saudi Youth and the Moderating Effect of Self-Control. Sustainability, 14, 8780. https://doi.org/10.3390/su14148780
Amari, M., Salhi, B.,, & Jarboui, A. (2020). Evaluating the Effects of Sociodemographic Characteristics and Financial Education on Saving Behavior. International Journal of Sociology and Social Policy, 40(11), 1423-1438. https://doi.org/10.1108/IJSSP-03-2020- 0048
Ambong, R., Bantog, N., & Declaro-Ruedas, M. (2021). Determinants of Saving Capacity of the Expanded Students Grants-In-Aid Program for Poverty Alleviation (ESGPPA) Beneficiaries in Occidental Mindoro State College. Social Science Research Network. https://doi.org/10.2139/ssrn.3800502
Aron, H., Negus, A., & Getnet, B. (2013). Assessment of Saving Culture Among Households in Ethiopia. Journal of Economics and Sustainable Development, 4(13).
Bhushan, P. & Medury, Y. (2013). Financial Literacy and its Determinants. International Journal of Engineering, Business and Enterprise Applications, 4(2), 155-160.
Egwu, P. & Nwibo, N. (2014). Determinants of Saving Capacity of Rural Women Farmers in Ebonyi State, Nigeria. Global Journal of Agricultural Research, 2(1), 1-10.
Endalew, B. (2019). Determinants of HOuseholds Saving Capacity and Bank Account Holding Experience in Ethiopia: The Case of Dessie Zuria Woreda. Journal of Economics and Sustainable Development, 10(5). https://doi.org/10.7176.JESD/10-2-01

Friedline, T., Elliott, W., & Chowa, G. (2012). Testing an Asset-BUilding Approach for Young People: Early Access to Savings Predicts Later Savings. Journal of Economics of Education Review, 33, 31-51. https://doi.org/10.1016/j.econedurev.2012.10.004
Gaisina,S. & Kaidarova,L. (2017). Financial Literacy of Rural Population as a Determinant of Saving Behavior in Kazakhstan. Rural Sustainability Research, 38(333), 32-42. https://doi.org/10.1515/plua-2017-0010
García, J. M., & Vila, J. (2020). Financial literacy is not enough: The role of nudging toward adequate long-term saving behavior. Journal of Business Research, 112, 472-477. https://doi.org/10.1016/j.jbusres.2020.01.061
Gonzalvo Z. & Avila E. (2019). Level of Financial Literacy of Micro-Business Owners in the Municipality of Ragay, Camarines Sur, Philippines. Asia Pacific Journal of Academic Research in Business Administration, 5(1), 8-15.
Goyal, K & Kumar, S. (2020). Financial literacy: A systematic review and bibliometric analysis. International Journal of Consumer Studies, 45, 80-105. https://doi.org/10.1111/ijcs.12605
Henager, R. and Mauldin, T. (2015). Financial Literacy: The Relationship to Saving Behavior in Low- to Moderate-income Households. Family and Consumer Sciences Research Journal, 44(1), 73-87. https://doi.org/10.1111/fcsr.12120
Huang, J., Nam, Y., & Sherraden, M. (2013). Financial knowledge and Child Development Account policy: A test of financial capability. Journal of Consumer Affairs, 47(1), 1–26. https://doi:10.1111/joca.12000
Kassim, A., Mohamed, J., Jahari, N., & Zain, N. (2019). Personal Saving Behavior among Muslim Employees. International Journal of Academic Research in Business and Social Sciences, 9(11), 236–253. https://doi.org/10.6007/IJARBSS/v9-i11/6545
Klapper, L., Lusardi, A., van Oudheusden, P. (2015). Financial Literacy around the World: Insight from the Standard & Poor 's Ratings Services: Global Financial Literacy Survey 2014, 10.
Landerretche, O. & Martinez, C. (2013). Voluntary savings, financial behavior, and pension finance literacy: evidence from Chile. Journal of Pension Economics and Finance, 12, 251-297. doi:10.1017/S1474747212000340
Lidi, B., Bedemo, A., & Belina, M. (2017). Determinants of Saving Behavior of Farm Households in Rural Ethiopia: The Double Hurdle Approach. Developing Country Studies, 7(12).
Lusardi, A. (2017). When will the penny drop? International Pensions Unit of Allianz, 2017. Lusardi, A. & Mitchell, O. (2011). Financial literacy around the world: An overview. Journal of
Pension Economics & Finance, 10(4), 497-508. https://doi.org/10.1017/S1474747211000448
Lusardi, A. & Mitchell, O. (2014). The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1), 5-44. https://doi.org/10.1257/jel.52.1.5

Lusardi, A. & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness.
Journal of Pension Economics & Finance, 14(4), 332-368. https://doi:10.1017/S1474747215000232
Mahdzan, N. & Tabiani, S. (2013). The Impact of Financial Literacy on Individual Saving: an Exploratory Study in the Malaysian Context. Transformations in Business & Economics, 12(28), 41-55.
Mendez Prado, S., Chiluiza, K., Everaert, P., & Valcke, M. (2022). Design and Evaluation among Young Adults of a Financial Literacy Scale Focused on Key Financial Decisions. Education Sciences. 2022; 12(7):460. https://doi.org/10.3390/educsci12070460
Million, S. (2019). Statistical Analysis of Factors Affecting Average Monthly Saving Money of Lecturers in Case of Natural and Computational Science. Mathematical Theory and Modeling, 2019, 9(5). https://doi.org/10.7176/mtm/9-5-02
Minibas-Poussard, J., et al. Behavioral control or income? An analysis of saving attitudes and behavior, credit card use and buying on installment. Rev. Eur. Psychol. Appl. (2018), https://doi.org/10.1016/j.erap.2018.10.003
Morgan, P. J., & Trinh, L. Q. (2020). Financial Literacy, Financial Inclusion, and Savings Behavior in Laos. Journal of Asian Economics. 68, 101197. https://doi.org/10.1016/j.asieco.2020.101197.
Morgan P., & Trinh L. (2019). Determinants and Imapcts of Financial Literacy in Cambodia and Viet Nam. Journal of Risk and Financial Management. 12(1),19. https://doi.org/10.3390/jrfm12010019
Mouna, A. & Anis, J. (2017). Financial Literacy in Tunisia: Its determinants and its implications on investment behaviour. Research in International Business and Finance, 39, 568-577. https://doi.org/10.1016/j.ribaf.2016.09.018
Murendo, C. and Mutsonziwa, K. (2017). Financial literacy and savings decisions by adult financial consumers in Zimbabwe. International Journal of Consumer Studies, 41, 95-
103. https://doi.org/10.1111/ijcs.12318
OECD/INFE (2017). G20/OECD INFE report on adult financial literacy in G20 countries.
Available at: Paris: OECD http://www.oecd.org/daf/fin/financial-education/G20-OECD- INFE-report-adult-financial-literacy-in-G20-countries.pdf.
OECD (2016), OECD/INFE International Survey of Adult Financial Literacy Competencies, OECD, Paris, www.oecd.org/finance/OECD-INFE-International-Survey-of-Adult- Financial-Literacy-Competencies.pdf

OECD (2018), OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion. Raue, M., D'Ambrosio, L., & Coughlin, J. (2019): The Power of Peers: Prompting Savings
Behavior Through Social Comparison. Journal of Behavioral Finance. https://doi.org/10.1080/15427560.2019.1587762
Sabri, M., Reza, T., & Wijekoon, R. (2020). Financial Management, Savings Behavior, Investment Behavior, and Financial Well-Being of Working Women in the Public Sector. Journal of Administrative Science Business, 17(2), 135-153.

Schaner, S. (2018). The Persistent Power of Behavioral Change: Long-Run Impacts of Temporary Savings Subsidies for the Poor. American Economic Journal: Applied Economics, 10(3): 67-100. https://doi.org/10.1257/app20170453
Sembiring, M. & Leon, F. (2021). The Influence of Demographics Factor on Pension Planning and Financial Literacy of Private Employee. Business and Entrepreneurial Review, 21(1), 131-152. https://doi.org/10.25105.ber.v21i1.9230
Shim, S., Serido, J., & Tang, C. (2012). The ant and the grasshopper revisited: The present psychological benefits of saving and future oriented financial behaviors. Journal of Economic Psychology, 33(1), 155–165.
Soman, D. & Cheema, A. (2011). Earmarking and partitioning: Increasing saving by low-income households. Journal of Marketing Research, 48, 14-22. https://doi.org/10.1509/jmkr.48.SPL.S14
Tonsing, K. & Ghoh, C. (2019). Savings attitude and behavior in

THE PERCEIVED SOCIAL SUPPORT AND RESILIENCE OF LONG-TERM AND NEW CLIENTS OF A THERAPEUTIC COMMUNITY FOUNDATION: A CORRELATIONAL STUDY

Jhannus Osman, Rasheed Isac M. Zabala

Collegiate

Correspondence: 4210093@letranbataan.edu.ph

ABSTRACT

Perceived social support, encompassing individuals' perceptions of aid from friends, family, and others during times of need, is a crucial factor in mental health. This study examines the intricate complex of perceived social support, resilience, and subjective well-being as contributors to mental health outcomes. Adopting a social support theory perspective, the study investigates factors influencing these elements in individuals facing psychological challenges, focusing on long-term and new clients of Rebirth Philippines Therapeutic Community Foundation Inc. in Wakas, Pilar, Bataan. The study aims to identify significant relationships between perceived social support and resilience, revealing a generally high level among clients. However, specific demographic factors like duration of stay, age, sex, and socio-economic status play roles. Correlational analysis indicates a moderate positive correlation of 0.565 between perceived social support and resilience. Utilizing a quantitative approach, the research employs numerical data to elucidate distinctions and impacts, ultimately contributing to understanding the critical role of perceived social support in strengthening mental and physical well-being, particularly in rehabilitation environments.

Keywords: clients, perceived social support, psychological challenges, resilience

INTRODUCTION

In our interconnected world, individuals have the opportunity to create genuine connections and ensure fair treatment, appreciating and valuing one another for who they are. This fosters a culture of kindness and equity, despite the challenges posed by bias and unfairness in society. Referred to as perceived social support, the perception of individuals regarding their significant relatives or acquaintances is deemed vital during unfortunate circumstances, as they provide mental and physical support. Case in point, one's overall well-being, including mental and physical health, profoundly benefits from acknowledged social support. According to the main effect model of social support, whereas social support is beneficial for mental health, eliciting an increased sense of well-being and life satisfaction. In recent years, perceived social support has been confirmed to be an important indicator of life satisfaction in a wide range of population groups, such as individuals with substance use disorder (Yang et al. 2020). Rutter M (2019) considers psychological resilience to be an important component of positive psychology, which argues that resilience is a dynamic process. Tugada et al. (2020) define resilience as the ability to "bounce back" from stressful experiences quickly and effectively, to adapt to and evolve in response to volatile conditions such as crises, work pressures, trauma, and other adversities.

As a result, in adverse circumstances, highly resilient people easily adapt to and recover from setbacks, whereas less resilient people are less likely to adapt to and recover from stressful experiences. Relational and social elements such as family bonding and supportive relationships could build resilience (Howard S. 2019). As a result, perceived social support is commonly recognized as an external protective factor for resilience, as proven by numerous prior studies of psychopathologies.

Furthermore, perceived social support is positively connected with resilience (Asian J. 2020). A more recent study (Yhang et al. 2020). The current study was prompted by previous research that found resilience strongly moderated the association between perceived social support and life happiness in people with drug use disorders. Because perceived social support is linked to resilience, and both resilience and perceived social support are predictors of life satisfaction, the potential mediating effect of resilience on the link between perceived social support and life satisfaction should be investigated to strengthen our understanding of the mental health system.

A cross-sectional study by Muoz-Bermejo et al. (2019) confirmed that perceived social support was important in preventing the appearance of depressive symptoms. In addition, several studies have shown that people with higher levels of perceived social support were at lower risk of developing depressive symptoms. Depression is recognized to be one of the most common mental disorders and refers to a state of negative emotion, such as sadness, helplessness, loneliness, poor appetite, drowsiness, etc. thus, psychological resilience may help to prevent the onset of depression in certain individuals. The Rebirth Philippines Therapeutic Community Foundation Incorporated in Bataan is an institution where the demands for social support and resilience are necessary.

Hence, the researchers strive to investigate the probable relationship between social support and resilience among long-term and new clients of rehabilitation centers. The researchers believed that social support was crucial to maintaining good physical and mental health. The majority of those in rehabilitation in the Philippines are substance abusers (Lasco & Yarcia, 2022). Substance abuse is one of the most significant global problems, affecting many aspects of economic,

social, physiological, and emotional well-being, and is regarded as one of the most challenging issues of the present time, with most nations failing to address it. Life stress has a large influence on behavior and has been linked to several clinical disorders. It has been linked to anxiety, depression, and substance abuse (Andersen, 2018).

THEORETICAL FRAMEWORK

This study is anchored in the 3 P's Model of Martin Seligman (1990), which was found to examine personalization, pervasiveness, and permanence as influential factors in resilience. Personalization involves distorted thought processes and self-blame, while pervasiveness relates to pessimistic views across various life aspects, and permanence deals with the belief in the persistence of negative experiences. This defines resilience not only as a personality trait but also as a strategic and process-oriented approach. In addition to that, Southwick et al. (2014) highlight the dynamic nature of resilience, acknowledging that individuals may exhibit varying levels of resilience across different aspects of their lives and at different points in time. This adaptability aligns with the capacity of a dynamic system to succeed in adaptation (Masten, 2014; Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014). Bhattachaya (2013) affirms that resilience is shaped by various factors, including a positive attitude, optimism, emotional regulation, and the ability to perceive failure as constructive feedback, as recognized by psychologists. The model also assumes that failure, a common life trauma, triggers diverse responses: some individuals rebound and progress, while others grapple with anxiety, depression, and fear of the future (Seligman 2011).

THE PRESENT STUDY

Exploring the effectiveness of resilience interventions in the context of overcoming self-despair and dealing with mental health challenges is mostly looked at in the Philippines. Thus, this study aims to provide empirical evidence for measuring the correlation between perceived social support and resilience, generated by the 3 P's model, that is attributed to various clients in rehabilitation in the Philippines.

In the Philippines, rehabilitation is essential due to its significant impact on overall well-being. Life stress, linked to anxiety, depression, and substance abuse, plays a substantial role in behavioral and clinical disorders (Lasco & Yarcia, 2022; Andersen, 2018). The positive association between perceived social support and resilience (Asian J. 2020), supported by a recent study (Yhang et al. 2020), is influenced by previous research revealing that resilience moderates the connection between perceived social support and life happiness. Investigating the potential mediating effect of resilience on the link between perceived social support and life satisfaction is crucial for understanding the mental health system.

This study will provide empirical evidence on the relationship between perceived social support and resilience, encouraging active discourse. In addition to that, the present study aims to determine the significant correlation between long-term and new clients by examining perceived social support and resilience. Specifically, the study seeks to understand the correlation attributed by both long-term and new clients to these characteristics.

Therefore, the present study hypothesizes that both perceived social support and resilience have a significant relationship with long-term and new clients.

METHODS

Design

The study used as correlational design, also it uses a quantitative approach, in which numerical data will be collected and used to examine the variables and describe their significant relationship through total enumeration. The survey research design examined the respondents in terms of 1.) age, 2.) sex, and 3.) socio-economic status. The undertaking also determined the level of perceived social support of long-term and new clients of Rebirth Philippines Therapeutic Community Foundation, Inc. Additionally, the level of resilience of long-term and new clients of Rebirth Philippines Therapeutic Community Foundation Inc. was aimed at being examined. Lastly, it identified any significant relationship, if there was any, between the resilience of long-term and new clients, as well as perceived social support.

Subjects

Rebirth Philippines Therapeutic Community Foundation Inc., located in Wakas, Pilar, Bataan, accommodated both new and long-term patients as subjects. As the study adopted a quantitative approach, this benefited the target population. Criteria for inclusion were employed to differentiate between long-term and new patients. Long-term clients in rehabilitation who had been there for more than 3 months and new clients who had been there for less than 1-2 months were identified based on these criteria.

Measures/Materials

The Multidimensional Scale of Perceived Social Support (MSPSS) and Connor-Davidson Resilience scale (CD-RISC). This was utilized for participant assessment.

MSPSS. This is a 12-item scale originally designed to assess social support from three different sources: family, friends, and significant others (ie, romantic, subordinate or other particularly close relationship).

CD-RISC. This comprises of 25 items and is designed that the resilience may be viewed as a measure of stress coping ability and, as such, could be an important target of treatment in anxiety, depression, and stress reactions.

Data Gathering Protocol

Recruitment.

The subjects were recruited inside the rehabilitation facility. After properly distributing and receiving the questionnaires, the subjects were able to access the experiment that was embedded in a survey form.

Modality.

The recruited subjects completed the experiment using a pen and paper. Additionally, subjects were instructed to read carefully and understand each statement from their respective questionnaires.

As previously mentioned, subjects directly accessed the assessment via surveys or questionnaires. Hence, upon checking, various message stated, which included the rationale, ethical guidelines, and further instructions for the test. Once finished reading the preceding information, instructions, and reminders, the first

questionnaire immediately started.

Since the experiment investigates personal implications, subjects might get uncomfortable with it; thus, they were informed that they can withdraw at any point of the experiment.

Qualification of Data.

Upon completion of the entire experiment, all the responses were directly stored in the researcher's storage file that can be transferred in the local storage of the researcher's personal computer in the form of an excel file for further analyses. A complete experiment entailed that a subject has successfully undergone and responded to each of the questionnaire within the embedded experiment. On the other hand, the responses of the subjects who withdrew from or were interrupted amidst the experiment were classified as incomplete.

Termination.

In the questionnaire completion process, participants were provided with a debriefing statement displayed on the LCD screen. This statement aimed to elucidate the conditions and manipulations pertaining to each variable and concept studied, ensuring participants were informed about their exposure. Upon reaching the requisite number of subjects for each variable, the recruitment process for the test within the survey was concluded, leading to the termination of the survey.

The gathered data from the downloadable excel file from the server were stored locally in the researcher's personal computer. In addition to that, the data were stored in Google Drive for contingency purposes just in case the researcher's computer will be corrupted or accidentally destroyed. The data will also be shared to the researcher's adviser for statistical consultation and other analyses so that they can be utilized for the purpose of the study's discussion. Upon the completion of this study, it will be sent out to prospective journals or publications. If the prospective journals require to submit the gathered data, then they will be shared accordingly. Once published, all the stored data, locally and virtually, will be permanently deleted by erasing all the files from the local computer and online storage. To ensure permanent deletion, they will be removed from the recycle bin of the local computer, and from the recently deleted section of the Google Drive.

Data Analysis

The standardized questionnaire, along with the corresponding raw data, has been extracted and consolidated within a compressed file. This file includes an Excel spreadsheet containing the survey questionnaire data and a separate sheet of the subjects. This study utilizes planned correlational analysis, specifically Spearman's rank correlation coefficient (Spearman's rho), to discern the existence of a statistical relationship.

Ethical Considerations

The researcher strictly adhered to the ethical values in developing and conducting the experimental study. Thus, privacy, confidentiality, and anonymity in the entire experimental process and the gathered data were strongly upheld. To ensure, the researcher adhered to the following ethical considerations:

Privacy, Confidentiality, and Anonymity

The researcher, along with their duties and responsibilities, strongly abided by the Republic Act of 10173 (the Philippine Data Privacy Act of 2012). Hence, the gathered data were treated with the utmost privacy, confidentiality, and anonymity. The data were solely used for the purpose and duration of the entire research process. Furthermore, the data did not contain any personal information about the subjects. The data were properly disposed of after the data collection had concluded. In addition to that, all the data related to the study was treated as confidential. Anonymity was granted so that the experiment would not require their names and identities to be included.

RESULTS

Table 1. Descriptive statistics of the Perceived Social Support and Resiliency of the Clients of Rebirth Rehabilitation according to their demographics

			n	Mean	Std. Deviation
Perceived Social Support	Duration	Long-term	8	5.792	0.686
		New	4	6.667	0.403
	Age	18 to 24	6	6.083	0.828
		25 to 34	4	5.938	0.671
		35 to 44	1	7.000	Null
		55 to 64	1	5.750	Null
	Sex	Male	3	5.389	0.699
		Female	9	6.315	0.603
	SES	Middle Class	10	6.075	0.690
		Lower Class	2	6.125	1.237
Resiliency	Duration	Long-term	8	4.455	0.324
		New	4	4.450	0.465
	Age	18 to 24	6	4.380	0.356
		25 to 34	4	4.600	0.255
		35 to 44	1	4.840	Null
		55 to 64	1	3.920	Null
	Sex	Male	3	4.240	0.394
		Female	9	4.524	0.333
	SES	Middle Class	10	4.424	0.367
		Lower Class	2	4.600	0.339

The statistical tests performed on the perceived social support and resilience data from the clients of Rebirth Rehabilitation yield valuable insights. Table 1 presents the statistical analysis of the perceived social support and resilience of clients at Rebirth Rehabilitation reveals distinct patterns across various demographics. For perceived social support, long-term clients averaged a score of 5.792 with a standard deviation of 0.686, indicating a relatively consistent sense of support among this group. New clients, though fewer in number, reported a higher average score of 6.667, but with less variation (standard deviation of 0.403), suggesting a strong initial perception of support.

When examining age, younger clients (18 to 24 years) scored an average of 6.083 in perceived support, while those in the 25 to 34 age brackets had a slightly lower average of 5.938. Notably, only one respondent each in the 35 to 44 and 55 to 64 age groups provided data, with scores of 7.000 and 5.750, respectively, making these findings less representative. A gender-based difference was also apparent, as female clients (average score of 6.315) perceived more support compared to male clients (average of 5.389).

Socio-economic status (SES) also influenced perceived support. Clients from the middle class averaged 6.075, while those from the lower class scored slightly higher at 6.125. However, the lower class had a larger standard deviation (1.237), indicating a wider range of experiences within this group.

In terms of resilience, long-term clients reported a mean score of 4.455, with a standard deviation of 0.324, showing a stable level of resilience. New clients had a nearly identical average resilience score (4.450), but with slightly more variability (standard deviation of 0.465). Age-wise, younger clients (18 to 24) had a resilience score of 4.380, while those aged 25 to 34 reported a higher average of 4.600. As with

perceived support, data from the age groups 35 to 44 and 55 to 64 were
based on single respondents, limiting the generalizability of these figures. Gender differences were again evident in resilience, with female clients averaging 4.524, higher than the male average of 4.240.

Finally, looking at SES, middle-class clients averaged a resilience score of 4.424, while lower-class clients had a slightly higher average of 4.600, paralleling the trends seen in perceived social support.

These findings suggest that while there is a generally high level of perceived support and resilience among the clients, specific demographic factors like the duration of stay, age, sex, and socio-economic status can influence these perceptions and experiences. The data underscores the importance of considering these demographic factors in tailoring rehabilitation programs to better meet the diverse needs of clients.

Table 2. Test for Normality

	Shapiro-Wilk	p-value
Perceived Social Support and Resiliency	0.855	0.042

Table 3. Correlational Analysis of the Perceived Social Support and Resiliency of the Clients of Rebirth Rehabilitation

	Spearman's rho	p-value
Perceived Social Support and Resiliency	0.565	0.056

The Shapiro-Wilk test results in table 2, with a p-value of 0.042, suggest that the distribution of the combined perceived social support and resilience scores does not follow a normal distribution, as the p-value is below the conventional threshold of 0.05. This indicates that the data is significantly different from what would be expected in a normal distribution, which may have implications for the types of statistical analyses that are appropriate for these data.

The correlational analysis using Spearman's rho shows a moderate positive correlation of 0.565 between perceived social support and resilience, although this result is marginally outside the standard level of significance with a p-value of 0.056. This indicates that while there is a tendency for higher levels of perceived social support to be associated with higher levels of resilience, the relationship is not statistically significant at the 0.05 level. However, the p-value is very close to the threshold, suggesting that there is a trend worth considering even if it does not meet the strict criteria for statistical significance. This trend may warrant further investigation with a larger sample size or additional research to explore the relationship between these two important factors in the context of rehabilitation.

DISCUSSION

This study explores the link between social support, resilience, and demographic factors among Rebirth Rehabilitation clients. Studies confirmed that, generally, social support enhances resilience in the face of various difficulties (Yildirim and Belen, 2019), as well as helping individuals protect their mental health against trauma-related psychopathology (Henry et al., 2019). Findings show that long-term clients consistently feel sustained support, while new clients initially perceive heightened support. Moreover, perceived social support can provide clients with psychological relief by helping them handle stressful experiences and regulating the emotions associated with them (Lepore et al., 2000), thus increasing resilience.

Younger clients (ages 18 to 24) report higher support and resilience. Kaufman et al. (2006) said that the evidence for such a gene-environment interaction is related to social support. Their findings suggest that social support could enhance resilience to stress by mitigating genetic vulnerabilities for depression, particularly in maltreated children. Women exhibit more support and resilience than men, and lower-class clients. Some studies found a significant association between gender and resilience, as females scored higher on resilience than males, such as in a sample of 845 healthcare employees in the United Kingdom that included social workers (Sull et al., 2015), which showed slightly higher averages with greater variability. Despite high overall support and resilience, specific factors like duration of stay, age, gender, and socio-economic status significantly influence experiences.

Longer stays correlate with more positive perceptions, emphasizing the need for tailored interventions. While a moderately positive correlation between social support and resilience is observed, statistical significance is marginally missed. Further exploration with a larger sample size is suggested to understand this relationship better. The study highlights the strong connection between resilience and improved mental health, providing valuable insights into the role of support systems in mental well-being in rehabilitation contexts.

CONCLUSION

In conclusion, the findings of this study, which looked into descriptive statistics of perceived social support and resiliency among Rebirth Rehabilitation clients, revealed a complex knowledge of the processes at work. While there was an overall enhanced degree of perceived support and resilience among the clients, the difficulties lie in the influence of individual demographic characteristics. Individuals undergoing rehabilitation's perceptions and experiences were shaped by factors such as length of stay, age, gender, and socioeconomic position.

These findings emphasize the importance of including demographic characteristics in the design and implementation of rehabilitation programs. Recognizing the impact of factors such as length of stay, age, gender, and socioeconomic status is critical in tailoring interventions that not only address the client's primary needs but also cater to the diverse and unique requirements resulting from these demographic distinctions. As a result, a more tailored and effective rehabilitation approach can be established that ensures that the spectrum of support and resilience provided is precisely aligned with the different backgrounds and circumstances of the people seeking help at Rebirth Rehabilitation. In short, the study emphasizes the importance of a detailed and context-specific rehabilitation strategy that embraces the diversity inherent in client demographic profiles, resulting in more holistic and tailored treatment.

Furthermore, using Spearman's rho, the correlational analysis revealed a visible and moderately positive relationship between perceived social support and resilience. As in the study of Howard S. et al. (2012), the majority of research focuses on examining the effects of perceived social support on resilience, suggesting that individuals with high perceived social support are reported to have a higher level of resilience. Although the association is marginally outside the usual

limitations of statistical significance, the p-value's proximity to the predefined threshold suggests a compelling trend worthy of consideration. While not fulfilling the strict significance requirements, the observed trend demands further investigation, implying the potential importance of the link between perceived social support and resilience in the context of rehabilitation. Future studies could benefit from a larger sample size to strengthen the consistency of these findings and develop more solid conclusions, allowing for a more complete understanding.

REFERENCES

Akçay, Püren. "The Effect of Social Support Perception and Resilience Levels of Prospective Teachers on Academic Burnout during the Pandemic Period." *Educational Policy Analysis and Strategic Research*, vol. 16, no. 4, Dec. 2021, pp. 234–54, doi: https://files.eric.ed.gov/fulltext/EJ1328921.pdf

Bhattachaya, M. (2013). Building resilience through real-life scenario-based technology enhanced learning environment design. 2013 IEEE Region 10 Humanitarian Technology Conference, 212-214. https://doi.org/10.1109/R10-HTC.2013.6669043.

Berhe, H., Godana, W., Boti Sidamo, N., Birgoda, G. T., Gebresillasie, L., Hussen, S., & Gebeyehu, S. (2022). Perceived Social Support and Associated Factors Among Adults Living with HIV/AIDS Attending ART Clinic at Public Hospitals in Gamo Zone, Southern Ethiopia 2021. *HIV/AIDS - Research and Palliative Care*, *Volume 14*, 103–117. https://doi.org/10.2147/hiv.s351324

Chronister, J., Chou, C. C., Chen, Y. J. I., & Wu, Y. J. (2022). Received Social Support Scale for Persons with Serious Mental Illness: Preliminary scale development and validation study. *Rehabilitation Psychology*. 67(32), 139-151.

Dey, N. E. Y., & Amponsah, B. (2020). Sources of perceived social support on resilience amongst parents raising children with special needs in Ghana. *Heliyon*, *6*(11), e05569. https://doi.org/10.1016/j.heliyon.2020.e05569

Dicorte, S. (n.d.). *Relationship Between Individual Characteristics and Received Relationship Between Individual Characteristics and Received Social Support Among People with Serious Mental Illness Social Support Among People with Serious Mental Illness*. Retrieved April 24, 2023, from https://digitalcommons.usf.edu/cgi/viewcontent.cgi?article=10962&context=etd

Eltanamly, H., Leijten, P., van Roekel, E., Mouton, B., Pluess, M., & Overbeek, G. (2019, December 11). Can parental self-efficacy be improved in daily life among refugee parents? An experimental study. https://doi.org/10.17605/OSF.IO/34FWY

Hou T, Zhang T, Cai W, et al. Social support and mental health among health care workers during Coronavirus Disease 2019 outbreak: A moderated mediation model. PLoS One 2020; 15(5): e023383

Howard, Siobhán, et al. "Perceived Social Support Predicts Lower Cardiovascular Reactivity to Stress in Older Adults." Biological Psychology, vol. 125, no. 0301-0511, Apr. 2017, pp. 70–75, https://doi.org/10.1016/j.biopsycho.2017.02.006. Accessed 18 Nov. 2020.

Kalkan, M., & Epli-Koç, H. (2011). *Perceived Social Support from Friends as Determinant of Loneliness in a Sample of Primary School.* *8*(4), 547–551. https://files.eric.ed.gov/fulltext/ED520469.pdf

Kaufman J, Yang BZ, Douglas-Palumberi H, et al. Brain-derived neurotrophic factor-5-HTTLPR gene interactions and environmental modifiers of depression in children. Biol Psychiatry. 2006;59:673–80.

Khatiwada, J., Muzembo, B. A., Wada, K., & Ikeda, S. (2021). The effect of perceived social support on psychological distress and life satisfaction among Nepalese migrants in Japan. PLOS ONE, 16(2), e0246271. https://doi.org/10.1371/journal.pone.0246271

Kong, L.-N., Zhang, N., Yuan, C., Yu, Z.-Y., Yuan, W., & Zhang, G.-L. (2021). Relationship of social support and health-related quality of life among migrant older adults: The mediating role of psychological resilience. *Geriatric Nursing*, *42*(1), 1–7. https://doi.org/10.1016/j.gerinurse.2020.10.019

Lasco, G., & Yarcia, L. E. (2022b). The Politics of Drug Rehabilitation in the Philippines.Health and Human Rights, 24(1), 147–158. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9212821/

Masten A. S. (2014). Global perspectives on resilience in children and youth. Child Development, 85, 6–20.

Novelty Journals: High quality scientific journal publisher. (n.d.). Www.novelty journals.com. https://www.noveltyjournals.com/upload/paper/Effect%20of%20Perceived%20Social%20 Support-2230.pdf

Ortiz-Calvo, E., Martínez-Alés, G., Mediavilla, R., González-Gómez, E., Fernández-Jiménez, E., Bravo-Ortiz, M.-F., & Moreno-Küstner, B. (2021). The role of social support and resilience in the mental health impact of the COVID-19 pandemic among healthcare workers in Spain. *Journal of Psychiatric Research*. https://doi.org/10.1016/j.jpsychires.2021.12.030

Ozbay, Fatih, et al. "Social Support and Resilience to Stress." Psychiatry (Edgmont), vol. 4, no. 5, 1 May 2007, pp. 35–40, www.ncbi.nlm.nih.gov/pmc/articles/PMC2921311/#B15. Accessed 27 Mar. 2023.

Ozbay, F., Johnson, D. C., Dimoulas, E., Morgan, C. A., Charney, D., & Southwick, S. (2007a). Social Support and Resilience to stress: from Neurobiology to Clinical Practice. Psychiatry (Edgmont), 4(5), 35–40. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2921311/

Procidano, Mary & Smith, Walanda. (1997). Assessing Perceived Social Support. 10.1007/9784899-1843 7_5.https://www.researchgate.net/publication/286435798_Assessing_Perceived_Social_ Support

Seligman, M. (2011). Building resilience.. Harvard business review, 89 4, 100-6, 138 . https://doi.org/10.18356/fbebc8a5-en.

Somasundaram, R., & Devamani, K. (2016). A comparative study on resilience, perceived social support and hopelessness among cancer patients treated with curative and palliative care. Indian Journal of Palliative Care, 22(2), 135. https://doi.org/10.4103/0973-1075.179606

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. European Journal of Psychotraumatology, 5(1), 25338.

Wang, Li-Yi, et al. "Mediating Effect of Self-Efficacy on the Relationship between Perceived Social Support and Resilience in Patients with Recurrent Schizophrenia in China." Neuropsychiatric Disease and Treatment, vol. Volume 18, July 2022, pp. 1299–1308, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9255992/#cit0007

Wolf EJ, Miller MW, Sullivan DR, Amstadter AB, Mitchell KS, Goldberg

J, et al.A classical twin study of PTSD symptoms and resilience: evidence for a single spectrum of vulnerability to traumatic stress. Depress Anxiety (2018) 35:132–9. doi: 10.1002/da.22712

Wu, N., Ding, F., Zhang, R., Cai, Y., & Zhang, H. (2022). The Relationship between Perceived Social Support and Life Satisfaction: The Chain Mediating Effect of Resilience and Depression among Chinese Medical Staff. International Journal of Environmental Research and Public Health, 19(24), 16646. https://doi.org/10.3390/ijerph192416646

Yang, C., Zhou, Y., & Xia, M. (2020). How Resilience Promotes Mental Health of Patients With DSM-5 Substance Use Disorder? The Mediation Roles of Positive Affect, Self-Esteem, and Perceived Social Support. Frontiers in Psychiatry, 11. https://doi.org/10.3389/fpsyt.2020.588968.

Zhao, L., Sun, Q., Guo, Y., Yan, R., & Lv, Y. (2022). Mediation effect of perceived social support and resilience between physical disability and depression in acute stroke patients in China: A cross-sectional survey. Journal of Affective Disorders, 308, 155–159. https://doi.org/10.1016/j.jad.2022.04.034

Zychlinski, E., Itzick, M., & Kagan, M. (2022). Personal and environmental factors associated with self-reported resilience among social workers. International Social Work. https://doi.org/10.1177/00208728221087043.

"AKO'Y ISANG SIRENA" IN A MACHO WORLD: A PHENOMENOLOGICAL STUDY OF HEGEMONIC CULTURE AMONG GAY MEN IN BATAAN

Julia Lauren M. Garcia, Adrielle D. Haciñas, Kaila Diane R. Olaya

Collegiate

Correspondence: 4180033@letranbataan.edu.ph

ABSTRACT

In raising awareness of the prolonged battle against discrimination towards the Gay Community, understanding the source is deemed vital as it establishes knowledge regarding the various phenomena attributed to the diverse backgrounds of affected individuals. Through a qualitative approach, the researchers applied a phenomenological method to investigate the potential existence of a Hegemonic culture in the Gay Community. To gather data, researchers conducted a pre-survey from forty (40) participants of the target population, wherein the executed pre-survey acted as a determinant for the final eight (8) participants who best complied with the criteria needed for the study through a Purposive Sampling Technique. Ultimately, the eight (8) participants emanate from various age ranges to investigate the possible gradual progression of the culture in the province. In discussing the challenges faced by gay individuals, the findings express idealizations and behaviors within the gay community, which manifests in Hegemonic culture. In particular, the presentation of identity in public to ensure the maintenance of image, dividing the prolonged minority group into smaller marginalized sections based on appearances, affecting their dynamics or interactions with potential romantic partners and peers through emotional expression, alongside feelings of superiority over other gay individuals. Illustrating the profound influence of traditional masculine norms on the gay community due to their inclination to their biological sex, shedding light on the impact of Hegemonic masculinity on the lived experiences of the gay community.

Keywords: Gay Community, Hegemonic Culture, discrimination, phenomena, lived experiences.

INTRODUCTION

Cotec (2020) expressed that with profound exposure to various social influences, particular thought processes and behavior of individuals exhibit vulnerability to alteration to adapt to the perceived norms of their culture, social roles, and the people they engage with, such as friends and family. Case in point, concepts such as "Hegemonic Masculinity" possess distinct interpretations in different countries. In the United States, people associate Hegemonic Masculinity with social impact and status. Nevertheless, Hegemonic Masculinity characterizes the systematic and pervasive subordination of sexual identities toward heterosexual men. The case exemplifies how gay men learned to exclude themselves from the narrative of "normal masculinity" because they gained hyper-awareness through their interactions with the sex role, emphasizing the various "ideological" interest groups of Hegemonic Masculinity. However, such impressions directed them into remaining as concrete subjugations to bias and discrimination due to their orientation (Edwards, 2018).

Moreover, Hegemonic Masculinity fosters and sustains the stigmatization and discrimination of "racial minority, non-straight, physically disabled, religious minority, elder, and immigrant males" (Basu, 2021). The notion manifests through an established acceptance of "macho supremacy", which validates concepts of dominance or being a "dominant group". According to the research of Gebhard et al. (2019) and Ravehill and Visser (2019), Hegemonic

Masculinity accounts for how some gay and heterosexual men scrutinize obtained provocation concerning the notion of their perceived "traditional masculinity", consequently leading to their exhibited animosity towards other gay men who defy their perceived standards of Masculinity. As indicated in the results of Gebhard's survey, exclusively assessed heterosexual men indicated a "challenged masculinity, typically through gender disparities, fear, and humiliation". Therefore, it concludes how Hegemonic Masculinity leads to men directing their rage against those of the opposite sex, other heterosexual men, or gay men when experiencing particular shortcomings.

Reporting the lack of "safe gay spaces" in their native country, many Filipino gay men who migrated overseas, such as to Bangkok, Thailand, emphasized their sense of belongingness within the host country's gay community. Therefore, leading to an enhanced learning experience in practicing their sexuality as gay men - gaining a nurtured appreciation of the diverse activities of their interests without perceived judgment from conservative Filipinos (Ulla & Pernia, 2022). Case in point, the media and advertisement industry in the Philippines often exploit the "concept" of gay men for entertainment purposes, depriving them of

the right to feel like a living individual through such depictions of them as a mere source of exaggerated laughter and screams (Bautista & Villaverde, 2019). Consequently, through discriminatory portrayal, they receive mockery from other men who display distinct conducts of Hegemonic Masculinity, such as those influenced by flawed media, wherein they define gay men as couples with excessive intimacy, which resists their vision of "normal masculinity". Conclusively, Hunt et al. (2020) implied that behaviors and thought processes of "Hegemonic Masculinity" extend beyond the doings of heterosexual men. Case in point, gay men who identify with similar sentiments ultimately practice "straight-acting", enabling severe internalized homophobia among the LGBTQIA+ community.

Hence, this research focuses on the Hegemonic Masculinity as a culture in Bataan. Accordingly, striving to raise awareness concerning the prevailing discrimination against gay men in the LGBTQIA+ community as individuals with persevering flawed notions of "Masculinity" constructs social disparity among Filipino citizens. This research also aims to present observed patterns of thought processes and behaviors manifesting from Hegemonic Masculinity among gay men. Therefore, providing those affected with a platform that advances them from distorted perceptions and unjust treatment, strengthening awareness among other individuals and recognized allies in maintaining a safe community throughout the Philippines. The case is exemplified through an emphasis on the danger of separation among the community, which eradicates the needed unified approach in eliminating further de-marginalization of the affected individuals in the country. For instance, the intense abuse and discrimination within the LGBTQIA+ Community, particularly among gay men, as they entail psychological and physical adversities in their daily living. Moreover, gathered results may be used to analyze and adjust the factors needed for the application of the Sexual Orientation, Gender Identity and Expression, and Sex Characteristics Equality Act (SOGIE Bill) in the Philippines, compromising the demands of the local people and the gay community.

STATEMENT OF THE PROBLEM

The general problem of the study is what occurs when hegemonic culture surrounds gay men.

Specifically, it seeks to answer the following questions:

1. What is the lived experience of gay men that compels the culture of Hegemonic Masculinity in Bataan?

SCOPE AND DELIMITATION

The research study covers Masculinity among gay men to identify the patterns of Hegemonic culture. Researchers aim to explore the hierarchy of masculinity in the gay community. Therefore, the study sought out the experiences and hierarchical system based on the masculinity of gay men.

The study was conducted in the province of Bataan. Researchers conducted interviews with eight (8) final participants in private spaces. The selection of participants involves gay men between the age of eighteen and above. This study was conducted with a limited amount of financial resources.

THEORETICAL FRAMEWORK

This chapter includes pertinent theories, relevant research, and studies that are seen to be crucial in bolstering the significance of the study. This also includes a definition of each relevant term utilized in the study as well as the conceptual framework and hypothesis.

Relevant Theory

This study is anchored on several theories.

Social Conformity (Solomon Asch).

Challenging the notion of autonomy, Social Conformity as a theory by Solomon Asch emphasizes the tendency of group pressure to affect the thought processes and behaviors of an individual, such as their beliefs and judgment when engaging in social situations. Particular principles of the experiment display the extensive deviation of individuals from their perceived values through behavioral adaptations to satisfy the expectations of their desired group. Exposure to the collective actions of a majority group compels an individual to "conform" to avoid scrutiny or alienation, often simulating agreement or reproducing observed behaviors.

The theory poses importance in the study as the researchers uncover the source of an evident culture of Hegemonic Masculinity in the Philippines. Aligned with the study of Solomon Asch, Stanley Milgram emphasized how the pressure to conform leads to "obedience" under a recognized authoritative figure, thus, enabling ruthless behaviors. Hegemonic Masculinity enforces the perception of immediate subordination demonstrated by other sexualities, including its influence on other heterosexual men. Conceptualizing from the theory, individuals who remain susceptible or tolerate conformity affirm abandonment of principles, conscience, or moral sense upon perceiving how gay men challenge the persevering ideology of "normal masculinity" induced by men who possess direct Hegemonic Masculinity toward them.

Accordingly, the theory of conformity indicates how a heightened pressure to conform transpires through the distinct recognition of a norm among people with authority or impact over a population - enabling the development of a culture. The case exemplifies the reported hostility and discrimination against gay men, qualifying as a behavioural norm manifesting from Hegemonic Masculinity.

Theory of Masculinity (Connell).

The theory of Masculinity (Connell) acknowledges various masculinities that change over time, between cultures, and depending on the person. Hegemonic masculinity is a theoretical theory that seeks to explain the manner in which men continue to exercise dominating social roles amongst women and other gender identities and expressions that are seen as feminine in a certain society. Men's behaviors that exemplify social gender roles are referred to as "masculinity," and they can take several forms, including physical traits, cultural practices, and psychological traits. The idea of masculinities particularly emphasized the numerous social inequities prevailing at the time. Hegemonic masculinity, or dominating masculinity, provides a base for tyranny to achieve societal acceptance. On the contrary, hegemonic masculinities respond to the causes and effects of patriarchy. Although not all men

conform to the hegemonic masculinity paradigm, they nonetheless profit from its authoritative status, which establishes women's enslavement in a way that benefits men generally. Men's interactions with their sexual partners were influenced by personal beliefs about gender expectations, which are complex, context-specific, and socially formed. The idea that males are the main providers of financial support and therefore are superior to women defines traditionally masculine roles. The sociological idea of hegemonic masculinity contains the influences of feminism on the study of masculinities, which describes a collection of social customs reflecting men's dominance over women as well as other men and embodying the far more revered manner for boys to be boys.

The study that the researchers are undertaking concentrates on hegemonic culture as the theory places emphasis on hegemonic masculinity. Existence of a social norm for masculine conduct in society; males are expected to uphold these standardizations of masculinity. As the study tries to find out what gay men experience with hegemonic culture, the theory states the impacts of hegemonic masculinity premises involve "violent behavior, hostility, rejection to the expressing of emotions, and exhibition of toughness." The core structure of society is formed by men's drive for masculinity and their need to demonstrate their macho by dominating other men and women.

CONCEPTUAL FRAMEWORK

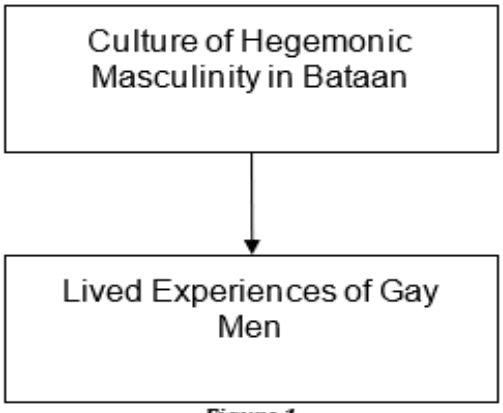


Figure 1

This study revolves around the lived experiences of Gay men upon their reported encounters with gay men who exhibit Hegemonic Masculinity. Case in point, by identifying the source of the culture alongside the discrimination they continuously face, which respective allies of the Gay Community aim to raise awareness for.

RELATED LITERATURE

This section presents the relevant studies and literature referring to the pertinent study themes of the research, "Ako'y Isang Sirena" in a Macho World: A Phenomenological Study of Hegemonic Culture Among Gay Men in Bataan.

The notion of toxicity, which emanates from Theories of Masculinity, manifests itself through aggressive behaviors and mental processes, contributing to the emergence of "Hegemonic Masculinity" among individuals (Deslauriers et al., 2020). Accordingly, S. Reyes et al. (2019) articulated that countries with prolonged practices of the patriarchal system, such as the Philippines, express animosity towards those who transgress their acknowledged conventional roles of "Masculinity", particularly homosexuals. In addition, moral standing and societal norms practiced by Filipinos predominantly acquire influence from accepted religious principles, and with the majority of the population consisting of Roman Catholic members, heterosexual relationships solely attain profound acceptance and support. Hence, the propensity to embrace their sexuality per the standards of the Christian faith is thus justified in those who identify with both the LGBTQIA+ Community and the Roman Catholic church (Campos et al., 2022).

The embodiment of Hegemonic Culture among Filipinos

Enforcing distinct behaviors of misogyny and condemnation of effeminacy, Filipino men succumbed to Hegemonic Masculinity upon constant exposure during the Presidential term of Rodrigo Duterte. Characterized as the head instigator of the toxic culture, Duterte personified a "hypermasculine image" induced through conceptions of violence with military advances and rape jokes. With such a profound position in the country, he inevitably exhibited influence on other Filipino men, further validating toxic Hegemonic Masculinity. The case exemplifies this through statements such as "Men speak that way" to excuse a rape joke, allowing Duterte to implement the notion of Filipino men finding amusement in profane language and sexist remarks. Consequently, the imposed "hypermasculine image" enhanced the prolonged degradation of other sexualities, especially women. As implied by De Chavez & Pacheco, 2020, Filipinos unfortunately tolerated and reaped entertainment from Duterte's misogynistic and violent comments during his political campaigns and presidential speeches. Accordingly, Ramiro et al., 2022, indicated that the oppression of women remains a prevalent issue in patriarchal countries, such as the Philippines, subsequently heightening violence against children, effectuated by women lacking the capacity to defend their children as Hegemonic Masculinity manifests "machismo", which imposes sole authority or power to men. Nevertheless, results from the national epidemiological data indicate how Filipino youth (13-24 years old) who identify as members of the gay community suffered from increased encounters of abuse, including physical, psychological, peer, cyber, and sexual violence, when compared to other heterosexual male and female participants. Furthermore, results revealed that more male participants reported experiences of violence, contradicting the collective belief of primary victims identifying as females.

Such a phenomenon receives emphasis from Devilles (2022), as the notion of "space space" strives to circulate a sense of belongingness by collectively eluding discrimination through mutual support and awareness and media presentation of the LGBTQIA+ Community through the rising popularity of several Pinoy Boys' Love (BL) series, which contradictorily deems inaccurate and poses a further threat for feminine gay men. The case exemplifies the portrayal of the marginalized population and distinct plots of recognized BL series, which reinforce Hegemonic Masculinity through the ideology of "machismo" among masculine gay characters who display "aggressive" personalities despite being opposite of the "passive" personality of their love interest with

perceived feminine qualities. For example, demonstrating ignorance towards the attributed "psychological dependency" and "immaturity" demeanors imposed on feminine gay men, facilitates a notion of borderline oppression from heterosexual men and masculine gay men. Consequently, female viewers reportedly recognize the dramatic romanticization of the power dynamics as they relate to such circumstances. Thus, enabling empathetic urges and self-pity with the need for a perceived reliant partner due to their "aggressive" or authoritative nature instead of the various BL series acting as a medium for awareness regarding the reality of toxic masculinity and Hegemonic Culture in the country.

Factors of Hegemonic Culture in the Lives of gay men

With the values imposed by Catholic educational institutions, individuals who identify as LGBT (lesbian, gay, bisexual, transgender) often experience difficulties conforming. The case exemplifies this through Catholic schools remaining mindful of the needs of other learners, families, and societal standards, alongside the needed alterations to the broader socio-political environment as they remain bound by the laws of the church. Nevertheless, schools accept LGBTQIA+ individuals as learners, parents, instructors, or administration staff. However, insufficient research highlights the lack of assistance for Catholic instructors to adjust to the diverse population of students. Therefore, bringing awareness to the needed gap to focus on in improving the experiences of LGBTQIA+ students in Catholic schools (Huchting & Fisher, 2019).

Hale & Ojeda, 2018 also commented on misogyny persisting as a frequently disregarded topic in academics and the "queer community" despite it being a prevalent type of sexual identity harassment. The pertained study questions whether some characteristics displayed by homosexual men justify misogyny in forms that remain overlooked because of their status as sexual minorities, challenging the presumed concept of how the "oppressed cannot oppress." Case in point, homosexual male misogyny transpires and provokes the relegation of queer femininities, including feminine gay men, strengthening a hierarchical approach towards gender. Consequently, explaining the rise of a Hegemonic Culture within the LGBTQIA+ Community, wherein gay men incessantly endures detestation for failing to exhibit their presumed femininity as they also create gender issues due to their engagement in misogyny with the such promotion of patriarchal idealisations.

Discrepancies among gay men - Masculine gay men and Feminine Gay Men

As the study delves into the occupational sexual orientation or gender identity of individuals (gay men), eclectic methods to counteract their experienced discrimination gain significant stress from other members of the LGBTQIA+ Community and heterosexual "allies''. Such a movement annually exhibits within the beauty and fashion industry as they market "pride-themed" goods that aim to advocate and empower the LGBTQIA+ Community.

Functioning as an expression of art through garments, Madinga et al., (2019) noted how fashion inevitably shows the character of an individual. The case exemplifies this through the identified shopping habits of gay men compared to heterosexual men, wherein homosexual men (gay men) significantly invest their time and money in conveying their style as it demonstrates their profound value on identity and belongingness to the LGTBQIA+ Community. Nonetheless, Gerrard et al., (2022) diverted attention onto the preference of both homosexual men and heterosexual men for men who display "masculine" qualities. Consequently, providing an essence of Hegemonic Culture as gay men who depict themselves with feminine qualities suffer from a disadvantage and heightened exposure to psychological prejudice, sexism, and potential employment discrimination, particularly during hiring procedures and promotion chances. The conducted experiment revealed how sexism exists as an implicit practice among gay men (homosexual males) and heterosexual males, concluding their shared bias towards the shown masculine-gay performer in comparison to the feminine-gay performer.

The articles used in this research collectively emphasize the prolonged battle to eradicate the "machismo" nature (toxic masculinity) of the patriarchal system integrated into Filipino education, societal standards, and culture. Nevertheless, the various literature expounded on different oppressed or marginalized populations, expressing how such information and belief pose harm as they circulate on the internet and various television channels, accessible to all generations of Filipinos nationwide and around the globe. In most cases, the results of several respective research indicate how misogyny remains a neglected issue within marginalized populations, including women and identified feminine gay men. Therefore, lacking collaborative support against toxic Hegemonic masculinity. Case in point, Filipinos endured the "masculine image" imposed by former President Duterte, which provided men a privileged platform of power over other genders De Chavez & Pacheco (2020). Hale & Ojeda (2018) also remarked how, despite a shared expression of femininity, gay men lack a profound understanding of the precise difficulties women face through misogyny as they continuously benefit from patriarchy, such as the salary gap in various industries or traits induced by biological sex. Case in point, masculine gay men possess a general advantage over feminine gay men and women due to their expression of "straight-acting" and adherence to masculine norms that the toxic culture of Hegemonic Masculinity profoundly favors.

Moreover, women remain physically and emotionally "powerless" in defending themselves or their children from "poly victimization" as Hegemonic Masculinity enforces perceived superiority over other sexualities. However, children, specifically males, who identify with the LGBTQ+ Community reported heightened violence as they remain the second or succeeding abuse victims of heterosexual men and other gay men who possess the thought process and behaviors of Hegemonic Masculinity (Ramiro et al., 2022). Some articles, however, focused on the social factors that intensified Hegemonic Masculinity in the Philippines, such as improper media representation of the LGBTQ+ Community through several trending Boy's Love (BL) series. Case in point, Devilles (2022) indicated that the entertainment industry evokes acceptance of hopelessness instead of awareness through the romanticization of psychological dependence insinuated by power dynamics between the leads, with romance developing between an "aggressive" character and a "passive" character. Moreover, religious beliefs, particularly Catholicism, affect the lack of awareness regarding the discrimination against the LGBTQ+ Community, paving the foundations for Hegemonic masculinity through the condemnation of effeminacy as it challenges "normal masculinity" (Huchting & Fisher, 2019).

Convincingly, Zhou (2023) emphasized the internal harm of Hegemonic Masculinity within the LGBTQIA+ Community, particularly, the growing separation between masculine gay men and feminine gay men. Case in point, the aforementioned study reveals

the expansive preference for masculine gay men for their signified power and dominance over other genders, which ultimately, poses threats for feminine gay men when they engage in romantic relationships or sexual intercourse practices with masculine gay men, as Deslauriers et al., (2020) mentioned how toxicity, including Hegemonic Masculinity, exhibits through aggressive behaviors and thought processes.

METHODOLOGY

Methods and Techniques

The current study intends to collect data using a qualitative approach. As defined by Crossman (2020), qualitative research is a type of social science investigation that gathers and examines non-numerical data in order to create meaning from it. By scrutinizing and understanding the occurrence, the pertinent data was obtained in a qualitative study approach. To gather the information needed for this qualitative study, an interview was carried out. The intended participants were asked open-ended questions to gather further insights or information. This enables an interpretative phenomenological analysis, which entails further insights and reasoning into the possibility of the culture existing among the gay community in the Philippines. Consequently, providing data on their subjective views on its effects on their daily lives.

Comparatively, the primary aim of qualitative study is to discover greater detail about an individual's or particular group's experience utilizing a phenomenological approach which assists in ensuring the responses of the participants have significance. In addition, it was also utilized to explore as well as expand on their experiences in order to produce a succinct evaluation regarding the possible responses. According to (Qutoshi, 2018), phenomenology refers to a study of techniques that seeks to capture the essence of a phenomenon by viewing it from the viewpoint of those who have experienced it firsthand. The study used descriptive phenomenology to capture the essence of gay men's lived experiences. Hence, Thematic analysis was applied in the current study to identify and explain patterns and themes in qualitative data gathered from interviews with the gay community in Bataan. This approach enabled the researchers to identify and examine the participants' subjective opinions and experiences, providing a profound understanding of the culture that exists among the gay community in the Philippines.

Population and Sample

In attaining the appropriate population frame for the present study, the applied criteria enabled the researchers to affirm the inclusion of the eight (8) final participants: (1) must be 18 years old and above; (2) have been living in Bataan for their entire life; (3) personally identify themselves in the gay community; (4) have received or given discriminatory remarks concerning gender preference or experience. As articulated by Shaheen et al. (2019), Qualitative studies lacking strict regulations concerning the sample size needed to garner data encourage researchers to ultimately bear in mind the utmost relevance and purpose of such results alongside the administration of qualitative interviews as they profoundly affect the quality or depth of answers. However, compliance with ethical considerations concerning the profound information power of the sample fostered the notion of using a smaller sample size to ensure confidentiality (Vasileiou et al., 2018). In pertinence to the age criteria, the researchers aim to ensure the capability of each participant to provide their permission without the necessity for a guardian, also considering their proficiency in comprehending the provided informed consent.

In securing the elimination of bias during the pre-survey, the present study employed a Purposive Sampling Technique (Bhardwaj, 2019) to narrow the participants into eight (8) final ones, enabling a diverse population of gay men to communicate their lived experiences. The technique offers each participant a chance as they assess the criteria needed to proceed with the interview properly, only selecting the eight (8) who possess similar experiences required for the pre-survey. The study gathered two (2) participants from each age group according to the population of the Philippines (*Philippines Age Structure - Demographics*, 2020): 18-24 years (early working age), 25-54 years (prime working age), 55-64 years (mature working age), and 65 years and above (elderly). Initially, the early working age ranges from 15-24 years old, with the researchers adjusting the age range to fit the legal age criteria of the participants. Case in point, to identify the final eight (8) among the forty (40) participants of the pre-survey, each participant was numbered according to their response rate within their age group (the first participant attains the first position), wherein two (2) from each age group who met the criteria for the pre-survey and rightfully consented to provide their demographic information for contact, will be taken as the sample population for the interview proper. Therefore, facilitating varying perspectives from all age brackets, wherein the provision of evidence of the prolonged culture of Hegemonic Masculinity in Bataan may arise.

Research Instruments

To ensure that the factors anticipated under the problem statement are met, the researchers identified potential participants for the study utilizing a self-made pre-survey by the researchers, containing the demographic information and criteria for participants. The researchers conducted a structured interview upon carefully selecting eight (8) participants who would most effectively comply with the study. In a structured interview, a set of pre-written questions in a set of order for the interview will be provided for the interviewer, who then delivers them to the participants (Mcleod, 2023). This assumes that the guides for interviews shed greater clarity on how gay men realistically perceive cultural conformity, encounters of exhibiting hegemonic masculinity, discrimination within their own community, and the significance they attribute to the phenomena. On the qualitative aspects of the present research, interview-guided questions will be the method used.

The data that was gathered throughout the interviews clarified how the participants perceive their own experiences and provided more context regarding the phenomenology that underlies it. The research instrument that was used to act as a guidance. Therefore, it won't always be applicable under some circumstances and ethical considerations as the participants' responses could vary.

Data Gathering

Upon seeking permission and receiving approval from the Psychology Department of Colegio de San Juan de Letran-Bataan, data gathering ensued following the procedures needed for the study. Essentially, social media utilization will transpire to reach the suitable population within the constrained time, wherein elderly participants for the pre-survey may acquire assistance from relatives or technologically aware individuals around them. Subsequently, the identified participants shall attain an opportunity

to sign their consent form under the supervision of the researchers.

Following the ethical considerations embedded in psychological practices, the researchers strive to provide a coherent discussion with the eight (8) participants preceding the structured interview. Case in point, to ensure the elimination of harm and misinterpretation to the participants, the researchers tackled the numerous ethical research guidelines, the purpose of the study, and the allotted time of completion, which fit their respective time and schedule. Moreover, in ascertaining the confidentiality and privacy of the participants and their disseminated information, each participant remains and will remain anonymous even for the researchers. The autonomy of the participants must also persist with their right to withdraw during any given time of the structured interview. Conclusively, the participants' consent to record the structured interview determines the success of data gathering.

Ethical Considerations

In ensuring the preparedness of the researchers in conducting the study, particularly in data collection and analysis, the following data privacy measures in posteriority, in accordance to RA 10173, also known as the Data Privacy Act of 2012, which consists of:

CONFIDENTIALITY - Your responses shall be treated with the highest confidentiality in the survey. Your identity will not be known to other respondents.

ANONYMITY - There is NO mechanism to trace you or any of your personal data based on your answers in this pre-survey alone.
COSTS - The pre-survey may take thirty (30) minutes to one (1) hour of your time. Other than that, NO financial or academic costs IN ANY FORM will be charged from the participants.

BENEFITS AND RISKS - As for participants' concerns, there will be NO direct and tangible benefits nor risks once you participate in the pre-survey.

ACCESS TO DATA - The raw data/response shall only be accessible to the proponents. They shall code the responses and process it quantitatively and qualitatively without determining the identity of each response.

STORAGE AND DISPOSAL - The data that will be gathered from you, shall be kept in Google Drive until the survey has been conducted and finished. After that, the entire database shall be deleted by the proponents.

VOLUNTARY PARTICIPATION - Your decision to participate or not to participate in this study is voluntary and will not affect your relationship with any institutions. If you choose to participate in this study, you can withdraw your consent and discontinue participation at any time without prejudice.

FINDINGS

The Thematic Analysis executed on the responses from the members of the gay community in Bataan enlightened notions corresponding to the phenomenon. The findings of this research rendered persevering themes that foster idealisations proving the existence of a Hegemonic culture among gay men in Bataan.

1. Social Standing

As gay individuals recognize their vulnerability in society, they display behaviors that aim to avoid immense discrimination through social dominance over others in their community (gay).

1.1 Competition
Belonging to a minority group, gay individuals avoid a sense of inferiority in society by competing with fellow gays.
"dapat dito sa minority na ito, dapat ako yung pinaka magaling, dapat ako yung pinaka the best" "pagandahan ng pagandahan, payamanan ng payamanan"

1.2 Authenticity of Gender

Through conformity to societal expectations of masculinity, gay individuals eliminate experiences of discrimination in relationships or the working industry, viewing others as inferior to them for their heightened masculinity.

"hindi ka nag papagawa. Kasi yun talaga ang gay eh"
"Tingin sa'yo parang madumi ka parang gano'n… parang feminine talaga"

"Kapag baklang - bakla…. ayoko, lalapit ka doon?"
"mga whey gays na ito... ayaw nila sa mga malalambot, ayaw nila sa mga fems, ayaw nila sa mga twinks, kasi feeling nila it harms their physique"

1.3 Division of Unity

In presenting themselves in society or the general public, gay individuals remain divided into various perspectives of identity concerning each other.

"tribes... how the community divides themselves by appearance"
"Tingin sa'yo parang madumi ka"
"We have the connotations kapag male-to-male, ay pineperahan niya lang 'yan. Or male-to-gay, ay pineperahan niya lang 'yan"

2. Sense of Control

With masculine norms profoundly influencing the idealizations and behaviors of gay individuals, some strive to maintain an image of dominance to avoid discrimination.
2.1 Emotional Regulation
Viewing the abstract as a weakness, some gay individuals avoid discrimination through emotional resilience, ensuring their image remains constant.

"kahit nasaktan, parang pakita mo lagi na masaya ka pa rin"
"gusto ko lagi yung happy, laging masaya"
2.2 Dominating behavior

Exercising authority and control over others, gay individuals who practice Hegemonic culture hold keen for those with an image or personality they deem inferior.

"kung minsan kasi talaga meron tayong talagang tinatawag na pasaway, na hindi nating mapasunod" "mas ano sa akin yung mas bata sakin... medyo chubby at baby face"

3. Dynamics of Relationships

Subject to limitations and cultural norms, the dynamics of

relationships of gay individuals emphasize the complexities of establishing and preserving relationships as they remain marginalized in society.

3.1 Mutual Respect

As they experience constant discrimination, gay individuals seek a reciprocal regard of worth, autonomy, and dignity in any form of relationships they acquire.

"nirerespeto niya bilang ako"
"yung pantay lang tumining ng tao"

3.2 Discretion

Garnering discrimination from fellow gay individuals, some eventually exercise caution in maintaining romantic relationships.

"it's a dogma in the community to be intimate with your partner when you're a same-sex couple" "gusto ko dito lang, tago lang, secret lang ganun"

DISCUSSION

The purpose of this research is to recognize the lived experiences of Gay men under the probable existence of Hegemonic culture in Bataan. Various factors that affect the phenomenon of Hegemonic culture went through investigation, such as their perceived identity in the gay community, alongside the effect of constant interaction with potential romantic partners and peers.

With Hegemonic culture enforcing the perspective that those who are deemed more masculine remain at the top of the hierarchy system in the gay community, gay individuals evaluate their social standing through dominance over others, avoiding discrimination. Consequently, it renders the ongoing competition among them, which further imposes "authenticity of gender" according to masculine norms, wherein they view those who present themselves as less masculine or display "effeminate" characteristics as inferior (Zhou, 2023). Hence, the division of unity in the gay community heightens the marginalization of their community as they remain divided due to Hegemonic culture.

Moreover, in collectively avoiding discrimination, some members of the gay community in Bataan also establish a sense of control over others through idealizations that are rooted in masculine norms, viewing emotional transparency as a weakness, particularly its recognized linkage to femininity (Garcia-Fernández et al., 2020). Thus, implementing emotional regulation in public, particularly around other gay individuals concurrently, leads to dominating behaviors over those whom they view as less masculine or "effeminate" when indulging in relationships with peers or a significant other as they present themselves according to the masculine norms of society.

Aside from the discrimination they face from the general public, gay individuals also imply the Hegemonic culture in the gay community surrounding romantic relationships, specifically their need for a partner who may assure mutual respect in the relationship. Consequently, as a minority group, possessing dominance over others provides advantages in securing romantic relationships (Pachankis et al., 2020). Hence, the rising notion of gay individuals towards others, recognizing prejudice from other gays, in instances wherein they deem more feminine compared to others as others possess preference over gay individuals with less effeminate characteristics to avoid discrimination from fellow members of the gay community, ultimately seeking a partner who views them as equal. Consequently, this leads to gay individuals implementing discretion concerning their romantic relationships.

Conclusion and Recommendation

Ultimately, the findings of this research reveal, to some extent, the existence of a Hegemonic culture among Gay Men in Bataan. Through the performed Thematic Analysis, participants endure the eclectic effects of Hegemonic culture on their daily living or lifestyle, exemplified through idealizations and behavioral manifestations of dominating behaviors anchored to traditional masculine norms. Conclusively, this suggests the need for members of the gay community to secure their social standing to avoid immense discrimination, displaying or submitting to dominating characteristics over other gay individuals. Concurrently, it enables the altered presentation of their identity, which conforms to masculine norms, particularly maintaining a "sense of control" to avoid judgment and secure acknowledgment in different aspects of their lives, including work and relationships. Therefore, it affects the dynamics of relationships they remain involved in, including romantic and peer socialisations, wherein Hegemonic culture constrains the expression of their gender, even around fellow gay individuals.

In addressing the challenges gay men in Bataan face as a result of Hegemonic culture, researchers aim to make the community feel more inclusive. Advocates for legislation that would protect individuals from discrimination based on sexual orientation and gender identity are known as legal protections. To strengthen the gay community in Bataan, community empowerment programs include introducing self-acceptance, leadership, and skill-building seminars. These programs can aid in the growth of resilience and community cohesion. Establishing safe spaces and support groups is crucial in promoting inclusivity and harmony within the Gay community.

Fundamentally, this study enlightens the diverse factors that indicate the effectuation of Hegemonic Culture among Gay Men in Bataan, with the findings providing future researchers with a compass to venture into the profound existence of the culture in the context of other members of the LGBTQIA+ Community or Heterosexual individuals.

REFERENCES

Basu, M. (2021, January 6). What's "hegemonic masculinity"? Here's why Donald Trump supporters believe men must be tough, dominant | MEAWW. Meaww.com. https://meaww.com/what-is-hegemonic-masculinity-americans-believe-men-tough-dominant-support-donald-trump

Bautista, A., & Villaverde, A. (2019). Out of the Closet: The Role of Gay Men as Reflected in the Philippine Advertisements. https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2019/lccs-I-005.pdf

Bhardwaj, P. (2019). Journal of the Practice of Cardiovascular Sciences : Table of Contents. J-Pcs.org. https://www.j-pcs.org/article.asp?issn=2395-5414

Brennan, J. (2021). HIDING THE AUTHENTIC SELF: CONCEALMENT

OF GENDER AND HIDING THE AUTHENTIC SELF: CONCEALMENT OF GENDER AND SEXUAL IDENTITY AND ITS CONSEQUENCES FOR AUTHENTICITY SEXUAL IDENTITY AND ITS CONSEQUENCES FOR AUTHENTICITY AND PSYCHOLOGICAL WELL-BEING AND PSYCHOLOGICAL WELL-BEING. https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=12892&context=etd

Campos, M., Darro, C., Castillo, D., Ching, G., & Del Castillo, F. (2022). Intersections: Emotions towards God of Select LGBTQs in the Philippines and the Experience of Shame. Intersections: Gender and Sexuality in Asia and the Pacific, (48).

Cotec, I. (2021, May 6). What Is Hegemonic Masculinity? Definition And How It Affects Us. Www.herorise.us. https://www.herorise.us/hegemonic-masculinity-definition-and-how-it-affects-us/

Crossman, A. (2020). What Is Qualitative Research? ThoughtCo. https://www.thoughtco.com/qualitative-research-methods-3026555

De Chavez, J. C., & Pacheco, V. (2020). Masculinity in the Age of (Philippine) Populism: Spectacle, Hypermasculinity, and Rodrigo Duterte. Masculinities & Social Change, 9(3), 261. https://doi.org/10.17583/mcs.2020.5157

Deslauriers, P., Lafrance St-Martin, L. I., & Bonenfant, M. (2020). Assessing Toxic Behaviour in Dead by Daylight : Perceptions and Factors of Toxicity According to the Game's Official Subreddit Contributors. Game Studies, 20(4).

Devilles, G. (2022). Bi-Phasic Dissonance in some Pinoy Boys' Love Series. Bi-Phasic Dissonance in Some Pinoy Boys' Love Series, 1(3). https://www.dlsu.edu.ph/wp-content/uploads/pdf/research/journals/akda/volume-1/3/6-devilles-bi-phasic-akda.pdf

Edwards, A. (2018). The Role of Hegemonic Masculinity in Gay Men's Health Disparities. The Role of Hegemonic Masculinity in Gay Men's Health Disparities. https://doi.org/10.15760/honors.595

Hale, S. E., & Ojeda, T. (2018). Acceptable femininity? Gay male misogyny and the policing of queer femininities. European Journal of Women's Studies, 25(3), 310–324. https://doi.org/10.1177/1350506818764762

Huchting, K., & Fisher, E. (2019). Introduction to the Special Issue: The Challenges and Opportunities of Including the LGBTQ Community in Catholic Education. Journal of Catholic Education, 22(3), 1–13. https://doi.org/10.15365/joce.2203012019

Hunt, C. J., Morandini, J., Dar-Nimrod, I., & Barlow, F. K. (2020). Why Do Some Gay Men Identify as "Straight-Acting" and How Is It Related to Well-Being?. Archives of Sexual Behavior, 49(5), 1713–1723. https://doi.org/10.1007/s10508-020-01702-1

Lewis, S. (2015). Qualitative Inquiry and Research Design: Choosing Among Five Approaches. Health Promotion Practice, 16(4), 473–475. https://doi.org/10.1177/1524839915580941

Mcleod, S. (2014). Structured and unstructured interviews. Simplypsychology.org. https://www.simplypsychology.org/interviews.html

Navera, G. S. (2021). The President as Macho: Machismo, Misogyny, and the Language of Toxic Masculinity in Philippine Presidential Discourse. When Politicians Talk, 187–202. https://doi.org/10.1007/978-981-16-3579-3_11

Qutoshi, S. B. (2018). Phenomenology: A Philosophy and Method of Inquiry. Journal of Education and Educational Development, 5(1). http://jmsnew.iobmresearch.com/index.php/joeed/article/view/157

Ramiro, L. S., Madrid, B. J., Norton-Staal, S., Cajayon-Uy, M. M., & Luna, P. B. (2022). National Baseline Study on Violence against Children and Youth (NBS-VAC) in the Philippines. Acta Medica Philippina, 56(15). https://doi.org/10.47895/amp.v56i15.5062

Rodriguez, A. M. L. R. (2022). Filipinising colonial gender values: A history of gender formation in Philippine higher education. Educational Philosophy and Theory, 1–12. https://doi.org/10.1080/00131857.2022.2128760

Pachankis, J. E., ClarkThe findings of this research highlight the impact of heteronormative ideals on the social standing of gay individuals in society. The study emphasizes the need for a more inclusive and accepting society that recognizes the diversity of gender and sexual identities., K. A., Burton, C. L., Hughto, J. M. W., Bränström, R., & Keene, D. E. (2020). Sex, status, competition, and exclusion: Intraminority stress from within the gay community and gay and bisexual men's mental health. Journal of Personality and Social Psychology, 119(3), 713–740. https://doi.org/10.1037/pspp0000282

Philippines Age structure - Demographics. (2020). Indexmundi.com. https://www.indexmundi.com/philippines/age_structure.html

Shaheen, M., Pradhan, S., & Ranajee. (2019). Sampling in Qualitative Research. Qualitative Techniques for Workplace Data Analysis. https://www.igi-global.com/chapter/sampling-in-qualitative-research/207789

Solis, R. (2020). Cruising Through Spaces: Exploring the Mediatization of Gay Cruising in the Philippines. Plaridel, 17(1), 223–252. https://doi.org/10.52518/2020.17.1-08solis

S. Reyes, M. E., A. Ballesteros, K. C., A. Bandol, P. A., H. Jimenez, K. A., & R. Malangen, S. D. (2019). Religiosity, Gender Role Beliefs, and Attitudes Toward Lesbians and Gays in the Philippines . North American Journal of Psychology, 21(3).

Ulla, M. B., & Pernia, E. E. (2022). Queering the labor migration: Highly-skilled Filipino gay men as labor migrants in Bangkok, Thailand. Cogent Social Sciences, 8(1). https://doi.org/10.1080/23311886.2022.2051816

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. BMC Medical Research Methodology, 18(1), 1–18. https://doi.org/10.1186/s12874-018-0594-7

Zheng, L. (2019). The Dyadic Effects of Top/Bottom Sexual Self-Labels and Partner Sexual Role Requirements on Facial Masculinity Preferences Among Gay and Bisexual Men in China. The Journal of Sex Research, 58(1), 1–7. https://doi.org/10.1080/00224499.2019.1680596

Zhou, Z. B. (2023). More bottoms than tops? Mediated sexual roles and masculinity assemblage in Chinese gay communities. Sexualities, 136346072211446. https://doi.org/10.1177/13634607221144623

CERESERVE: LETRAN-BATAAN WEB-BASED FOOD ORDERING APPLICATION

Aaron Salvio

Collegiate

Correspondence: 4180036@letranbataan.edu.ph

ABSTRACT

Food Applications in the present time have been integrated into our lives because of their convenience and accessibility. This application provides a platform specifically for the Knight's Café in Letran-Bataan; this will provide a more convenient experience for customers and ease the day-to-day operation of the vendors. The proponent has created an application that can aid the vendors using an admin dashboard able to list down the customers' orders and provide a soft copy of their receipts, update menu items, and update prices. Giving the customer convenience is also a significant factor in this project; it aims to provide software accessible to anyone with a phone or any other device that can connect to the internet, to view product listings, a flexible payment method with the use of Gcash and traditional cash, an option for a delivery service, and a community board to give feedback to the vendors. They are making the transaction efficient and convenient for the end-user and administrator.

Keywords: *online communication, communication platform, discord application, evaluation, degree of satisfaction*

NTRODUCTION

Online food apps have evolved over the last few years with the creation of applications like
Ordermo, FoodPanda, GrabFood, UberEATS, and many more. These apps give convenience to people with no time to cook and give them various cuisines to choose from, all within the comfort of their homes. According to google trends, the search for "Food Apps" like UberEATS and GrabFood peaked in April 2020, the first half of the pandemic. Because of the necessity to stay inside the house to avoid the virus, now it has been integrated into our daily lives in this new normal. According to the F1000Research article about Online Food Delivery Services (OFDS), "time is an important factor that consumers, particularly working adults and students, are concerned about. Consumers are eager to use OFDS because they can save significant time from menu selection to food preparation." This means that people with limited time benefit from
OFDSs in order for them to save more time rather than wait in line.

It is not just food delivery that has become online, but also cash apps. PayMaya and Gcash were at the forefront of the online cash app in the Philippines, revolutionizing how we transact online. Send cash, pay utilities, bank transfers, and all sorts of financial functions typically seen in a bank. According to Banko Sentral ng Pilipinas' highlight report about digital payments in
2019 and 2020, "For consumers, the use of digital channels for retail use cases such as merchant and utility payments is powering the spread of digital payments." (ESTIOKO, R.,

The Cereserve is named after the Roman goddess of agriculture, grain crops, and motherly relationships, Ceres. The Cereserve project took place to give a better experience for the customers of Knight's Café. This project serves as the medium to connect the vendors to a larger online audience that seeks their product but has no time to wait in line. The app also serves as a platform for simpler and better transactions using applications like Gcash. Ayala Enterprise
Circle says Gcash makes transactions quicker, easier, and safer. P2P and QR codes make the transaction more convenient and enticing for the customer. The proponent had this idea of a food app because of the waiting times for food to be delivered, according to Pourrahmani, E., Jaller, M.
& Fitch, D. T. (2023, September 1) "This is because the travel time of one unit of delivery distance varies in various cases depending on traffic congestion." However, being that cereserve is a Letran Exclusive web application this can eliminate that extra wait time because of traffic.

The Objective of the Study

The objective of Cereserve is to provide a platform for The Knight's Café to interact better with vendors and customers using a web-based system. The objectives and provide aid with food transactions within the confines of the Colegio, online or physical setting.
In general, Cereserve's objective is the following:

1.To develop a web application specifically for the Knight's Café for an easier and simpler transaction between the Letran Students, Teachers, and The Individuals running the Knight's Cafe.
2. Incorporate the online system to aid with the current operations of the Knight's café, which can provide a better workflow for the vendors and convenience for the students and teachers.
3. Develop functionalities within the Cereserve web app where students, teachers, and vendors of Letran-Bataan may:
3.1 Browse, search, and view the food served by the Knight's

Café.
3.2 Take and reserve food orders and have the option for pick up or delivery.

Statement of the Problem

Since the academic community at Letran-Bataan leads a fast-paced lifestyle, there has been a considerable increase in demand for effective and user-friendly meal-ordering systems in recent years. Students and faculty are currently facing the difficulty of readjustment as we return to our pre-pandemic normal. Even with this change, it is still difficult to get pandemic-era conveniences, including contactless and expedited meal ordering.

The lack of a specialized, distinct online application made to meet the unique requirements and preferences of the Letran-Bataan campus stands out as a particularly glaring service gap. Students, instructors, and staff are not able to enjoy the same level of convenience when ordering meals because there isn't a single platform that smoothly connects all of the campus' culinary options.

The following problems can be addressed thanks to this challenge:

1.Absence of Dedicated Platform: Letran-Bataan community members' meal ordering experiences have become disjointed and less efficient due to the lack of a dedicated online application for ordering food.
2.Lack of Convenient Alternatives for Food Ordering: When it comes to academic tasks like making lesson plans, marking papers, doing research, or getting ready for tests, both students and teachers might become so absorbed in these activities that they forget to eat. A specialized internet meal planner or application might be a helpful substitute, guaranteeing that they can get meals without having to give up a lot of study or preparation time. With the help of this approach, the academic community at Letran-Bataan should have a quick and easy way to reconcile their academic obligations with the need for sustenance.
3.Limited Menu Visibility: Currently, there isn't a complete platform that makes it easy for consumers to explore and learn about the entire spectrum of culinary alternatives on campus, which makes it difficult to make well-informed decisions when choosing what to eat.

This research intends to improve the overall campus dining experience and aid in the efficiency of food service operations by tackling these problems via the development of a special Letran-Bataan food ordering web application.

Significance of the Study

This study will benefit the following:
Letran Community. The result can help the Letran community get a simpler and more convenient way of getting the food they want without worrying about not being able to order the food they want.
Vendors of the Knight's Café. The result of the study can help the vendors have an impact on their workflow and how they plan out the day. The result of the study can help the vendors simplify their transactions with the students and teachers who plan to buy any food available on their menu for the day/week/month. With a simple, convenient way of paying for the food that they ordered.

Future Researchers. This study will serve as a reference for researchers who would like to continue or use this research to inspire IT and Business.

Scope

This software project is designed to develop and promote the Knight's café Web application. The designed web application will provide these features:

· Order food
· Option for Delivery or Pickup
· Community Board
· Add and remove menu Items (for staff)
· Track food prep and give an estimated time

Delimitations

This software is limited to having an internet connection to access, and due to limitations, the proponent will not integrate other payment methods like paymaya and coins.ph instead will focus on traditional cash payments and Gcash payments. As well as printing receipts, instead we will make a soft copy of the receipt (Similar to Gcash's receipts both the customer and vendor will have a copy of the transaction.). Any bugs or glitches that may occur in the application will be monitored and implement a fix for the problem.

REVIEW OF RELATED LITERATURE

As "you don't have to go outside to buy or order food," and "With just one click, you can order," most consumers claim they use online ordering. A study from the International Journal of Management and Commerce Innovations shows that a food application's responsive customer service might influence consumer preference because most customers are happy with service when it is quick and straightforward to get a hold of someone. The study also demonstrates that customers will cancel orders or utilize different applications if a rider needs to be more responsive. (Tatoy, Senier, Segura, & Jamoralin. 2022, September) Considering these studies, the researcher would develop new ways to order food in the school. Applications like FoodPanda, Ordermo, Grab, and Mangan. ph. These are the apps The proponent used as the base when developing the Cereserve app, the difference is that the app being developed is a Letran-Exclusive app for the Knight's café, and the menu will be updated depending on the admins. Being a Letran-exclusive application, this ensures quality food and service will be given to the customers. The application would feature a responsive, user-friendly interface and a community board where customers can post their experiences with the current menu items, make suggestions for new menu items, and suggest improvements to the food.

STUDIES PERTAINING TO FOOD APPLICATIONS

It was discovered that online food delivery (OFD) services can increase the sales and revenue of local restaurant businesses while also satisfying customers more effectively than conventional restaurant business services. (Rahman, M. et al. 2023)

In the past decade, online food delivery services have shown no indications of slowing their rapid growth and expansion. As these online channels acquire momentum, understanding consumer behavior becomes increasingly important. (Collison, J. 2020)

Online applications for small businesses can benefit business owners because the food is presented in its best form, which covers appearance, service, taste, and aroma—making the customer satisfied with the product they ordered. (Velasco, J.K.D. et al. 2021)

The last three to four years saw online delivery services become a part of Filipinos' lives. A study conducted by the International Journal of Business and Economy shows that out of 462, 75.05% of their

respondents use online delivery services 1 to 5 times per month, and 94.50% of them perceived the use of these services as "was more convenient than going physically to the establishment." (Flores, J.K.U., and Castaño; M.C.N. 2020)

The author's findings of "Understanding Consumer Behavior Towards Utilization of Online Food Delivery Platform" concluded that people use online food applications to order food because of convenience and to save time (Panse, Chetan & Rastogi, Shailesh & Sharma, Arpita & Dorji, Namgay. (2019)). It gives people control over technology as they can call the food they want from their place. We are still waiting for a downtrend in the food ordering system anytime soon with how people use phones daily and the convenience it brings daily.

Online Food Delivery Services (O.F.D.) have been an efficient coping mechanism for food businesses outsourcing to applications like FoodPanda because their hassle-free and convenient service helped them reach a broader market. (Abayan, R.R.A. et al. 2021).

Many studies echo the findings that consumers love the convenience and the time saved from ordering food outside. A few of these research (R., A. et al. (2017) "Online food ordering system"), says that in their findings, they found that it helps customers make orders quickly because it gives the information needed to make the order and to quote them again. "With an online food ordering system, a restaurant and mess menu online can be set up, and the customers can easily place an order."

A study about the satisfaction of customers by using online food applications during the pandemic stated that; services for online food ordering had the most significant effect on client satisfaction. An online food delivery service's quality is precious. Regarding the selected respondents, ordering or buying an online food delivery service is the main factor that has the most impact. (Dela Rosa, H.R. and Separa, L.A.C. 2022)

Lockdowns and physical separation regulations significantly increased the industry early in the pandemic, with delivery supporting the beleaguered restaurant economy. A regular presence in the dining environment will be in the future. Delivery of ready-to-eat meals has become increasingly important. The industry, due to the development of engaging, user-friendly apps and technologically advanced driving networks, as well as changing consumer expectations. (De Guzman, J. et al. 2022)

STUDIES PERTAINING TO CASH APPLICATIONS

Now let us talk about payment methods; while a cashless transaction is already a regular thing with credit/debit cards and cheques, E-wallets are now at the forefront of daily cashless transactions. Researchers from CHRIST (deemed a university) found that out of 93 respondents, 85% preferred a digital payment mode instead of traditional cash. (Shaji, J. and Mathias, C.
2021)

E-payments were also thought to be helpful by customers for carrying out online transactions, such as paying bills without leaving the comfort of their homes and protecting their families from viruses. The development of contactless payment technology, which enables payments to be made without any direct or indirect human touch, is accelerated by the concern around COVID-19 contamination. (Lopez. 2021).

The choice of payment methods between online and traditional comes down to two factors: convenience and the swiftness of the transaction. The challenges that come with online payment are malware attacks and financial instability. (Yang, W. 1970)

The growth of digital payments has grown over the last five years, again to quote the highlights report of the Bangko Sentral of the Philippines "State of digital payments in the Philippines" The value of monthly digital payments has grown to 24% of all transaction in 2019 alone, as opposed to 2018's 20%. (ESTIOKO, R., MESINA-ROMERO, B.R., and MASANGKAY, M.C. 2020).

Many people already use cashless transactions to complete their purchases; however, they offer greater transparency, scalability, and accountability. According to the responder, the primary benefit of cashless payment is the most secure way; however, gift cards are the most popular cashless payment option. However, gift cards and checks continue to be the respondents' preferred forms of cashless payment. Next comes the credit card. (Dotong, E.J. 2019)

This generation of people has entered the age of hybrid payment methods, where many other payment methods can be used, for example, Gcash, PayPal, and Credit/Debit cards, to name a few. Digital payment apps were developed to the point where almost every function needed is already there. To paraphrase the authors (Thirupathi, M., Vinayagamoorthi, G., and Mathiraj; S., 2019), digital payment apps are most beneficial to users in terms of quick payment, avoiding carrying physical cash, saving time, highly secured payment, getting discounts and offers, easy recharge, and green payment system.

One study illustrates the challenges of implementing cashless payment methods and the number of clients who use online payment methods. Furthermore, the increase in online business activity suggests that online payment methods will continue to be accepted by academic and business communities. Nonetheless, the acceptance and usage of multiple developing technologies present new opportunities and challenges for developing secure online payment mechanisms available today and soon. (Khan, B.U.I., et al. 2017).

Customer interest in using electronic payment systems, studies on the relevance of security in electronic payment systems as it pertains to user confidence, and reflections on the future of electronic payment systems. (S Fatonah et al 2018).

While many people have already implemented cashless transactions into their daily lives, there are certain things to be wary of when implementing these; Data security risks associated with cashless transactions and the rising threat of cybercrime, including online fraud and Scams, were acknowledged technology problems. The underprivileged and the older generations without bank accounts struggle to access internet connectivity, and more effective authentication methods were needed. (Manibog, S. and Alvarez, T.S. 2022)

Digital Finance has the potential for more inclusive finance. However, the digital ecosystem needs time to develop as barriers must be addressed to create access and scale.
According to the data, although there are more accounts and e-money transactions of more excellent value than before, there is still a low rate of apparent digital adoption, for instance, in mobile payments. (Llanto, Gilberto M.; Rosellon, Maureen Ane D.; Ortiz, Ma. Kristina P. 2018) accounts struggle to access internet connectivity,

and more effective authentication methods were needed. (Manibog, S. and Alvarez, T.S. 2022)

Digital Finance has the potential for more inclusive finance. However, the digital ecosystem needs time to develop as barriers must be addressed to create access and scale. According to the data, although there are more accounts and e-money transactions of more excellent value than before, there is still a low rate of apparent digital adoption, for instance, in mobile payments. (Llanto, Gilberto M.; Rosellon, Maureen Ane D.; Ortiz, Ma. Kristina P. 2018)

CONCEPTUAL FRAMEWORK

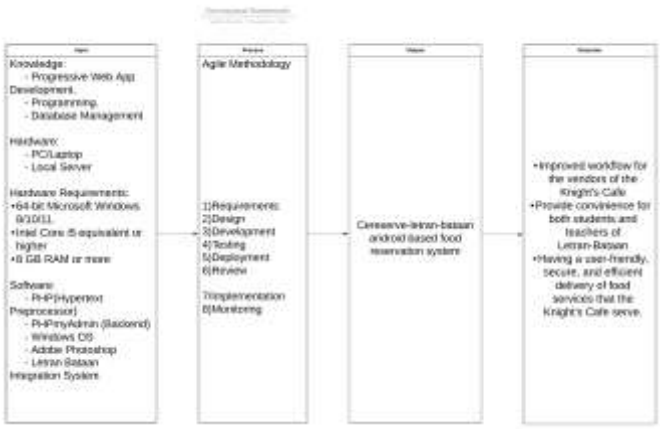


Figure 1 Input-Output Diagram

Figure 1 Input-Output Diagram Figure 1 shows how the developer of this study planned their approach to developing the Web application. The inputs have a prerequisite knowledge of web app development and require an understanding and the necessary programming skills to develop the application effectively. For hardware PCs/Laptops with the specification of Windows 8/10/11 machine with an i5 Intel Core CPU with 8GB of RAM to lessen any hardware malfunctions. Software requirements, including Windows 8/10/11, and PHPmyAdmin for the database containing the login credentials of the client and admins, as well as food items and prices. PHP programming language is designed to interoperate to work well with PHPmyAdmin as well as use it as the main programming language to make the application interactive for the user. Adobe Photoshop will be used as well for the icons, and the Letran-Bataan Integration System. The outcome aimed to be completed the functional Cereserve Food Reservation App, and monitoring of the web application for any bugs that can hinder the performance of the application, and make sure the students and staff members of Letran-Bataan can use it to order their food. The outcome of this study is as follows: Improved workflow for the vendors of the Knight's Café. Provide convenience for both students and teachers of Letran-Bataan. Lastly, a user-friendly, secure, and delivery food service that Knight café serves.

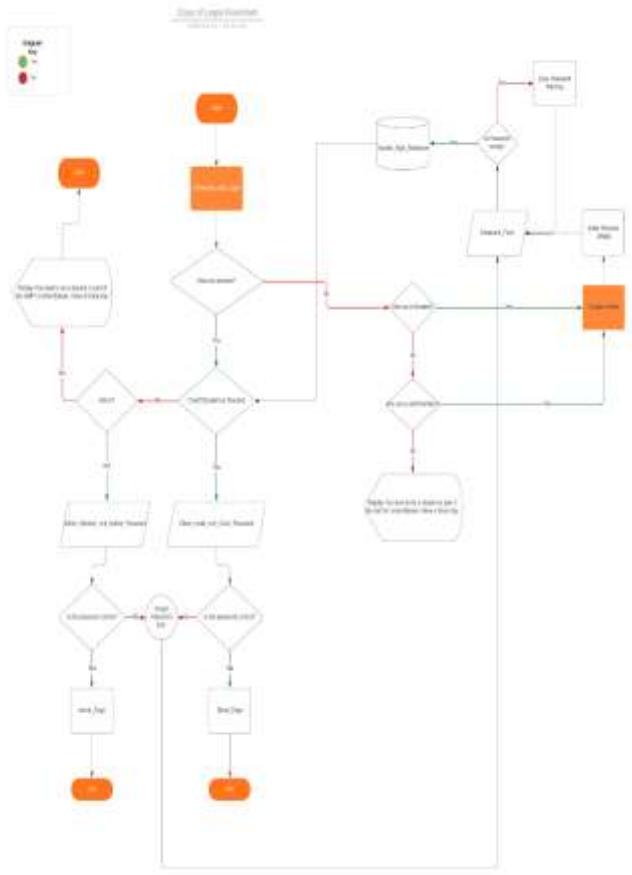


Figure 1.1 Flow and process of Login in the Web application

The figure presented shows the process of the Cereserve Application. From the login page, you can create your account by contacting an admin which then will give you a registration form asking for your student ID or Teacher ID and other personal details like name, course or advisory class, classroom number, and password, the password will then be validated using strict criteria for password security if the password isn't strong enough it will return "Password does not meet requirements" and loop back to the form.

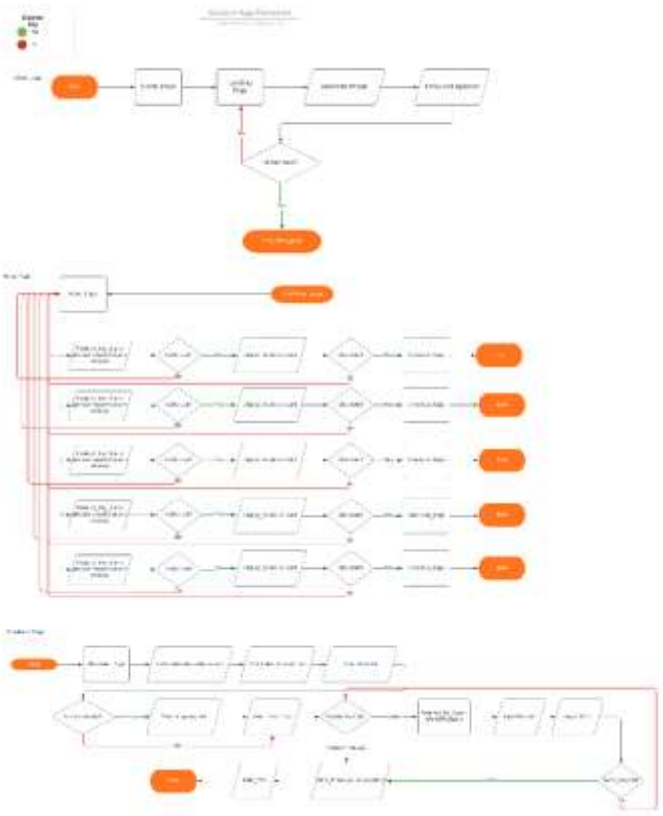


Figure 1.2 Flow of the Homepage, Menu Page, and Checkout Page

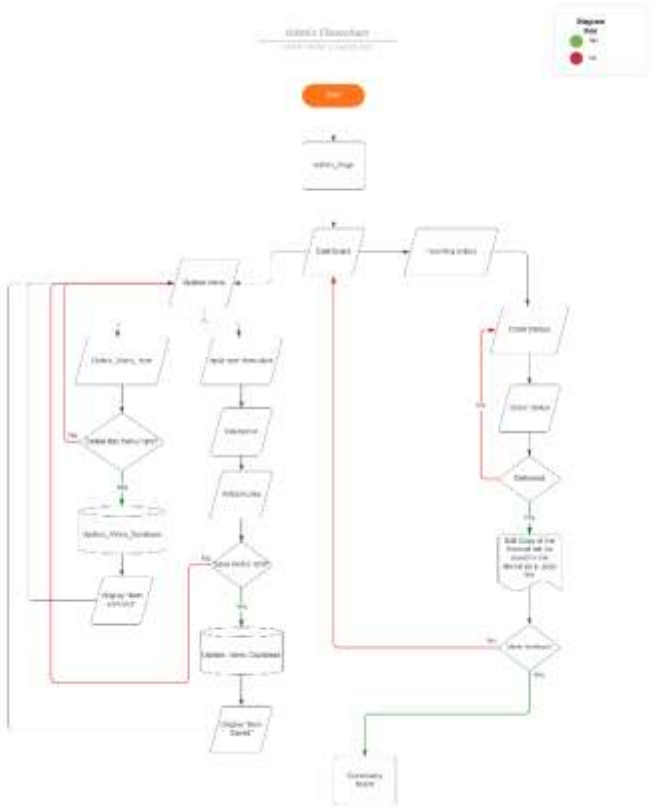


Figure 1.3 Flow and process of the admin page

The diagram above shows the flow and process of what the students/customers see; on the homepage, users will see a welcome image, news, and updates about new menu items or announcements. When the students/customers press "Order Now," they will be redirected to the menu page where the items available are listed; they can decide which items they want to add to the cart and will be redirected to the checkout page once they click the cart icon or checkout icon once they added something to their cart. Once on the checkout page, there will be a list of their orders present, the subtotal, shipping fee (if wanted to be delivered), and total amount. Lastly, the payment option they can choose is either cash or Gcash. If they choose Gcash, they will be redirected to the Gcash API that will be implemented on the app, where the user can input their number and be sent an OTP to be able to pay, after payment they will be greeted by "Thank you for ordering," message then be given an ETA before being redirected to the homepage

In this diagram, the flow and process of the staff page they see differs from the customers since they control most of the application. The staff page has two main functions order status changes and adding and removing menu items. In the first function, they can mark the order status as complete, in route, preparing, and canceled. Once the order status has been marked, it will save a softcopy of the transaction, like how Gcash prints their receipt whenever a transaction happens. That will act as a receipt, the staff can look at the reviews if they want, and they will be brought to the community board. Theother function is removing and adding menu Items; once they add or remove an item, the database will be updated.

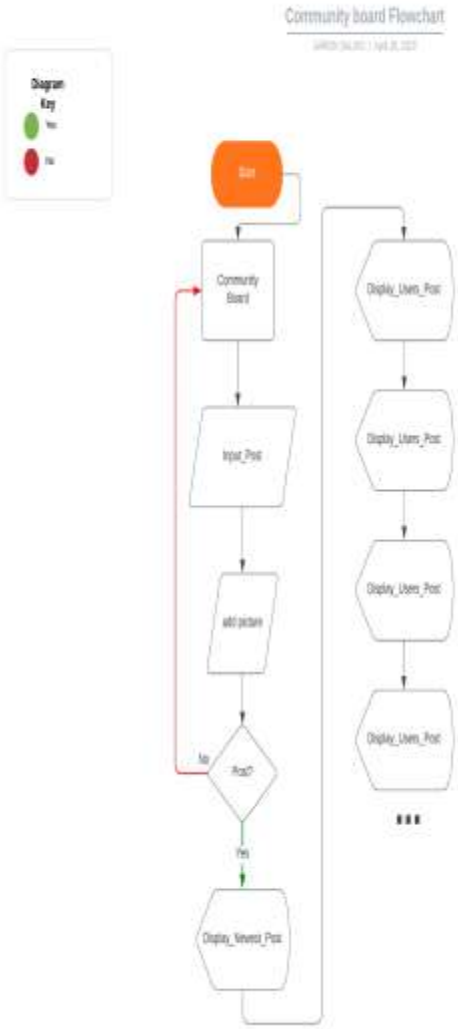


Figure 1.4 Flow and process of the community board

Lastly, this is the diagram for the community board. It follows a straightforward function that allows users to post reviews about their experience with the service and the food, and once someone posts, the newest post will be at the top of the board.

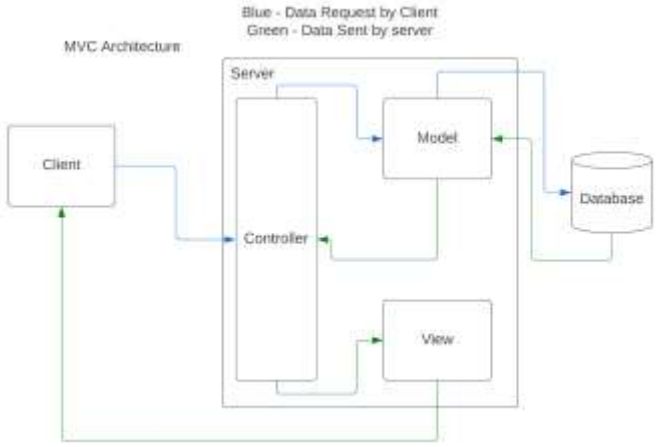


Figure 2 MVC (Model – View – Controller) Architecture

The MVC or Model–View–Model architecture has a strong separation between how to present data. The View. How to structure the data. The Model. How to handle user interaction. The Controller. The flow of control starts when the Client sends a request to the Server; the Controller will take that request and pass it to the Model; the Model will then interact with the database; once the data required has been obtained, the Model will send the data back to the Controller then be passed to View to format the data before sending it to the Client. The parts have specific responsibilities The Client – sends requests and receives data, The Controller – Takes user input and interacts with the Model and View, and The Model – Interacts with the database and executes business logic. The View – This is what the Client sees on the screen and generates the UI for the Client. The Database – Stores the data aligned with the intended business (i.e., Foods)

Methodology

Figure 3 Agile methodology

Agile methodology denies sequential phases and relies on simultaneous, incremental work across departments. Typically, teams accomplish work in two-week sprints. Throughout the duration of the project, multiple checkpoints permit the team to adjust course as necessary. By measuring the project's temperature

throughout the duration of the process, you can deliver a superior final product. The developer created dummy data for the User and Staff login credentials for the Requirements phase. In the Design Phase, the developer designed the application and established what programming language and database to use; the developer used SQL for the database creation and use PHP programming language to make the application interactive then used Svelte for the front end of the web application. In the Development Phase, with the use of brackets using the PHP programming language, the proponent has developed a running website for Cereserve. In the Testing Phase, this is where the proponents make a presentation to test the website itself and deliberate on any other issues that the website might have. Then the Deployment Phase, with the use of GoDaddy hosting and purchasing a domain cereserve is able to be tested online without the use of a local host.

RESULTS AND FINDINGS

Subjects The study intentionally selected participants from three groups—Collegiate Students, Faculty members, and Canteen employees—by categorizing the population into two subgroups: Customers and Admins. The survey focused on Collegiate Students and Faculty members, gathering their responses regarding the website and the survey focused on the Admins, is to gather feedback about the functionality of the website. The study is conducted at the Colegio de San Juan de Letran–Bataan Canteen, situated on the 1st floor of the campus in Letran Bataan.

Data Collection Procedure

The study's creator designed and launched a website, and after testing it with users, a survey was administered to identify any bugs or issues. The survey involved Collegiate Students, Faculty members, and Canteen employees, using ISO 25010 software quality standard that provides consistent terminology for specifying, measuring, and evaluating system and software product quality. Focusing on testing the website's Functionality, Reliability, Usability, Efficiency, Maintainability, and Portability. The results will guide fixes and updates to address any observed issues during the initial testing phase.

Data Analysis

For the evaluation of the said website, the proponents used the Likert scale to see the quality of the website, the scale was measured with this classification using a 5-point scale being 1 at the lowest and 5 being the highest. The interpretation of the data will be through weighted mean wherein 1 - Strongly disagree, 2 - Disagree, 3 - Neutral, 4 – Agree, and 5 – Strongly agree. The dataset consists of answers from ninety-nine (99) respondents ranging from 1 to 5. After adding up all the values in the customer dataset, which all amounted to 364, 365, 360, 361, and 372, respectively. After dividing by the amount of customers that answered the survey, the average came out as follows: 3.956521739, 3.967391304 3.913043478 3.923913043 4.043478261. After the customer dataset was computed we moved on to the admin dataset that consisted of 30, 31, 31, 28, and 29, respectively. After dividing by the number of admins that answered the survey, the average came out as follows: 4.285714286, 4.428571429, 4.428571429, 4, and 4.142857143.

Ethical Consideration

Upon receiving the Google form survey form, the first section will include an ethical consideration. This Consideration complies with the RA 10173 or The Data Privacy Act of 2012 which includes confidentiality, anonymity, cost, benefits, and risk, access to data, storage, and disposal, and voluntary participation, and they must agree before answering the survey. After gathering the data, all data remains confidential and private.

Results

The results of the survey for the customer page consist of ninety-two (92) respondents from the collegiate students and college faculty and from the admin page consisted of seven (7) respondents from canteen employees, using data analysis, the results are as follows:

Figure 1 Likert 5 point-scale

Likert-Scale Description	Likert-Scale	Likert Scale Interval
Strongly disagree	1	1.00 - 1.80
Disagree	2	1.81 - 2.60
Neutral/Uncertain	3	2.61 - 3.40
Agree	4	3.41 - 4.20
Strongly agree	5	4.21 - 5.00

For the primary analysis, we calculated descriptive statistics (means, standard deviation, and frequencies) for the SPCILS aggregate database. The means were interpreted as follows: Strongly disagree in the point range of 1.00 - 1.80, Disagree 1.81 - 2.60, Neutral 2.61 – 3.40, Agree 3.41 - 4.20, and Strongly agree 4.21 - 5.00 (see Table 3) (Pimentel, 2010).

T1

	1	2	3	4	5	Average
Customers: rate 1-5 [The buttons of the food web app (log in, and log-out) are working properly]	5	3	22	31	34	3.956521739
Customers: rate 1-5 [The fundamental functions of the food application such as (add to cart, remove, checkout, and community board) are working as intended]	3	6	21	33	33	3.967391304
Customers: rate 1-5 [The design of the website makes it enticing to order]	2	7	25	31	35	3.913043478
Customers: rate 1-5 [The community tab shows full transparency about the food being served]	3	6	21	32	32	3.923913043
Customers: rate 1-5 [The design of the web application is pleasing and easy to look at]	2	5	19	29	39	4.043478261

In Table 1, the calculated average for each survey question rating stands out as 3.957, 3.967, 3.913, 3.924, and 4.043. This figure places the results comfortably within the Likert scale interval of 3.41 to 4.20, denoting agreement. Therefore, it is indicative that respondents express agreement regarding the assessment of the website for the customers.

T2

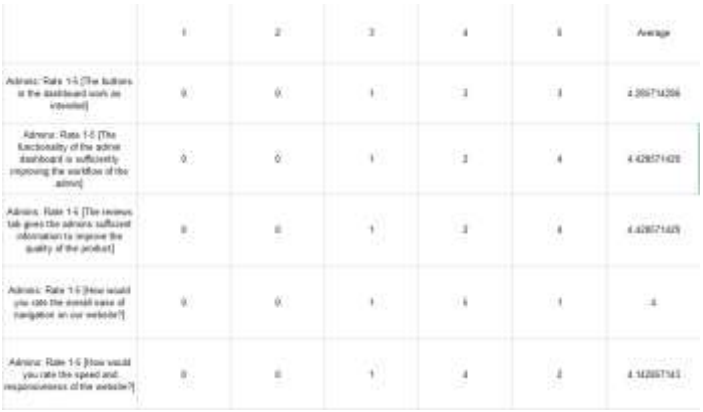


Table 2 displays the calculated average scores for each survey questionnaire targeting administrators. The first three survey ratings represent computed averages, yielding scores of 4.286, 4.429, and 4.286, respectively. These scores position the results within the Likert scale interval of 3.41 to 4.20, indicative of strong agreement. Consequently, the findings suggest that respondents generally express agreement regarding the admin webpage.

The next two survey rating are computed as follows: 4 and 4.123, respectively. These scores position the results within the Likert Scale interval of 3.41 to 4.20, Indicative of agreement. The findings suggest that respondents generally express agreement regarding the speed, responsiveness, and ease of use of the admin webpage.

CONCLUSION AND RECOMMENDATION

The study aimed to achieve the following objectives: Create a user-friendly web application for Knight's Café, streamlining transactions for Letran students, teachers, and café staff. Integrate an online system into Knight's Café operations to enhance workflow for vendors and provide convenience for students and teachers. Develop features in the Cereserve web app allowing Letran-Bataan students, teachers, and vendors to: Browse, search, and view the Knight's Café menu. Place and reserve food orders with options for pick-up or delivery.

Ultimately, the progress of Cereserve effectively achieved nearly all of its goals. The web tool streamlines the process of placing meal orders for students and professors from their classrooms, enabling them to allocate more time to their academic or professional pursuits. Moreover, the incorporation of an administrative dashboard amplifies the productivity of café staff and offers clients supplementary convenience. Although clients can place and reserve meal orders, it is important to note that the option for pick up is not yet accessible. Currently, only delivery services are offered. The browsing, searching, and menu viewing experience is limited due to the lack of manpower for the development of the website. Finally, although the admin dashboard itself is satisfactory, there remains concern regarding the segregation of administrators for each individual store. Examining the outcomes, the proponent has created a user-friendly online food web application that includes an administrative webpage for administrators. The proponent has established the groundwork for future proponents who wish to pursue this venture further.

RECOMMENDATIONS

1. Functionality:

a. Incorporate an option for designated pick-up locations within the canteen for reserved orders.
b. Implement a reply function for enhanced interaction on the community page, rendering it akin to a mini social media platform within the web application.
c. Implement additional payment options.
d. Incorporate different stores from the canteen.
e. Have a different admin dashboard for different stores.
f. Implement the account creation of the admin account to have the option to tell which store they are from. So they have their own dashboard.

2. Security:

a. Strengthen domain security by integrating an additional layer, such as SSL encryption.
b. Put in place a safe user authentication system. Similar to Multi-Factor Authentication (MFA), to improve user account security and thwart unwanted access.
c. To safeguard consumers' financial information, implement industry-standard payment transaction methods for secure transactions.
d. Strict access controls should be implemented to limit user access according to roles and responsibilities, reducing the possibility of unwanted acts.
e. Should undergo rigorous vulnerability tests.

3. Design:

a. Enhance the visual appeal by introducing a vibrant color palette that strikes a balance between aesthetics and user comfort.
b. Optimize the web application for mobile devices to ensure a seamless and user-friendly experience.
c. Integrate a side menu icon within the admin dashboard for improved navigation and accessibility.

REFERENCES

Tatoy, Senier, Segura, & Jamoralin. (2022, September). DEMOGRAPHIC ANALYSIS OF CUSTOMER PREFERENCE IN USING ONLINE FOOD APPLICATIONS . Retrieved December 4, 2023, from https://www.researchpublish.com/upload/book/DEMOGRAPHIC%20ANALYSIS-01042022-4.pdf

Rahman, M., Hasan, S. B., Nayem, T. A., & Neha, T. P. (2023, March 28). Impact of online food delivery services on the local restaurant business's sales and revenues and to. . . https://doi.org/10.13140/RG.2.2.12485.32489

Collison. (2020). The Impact of Online Food Delivery Services on Restaurant Sales.
Retrieved December 4, 2023, from https://web.stanford.edu/~leinav/teaching/Collison.pdf

Velasco, Tatoy, Dela Cruz, & Monzon-Po. (2021, October 1). Level of customer

satisfaction on small online food businesses opened during the pandemic in south of Metro Manila: Basis for enhancements for small online food businesses. Retrieved December 4, 2023, from https://www.researchgate.net/profile/Justin_Kyle_Velasco/publication/355005106_Level_of_customer_satisfaction_on_small_online_food_businesses_opened_during_the_pandemic_in_south_of_Metro_Manila_Basis_for_enhancements_for_small_online_food_businesses/links/617a5ae1eef53e51e1f73c98/Level-of-customer-satisfaction-on-small-online-food-businesses-opened-during-the-pandemic-in-south-of-Metro-Manila-Basis-for-enhancements-for-small-online-food-businesses.pdf?origin=journalDetail&_rtd=e30%3D

Flores, & Castaño. (2020, December 4). FACTORS INFLUENCING CONSUMER
PURCHASE BEHAVIOR ON FOOD DELIVERY APPS. Retrieved December 4, 2023, from https://myjms.mohe.gov.my/index.php/ijbec/article/view/11404

Panse, C., Rastogi, S., Sharma, A., & Dorji, N. (2019, August 1). *UNDERSTANDING*

CONSUMER BEHAVIOUR TOWARDS UTILIZATION OF ONLINE FOOD DELIVERY PLATFORMS. ResearchGate. https://www.researchgate.net/publication/335739176_UNDERSTANDING_CONSUMER_BEHAVIOUR_TOWARDS_UTILIZATION_OF_ONLINE_FOOD_DELIVERY_PLATFORMS

Abayan, R.R.A. *et al.* (2021) *DETERMINING THE PERCEPTION OF THE RESTAURANTS AND FAST-FOOD CHAINS IN ILIGAN CITY TOWARD ONLINE FOOD DELIVERY (OFD) APPLICATIONS DURING THE COVID-19 PANDEMIC*, *researchgate*. Available at: https://www.researchgate.net/publication/355874509_DETERMINING_THE_PERCEPTION_OF_THE_RESTAURANTS_AND_FAST-FOOD_CHAINS_IN_ILIGAN_CITY_TOWARD_ONLINE_FOOD_DELIVERY_OFD_APPLICATIONS_DURING_THE_COVID-19_PANDEMIC (Accessed: 04 December 2023).

Adithya, R. (2017) *Online food ordering system*, *researchgate*. Available at: https://www.researchgate.net/profile/Roshan-Adithya/publication/321844341_Online_Food_Ordering_System/links/611df9431ca20f6f8630b883/Online-Food-Ordering-System.pdf (Accessed: 04 December 2023).

Dela Rosa, H.R. and Separa, L.A.C. (2022) *Satisfactions of Customers by Using Online Food Application Services During Covid-19 Pandemic*, *INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH*. Available at: http://ijmaberjournal.org/index.php/ijmaber/article/view/611/333 (Accessed: 04 December 2023).

de Guzman, J. *et al.* (2022) *E-commerce food delivery challenges: The case of order mo*, *SSRN*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4024999 (Accessed: 04 December 2023).

Shaji, J. and Mathias, C.A. (2021) *Impact of cashless payment mode among university students* , *researchgate*. Available at: https://www.researchgate.net/publication/349588555_Impact_of_Cashless_Payment_Mode_Among_University_Students (Accessed: 04 December 2023).

Lopez, J.M.A. (2021) *Customer Satisfaction and Preference on Electronic Payments (E-Payments) Among the Employees of the Provincial Government of Batangas*, *Asia Pacific Journal of Academic Research in Business Administration*. Available at: http://apjarba.apjmr.com/wp-content/uploads/2021/09/3-APJARBA-2021-021.pdf (Accessed: 04 December 2023).

Yang, W. (2017) *Analysis on online payment systems of E-COMMERCE - core*, *core.ac.uk*. Available at: https://core.ac.uk/download/pdf/161421228.pdf (Accessed: 04 December 2023).

ESTIOKO, R., MESINA-ROMERO, B.R. and MASANGKAY, M.C. (2020) *STATE OF digital payments in the philippines*, *Bangko Sentral ng Pilipinas*. Available at: https://www.bsp.gov.ph/PaymentAndSettlement/210616_BTC_Philippines_Report_DPS.pdf (Accessed: 04 December 2023).

Dotong, E.J. (2019) *Cashing in on cashless commerce: Analyzing the cashless transaction in ...*, *Research Gate*. Available at: https://www.researchgate.net/profile/Emmanuel-Dotong/publication/353121123_Cashing_In_on_Cashless_Commerce_Analyzing_the_Cashless_Transaction_in_the_Philippine_Supermarket_Through_Consumer_Satisfaction/links/60e81480b8c0d5588ce38956/Cashing-In-on-Cashless-Commerce-Analyzing-the-Cashless-Transaction-in-the-Philippine-Supermarket-Through-Consumer-Satisfaction.pdf (Accessed: 04 December 2023).

Thirupathi, M., Vinayagamoorthi, G. and Mathiraj, Sp. (2019) *Effect of cashless payment methods: A case study perspective analysis*, *Research Gate*. Available at: https://www.researchgate.net/profile/Sp-Mathiraj-Subramanian-2/publication/344198737_Effect_Of_Cashless_Payment_Methods_A_Case_Study_Perspective_Analysis/links/5f5afbba4585154dbbc87e91/Effect-Of-Cashless-Payment-Methods-A-Case-Study-Perspective-Analysis.pdf (Accessed: 04 December 2023).

Khan, B.U.I. *et al.* (2017) *A compendious study of online payment systems: Past developments ...*, *semanticscholar.org*. Available at: https://pdfs.semanticscholar.org/3e60/35d2232d5f3db969a88d48695b6c58361609.pdf (Accessed: 04 December 2023).

Fatonah, S., Yulandari, A. and Wibowo, F.W. (2018) A review of e-payment system in e-commerce - iopscience, IOPSCIENCE. Available at: https://iopscience.iop.org/article/10.1088/1742-6596/1140/1/012033 (Accessed: 04 December 2023). Ma, S.M., Alvarez, T.S. and Alvarez, M.T. silos (2022) *Perceived benefits, problems, and challenges towards cashless financial ...*, *Research Gate*. Available at: https://www.researchgate.net/profile/Ma-Teresa-Alvarez/publication/362015674_Perceived_Benefits_Problems_and_Challenges_towards_Cashless_Financial_Transactions/links/62d13a287cd2e50722aef002/Perceived-Benefits-Problems-and-Challenges-towards-Cashless-Financial-Transactions.pdf (Accessed: 04 December 2023).

Llanto, G.M., Rosellon, M.A.D. and Ortiz, Ma.K.P. (1970) *finance in the Philippines: Status and prospects for digital financial inclusion*, *E*. Available at: http://hdl.handle.net/10419/211042 (Accessed: 04 December 2023).

Tan, S.Y., Lim, S.Y. and Yeo, S.F. (2021) *Online food delivery services: Cross-sectional study of consumers' attitude in Malaysia during and after the COVID-19 pandemic*, *F1000Research*. Available at: https://f1000research.com/articles/10-972 (Accessed: 04 December 2023).

Pourrahmani, E., Jaller, M., & Fitch, D. T. (2023, September 1). Modeling the online food delivery pricing and waiting time: Evidence from Davis, Sacramento, and San Francisco. https://doi.org/10.1016/j.trip.2023.100891

ASSESSING ELECTRICAL HAZARD AWARENESS AND SAFETY MEASURES AMONG GRADE 12 STUDENTS AT LETRAN-BATAAN: GENDER AND TRACK-BASED DIFFERENCES AND COMMUNITY LITERACY IMPLICATIONS

Joseph Austin Enriquez, Jim Andrei Manrique, Richelle Tolentino

Collegiate

Correspondence: 4200041@letranbataan.edu.ph

ABSTRACT

Understanding electrical hazards and safety measures among Grade 12 students from Letran is crucial for enhancing safety and preventing accidents. This study investigates the levels of awareness regarding electrical hazards and safety measures among 92 Grade 12 students at Letran-Bataan, divided equally into 46 males and females, focusing on gender, academic tracks, and their implications for community and literacy development. Using a quantitative approach, a mixed-mode survey was conducted with a purposive sample of participants. The analysis included descriptive statistics, parametric, and non-parametric tests. Results indicate a high overall awareness level among Grade 12 students regarding electrical hazards and safety measures. While gender-based differences were observed, with males exhibiting higher awareness levels in safety measures, there was no significant difference in hazard awareness between genders, suggesting similar levels of hazard awareness among male and female students. Tailored educational interventions are recommended, especially across diverse tracks, to effectively enhance awareness. The study advocates institutional policies integrating safety education, contributing to community literacy development, and improving safety standards. These findings underscore the importance of targeted interventions for enhancing electrical safety awareness among Grade 12 students at Letran-Bataan, offering valuable insights for educational and community safety initiatives.

Keywords: *Electrical hazards, Safety measures, Grade 12 students, Awareness levels, Gender differences, Academic track, Technical- track, Community development, Literacy initiatives.*

INTRODUCTION

Electricity, an intangible phenomenon inherent in the natural world, has been widely recognized as a substantial danger in many environments, encompassing domestic spaces, business enterprises, educational facilities, and other sites [12]. Electricity poses a substantial danger due to its potential to cause harm. However, when effectively regulated and controlled, the possibility of damage occurring is significantly reduced [9]. Electrical hazards provide a significant and common occupational risk, as individuals across numerous job roles are routinely exposed to electrical energy while carrying out their everyday tasks [47]. Electricity is often described as a "silent killer" due to its invisible nature, as it cannot be detected through our senses of taste, sight, hearing, or smell [25]. The phenomenon under investigation is characterized by its innate invisibility. The improper handling of this object can lead to significant damage to properties.

This is particularly relevant for grade 12 students, who are increasingly exposed to electrical devices both in their academic pursuits and personal lives. The Commission on Higher Education's research indicated that currently, students aged 16 to 18 are enrolled in Grades 11 and 12, part of the Senior High School program.

Therefore, adolescents between 16 and 18 years old are in a crucial period of development where they are considering various career options and becoming more independent, putting them at risk of electrical hazards if they are not properly informed about safety precautions related to electricity (Johnson et al., 2019). Starting from young students, everyone must learn about the significance of electrical safety. Developing positive habits at a young age can continue into later years [8]. Therefore, this timeframe offers a chance to provide them with knowledge on electrical safety to avoid accidents and injuries.

An electrical hazard is a situation with potential danger involving contact with live electrical components or objects that have been energized by a malfunction [14]. Electrical contact can be dangerous and may result in injuries such as shock or burns.

Electrical appliances are ubiquitous, and we engage with them regularly daily. Many individuals frequently overlook the potential hazards of these goods, yet it is crucial to consider electrical safety protocols when engaging with electrical apparatus. Around 1.2 million individuals annually suffer

injuries caused by electrical accidents [34]. This considerable statistic demonstrates the widespread occurrence of electrical injuries. As previously stated, our daily interaction with electrical equipment heightens the likelihood of electrical injury. Given this statistic, individuals must acquire and adhere to electrical safety protocols. Electrical accidents can occur among individuals of any demographic; however, adolescents and vulnerable adults are more prone to experiencing enduring harm as a result of such injuries. Electrical accidents have the potential to propagate and escalate into more injuries; thus, individuals must acquire and adhere to electrical safety protocols.

Additionally, ESFI has gathered occupational electrical injury and fatality data from sources such as the U.S. Bureau of Labor Statistics (BLS) and the U.S. Census Bureau. According to these statistics, there were a total of 32,790 non-fatal injuries related to electrical accidents for individuals aged 16-19 in 2020, encompassing all types of conditions.

In the realm of products, appliances were responsible for causing 71% of electrical fires [21]. Each household possesses multiple electrical items that have the potential to cause accidents. Regardless of size, both small and large electrical appliances can inflict harm. Frequently, these injuries might result in severe outcomes. Irrespective of the frequency of your use of an electrical device, it is imperative to adhere to safety protocols to mitigate the risk of any untoward occurrences. Manufacturers frequently provide advice for the safe handling of appliances. Ensure strict adherence to these guidelines as a safety measure.

Additionally, studies and reports have emphasized that electrical accidents involving adolescents is common, prompting a closer examination of the causes and preventive measures. An example of this is a tragic event with a 16-year-old from Uttar Pradesh, as recounted in the Times of India, which emphasized the hazards of using smartphones while being plugged in. Likewise, The Sun News, UK also reported on the tragic death of a 17-year-old girl who passed away while using her phone in the bath, leading to conversations about electricity safety. Additionally, Sun Star stated that an 18-year-old boy in Barangay Agus, Lapu-Lapu City was electrocuted after coming into contact with a live electrical wire, highlighting the need for adolescents to be aware of electrical hazards and safety measures. These occurrences emphasize the importance of fully understanding and being aware of electrical hazards and safety measures, particularly among adolescents [36].

The concept of living without electricity is inconceivable to us. Electricity is essential in our everyday life since it supplies energy to our urban areas, residences, electrical equipment, gadgets, and other technical items. Electricity is an intangible kind of energy that does not possess auditory, visual, or smell characteristics. Although it is a crucial element of our daily lives, we must be mindful of the possible hazards it poses to ourselves and our loved ones. Therefore, it is important to have a thorough understanding, especially adolescents since most individuals in this age bracket tend to ignore the potential electrical hazards of their equipment. Hence, it is vital to possess a comprehensive comprehension of the present condition of awareness regarding electrical hazards and electrical safety measures among individuals in this age bracket, in order to effectively and securely utilize electrical power.

Electrical safety is of utmost importance in every household, regardless of whether one is a homeowner or a renter [15]. The awareness of electrical hazards plays a crucial role in mitigating the significant number of home fires, injuries, and fatalities that result from electrical incidents annually [15]. Individuals' increasing reliance on electricity has led to a growing need for heightened awareness of electrical safety among users. The importance of learning to use electricity safely from a young age cannot be overstated [2].

The Electrical Safety Foundation (ESFI) is an organization that is recognized as an authority on electrical safety. The mission of ESFI is to educate the public and raise awareness about the prevention of electrically related injuries, deaths, and fires. By doing so, ESFI aims to save lives and protect property through its outreach efforts. The use of electric technology is becoming more prevalent in the future. As electrification expands, there is a possibility of encountering more electrical products. Thus, safety is crucial for the electrical industry's success and growth in meeting society's needs [15].

Electrical injuries, which can be caused by lightning, low-voltage, or high-voltage incidents, are a common form of mechanical trauma that can result in severe harm or even death. Electrical injuries are typically accidental and can often be prevented [34]. Electrical injuries have the potential to cause harm to various tissues and organs and, in some cases, can be fatal. Approximately 1,000 Americans lose their lives each year due to electrical injuries. Around 400 injuries occur because of high-voltage electrical accidents. Approximately 30,000 nonfatal shock episodes happen each year. Electrical accidents account for 5% of the admissions to burn units in the United States. Around 20% of electrical injuries happen to adolescents, with a higher occurrence among adolescents [34]. Thus, electrical accidents at home commonly injure adolescents, while adults tend to experience these injuries at work, making them a significant cause of workplace-related deaths .

Recognizing workforce diversity, including gender differences, is essential for ensuring the safety and health of all workers as stated by the International Labour Organization [18]. When looking at workplace safety, it is crucial to acknowledge that men and women could face different dangers depending on their tasks and duties. This requires putting in place unique electrical safety measures to deal with these particular hazards. Moreover, prior studies, like

Johnson and Smith's (2019) examination of universal electrical safety education and Rozanski and Cichowicz's (2020) research on adolescents' developmental stage and career path exploration, emphasize the significance of specific educational interventions. These actions are essential for targeting particular requirements and deficiencies based on the grade 12 students' understanding of electrical hazards and safety measures.

This research aims to evaluate the knowledge of electrical hazards and safety measures among senior high school students at Letran-Bataan, examining potential variations according to gender, academic, and technical tracks. Moreover, there is an emphasis on the importance of incorporating electrical safety instruction in academic coursework [37]. Educational institutions have a vital role in getting students ready for practicing electrical safety in work settings [37]. Blending academic knowledge and workshops with hands-on experience may encourage a safety-conscious environment.

The research is also looking into what factors affect students' comprehension of electrical hazards, such as their past experience with electrical safety training, their occupation as a student and availability of educational resources. This data is crucial for suggesting appropriate suggestions and actions derived from the survey results that will greatly aid in advancing a safer environment and responsible utilization of electrical systems for grade 12 students at Letran-Bataan.

Research Rationale

The society continues to grow its dependency on electricity, so does the risk of encountering electrical hazards [39]. This increasing dependency involves a corresponding prominence on awareness of electrical hazards and safety measures [39]. Awareness of electrical hazards among twelfth-grade students is crucial due to several reasons. Adolescents at this age often gain more independence and may start using electrical appliances and devices without adult supervision, increasing the risk of accidents or mishaps involving electricity [18]. Moreover, as these students are preparing to enter higher education or the workforce, knowledge of electrical safety becomes essential. For instance, a study emphasizes that the lack of preparedness in facilities/equipment in the Technical-Vocational Livelihood Track underscores the need to evaluate electrical hazard awareness and enforce safety measures prior to implementation [22]. Additionally, instilling good safety habits early on can have long-term benefits, reducing the likelihood of electrical accidents or injuries in adulthood [24]. Therefore, supplementary education in electrical safety is crucial to mitigate hazards associated with electricity consumption.

The purpose of this study is to assess the level of awareness of electrical hazards and safety measures among twelfth-grade students at Letran-Bataan, considering their gender differences and academic track, including the Technical-Vocational-Livelihood track. By focusing on this demographic age group, the study aims to fill a gap in existing research, which often overlooks younger populations in favor of working-age respondents. The findings will be used to develop appropriate recommendations and interventions to promote electrical safety among Grade 12 students of Letran-Bataan.

Statement of the Problem

The study aims to assess the awareness levels regarding electrical hazards and safety measures among grade 12 students at Letran- Bataan: Examining Gender and Academic Track- including the Technical-Vocational-Livelihood track based.

Specifically, the purpose of this study is to address the following questions:

1.Determine the level of awareness among Grade 12 students at Letran- Bataan regarding electrical hazards and safety measures.

2.What is the level of awareness among Grade 12 students at Letran- Bataan regarding electrical hazards and safety measures when grouped according to gender?

3.Are there significant differences in the level of awareness and understanding of electrical hazards and safety measures among grade 12 students across different strands under academic and Technical-Vocational-Livelihood track?

4.Investigate factors that may impact students' understanding of electrical hazards and safety measures, such as prior exposure to electrical safety education and access to learning tools.

5.What recommendations can be suggested to enhance safety education and promote community literacy development at Letran-Bataan?

Objectives

The research aims to collect baseline data for community and literacy development at Letran-Bataan. To understand the community's status quo leading to a more effective community development initiatives and skills training for the three- year proposal that will improve electrical safety education in the Colegio encompassing curriculum enhancements, practical training seminars, and awareness campaigns.

The primary objective of this investigation is to determine:

1.Assess the level of awareness of electrical hazards and safety measures among grade 12 students at Letran-Bataan, with a focus on gender differences.

2.Evaluate Grade 12 students at Letran-Bataan on their awareness of electrical hazards and safety measures, particularly examining gender-based differences or similarities.

3.Examine potential differences in the awareness levels of grade 12 students across different academic track, including technical track, regarding electrical hazards and their adherence to electrical safety measures.

4.Investigate factors influencing students' understanding of electrical hazards and safety measures, including prior exposure to electrical safety education and access to learning tools.

5.Develop a three- year proposal, recommendations, and measures based on the survey results to enhance safety education and promote community literacy development at Letran- Bataan.

Significance of the Study

The significance of this study extends beyond its immediate scope to potentially influence institutional policies at Letran-Bataan. Currently, the Colegio lacks a specific structure for literacy training, focusing primarily on computer education. By highlighting the importance of electrical safety education among Grade 12 students, this study advocates for a broader educational framework that includes critical topics like electrical hazards and safety measures. Integrating these insights into the Colegio's policy can pave the way for a more comprehensive and holistic approach to education, addressing not just computer literacy but also crucial life skills such as electrical safety. Ultimately, this initiative contributes not only to individual student development but also to the overall literacy and safety standards within the Letran- Bataan community at large.

This study is significant to:

1.Stakeholders- This study's significance to stakeholders at Letran-Bataan lies in its potential to influence institutional policies by advocating for a broader educational framework that includes critical topics like electrical hazards and safety measures. Integrating these insights into the Colegio's policy can lead to a more comprehensive approach to education, contributing to individual student development and overall safety standards within the community.

2.Non- Personnel Staff- This study is valuable to non-teaching personnel at the Colegio as it advocates for integrating electrical safety education into the institution's policies. By emphasizing this crucial topic for Grade 12 students, it promotes a more comprehensive educational framework that enhances overall safety standards within the Letran-Bataan community.

3.Students- Through this study, students will be able to assess their level of awareness regarding electrical hazards and safety precautions with the aid of this research and take appropriate action following the findings.

4.Parents- Through this study, the parents will be able to determine whether or not their child has an average understanding of electrical hazards and safety measures through this research.

5.Teachers- Through this study, teachers can evaluate the degree of consciousness regarding electrical hazards and safety protocols among the senior high school pupils residing in Letran-Bataan means of this research endeavor. This research may provide educators insight into whether they should integrate concise information into their discussions.

6.Letran- Bataan Community- This study is significant to the Letran-Bataan community by improving overall safety standards through increased awareness of electrical hazards and safety measures among Grade 12 students.

7.Future Researchers- The study's findings are advantageous for subsequent researchers. This research may serve as a foundation for a forthcoming learning theory.

Scope and Delimitation

This study focuses on Grade 12 students at Letran-Bataan and aims to assess their awareness levels regarding electrical hazards and safety measures during the academic year 2023-2024. The investigation includes examining potential differences in awareness between male and female students, as well as across different academic track including the Technical-Vocational-Livelihood track. Additionally, the study delves into factors that may impact students' understanding of electrical hazards and safety measures. The proposed recommendations for improving the effectiveness of electrical safety educational programs will be specific to Grade 12 students at Letran-Bataan and may not be generalize to other educational institutions or age groups.

Moreover, recognizing workforce diversity, including gender

differences, is crucial for ensuring the safety and health of all workers. A gender sensitive approach acknowledges that men and women may face distinct hazards at work due to their different roles and responsibilities, requiring different safety measures. Gender identities include male, female, transgender, other, or none. This research paper focuses on the meaning of gender in terms of societal roles, expectations, and responsibilities as male and female.

Definition of Terms

Adolescents- According to World Health Organization, adolescence is the phase of life between childhood and adulthood, from ages 10 to 19. It is a unique stage of human development and an important time for laying the foundations of good health.

Awareness - refers to the state or ability to be aware of and perceive events, objects, or sensory patterns. In this state of awareness, an observer can verify sensory information without necessarily implying comprehension.

Electrical Hazards- A dangerous situation was coming into contact with electricity or when equipment stops working correctly can lead to getting shocked, burned by an electrical arc, burned by heat, or even an explosion (according to the 2004 NFPA 70E).

Electrical Safety - Understanding the dangers of using electricity and taking necessary steps to prevent accidents and harm (2004 NFPA 70E).

Gender- According to Collins Dictionary, gender refers to being male or female with the societal and cultural expectations and norms associated with individuals of each sex.

Academic Track- According to the Commission on Higher Education the Academic track includes three strands: Accountancy, Business and Management (ABM); Humanities and Social Sciences (HUMSS); and Science, Technology, Engineering, Mathematics (STEM)

Technical-Vocational-Livelihood track- According to Department of Education, the TVL Track is among the four tracks provided in SHS. There are four strands available: Agri-Fishery Arts (AFA), Home Economics (HE), Industrial Arts (IA), and Information and Communications Technology (ICT).

REVIEW OF RELATED LITERATURE

The present chapter establishes a strong foundation for the research by thoroughly examining local and foreign-related literature and studies. Moreover, it creates the conceptual framework that is a significant foundation for the investigation.

Electrical Hazard and Safety Measures

Electricity is an essential part of modern life but also poses inherent risks that must be managed carefully [28]. OSHA, the Occupational Safety and Health Administration, is a regulatory agency in the United States responsible for ensuring workplace safety and health. Similarly, the National Fire Protection Association (NFPA) develops and publishes codes and standards for fire safety, including guidelines related to electrical hazards [27].

Electrical hazards encompass potential dangers associated with the use, installation, or maintenance of electrical systems and equipment. These hazards range from electrocution to fire hazards [28]. Household settings are common sites for electrical injuries, with hazards including overloaded circuits, faulty wiring, and misuse of electrical appliances [36]. For instance, placing electrical cords beneath carpets can lead to overheating and increase the risk of fires [16]

According to an article published by Electrician Courses 4U in the United Kingdom, it is evident that potential hazards and accidents associated with electricity can have severe consequences, resulting in harm to both humans and property. Thus, understanding the significance of electrical safety and taking preventive measures is essential to safeguard ourselves and our loved ones from such dangers.

The concept of electrical hazard is explained as encompassing both potential and actual threats that pose hazards to the physical and operational safety of individuals, equipment, machinery, and the surrounding environment [38]. Hazards can be observed as factors that can be recognized as indicators of potential sources of hazards, such as tangled wiring, electrical devices that are not switched off, installations that lack protection and uncovered convenience outlets, overloaded socket outlets, and various other examples.

Negligence can also contribute to electrical accidents, highlighting the importance of awareness and preventive measures [36]. Global statistics reveal a significant number of electrical injuries annually, with a notable portion occurring in households [16] These incidents can result in fatalities, underscoring the need for increased safety awareness [16].

Preventive measures such as proper wiring, avoiding overloaded circuits, and using electrical appliances responsibly are crucial for reducing electrical hazards [27]. Understanding the potential dangers of electricity and implementing safety measures are key to mitigating risks [28].

In the context of Grade 12 students, who are transitioning to more independent living arrangements and potentially using

electrical appliances without adult supervision, awareness of electrical hazards is particularly crucial [5]. Teaching school students about electrical safety through training models can have a significant impact on their ability to handle electricity by increasing knowledge about hazards and ways to prevent accidents [8]. These programs not only increase awareness but also equip students with practical knowledge and skills to handle electrical equipment safely.

In a study, it was found that students who attended seminars on electrical safety demonstrated improved understanding of electrical hazards and were more likely to adopt safe practices [8]. Similarly, educational interventions led to a decrease in electrical accidents among students [10].

Therefore, implementing seminars and educational programs focused on electrical safety is essential for Grade 12 students, as it empowers them to make informed decisions and reduces the risk of electrical accidents.

Electrical Safety

The safety of individuals is a topic of concern for everyone. Safety is a fundamental component of existence, implying that it should be ingrained and instinctive, requiring no conscious deliberation, much like breathing. Undoubtedly, breathing occurs instinctively from the beginning, but safety only gets ingrained in our behavior as we progressively integrate the knowledge acquired from our parents, instructors, literature, and personal experimentation [39]. Electrical safety involves identifying potential dangers of using electric current and implementing preventive measures to prevent accidents or fatalities. Electrical safety, as defined by the Cambridge Dictionary, pertains to a condition or location characterized by the absence of hazards or potential harm associated with electrical systems. Technology has advanced rapidly in the last 20 years, and individuals are increasingly exposed to it. Experts from Electrical Courses 4U warn of hazards with luxury items like phones, appliances, and laptops. A significant majority of individuals, approximately 79%, engage in risky behavior involving electricity, leading to a substantial number of injuries. Specifically, daily, approximately 1,000 individuals sustain injuries as a result of electrical accidents. Electrical safety measures, such as proper grounding, insulation, and equipment maintenance, are critical for preventing accidents and protecting individuals from electrical hazards [28]. Thus, individuals must understand electrical safety.

According to an article published by Electrician Courses 4U in the United Kingdom, it is evident that potential hazards and accidents associated with electricity can have severe consequences, resulting in harm to both humans and property. Thus, understanding the significance of electrical safety and taking preventive measures is essential to safeguard ourselves and our loved ones from any potential harm or danger from using electrical power.

Based on an article published by Electrician Course 4U in the United Kingdom, it has been observed that children and young adults presently possess an average of ten electronic devices within their personal spaces. This statistic represents a notable 25% increase compared to the number of gadgets their parents possessed during their childhood. The increase in electrical items in their rooms puts their lives at risk. Over 53% of adolescents leave their devices charging on their bed. Charging devices on flammable beds can cause electrical house fires due to overheating and potential battery explosions. Two in five people charge phones under a pillow while sleeping. This is dangerous because flammable objects surround the device without a way to release heat, potentially causing overheating and combustion.

Moreover, there has been a constant and upward trajectory in the proportion of individuals who have achieved access to electricity in recent decades. Ensuring the prioritization of electrical safety within any workplace is of utmost importance [19]. Moreover, it is worth noting that electrical dangers often exhibit specific characteristics compared to other forms of occupational hazards. Individuals lacking substantial familiarity with electrical hazards must acquire a fundamental understanding of electrical safety through training or awareness programs to effectively mitigate the risk of harm. Although the significance of workplace safety cannot be understated, it is imperative to use a distinct approach when addressing electrical safety to safeguard the well-being of all individuals within the facility [35].

According to an article, although electrical equipment is typically equipped with built-in safety measures, disregarding fundamental safety precautions and engaging in irresponsible behavior can override these safeguards, leading to severe electrical accidents [40]. Improper utilization of any element within an electrical system might potentially give rise to hazardous conditions, hence placing workers at risk of sustaining significant harm, including but not limited to electric shock injuries, burns, and fatality. Moreover, these devices can present a fire risk in commercial and residential settings, leading to irreparable harm. The situation does not need to be this such. The implementation of preventative measures, consistent maintenance practices, and ongoing vigilance can achieve the prevention of electrical accidents in the workplace.

Hazard identification is widely recognized as a critical component of occupational safety. According to the Occupational Safety and Health Administration (OSHA), a primary contributing factor to workplace injuries, illnesses, and accidents is the lack of identification or acknowledgment of existing or foreseeable dangers. This observation was made during the National Safety Council's National Safety Month in 2019.

Gender Differences in Electrical Safety

Numerous studies have shown that there are gender differences in the perceived risk of electrical hazards and the adoption of safety measures. For instance, a study found that males were more likely to engage in risky behaviors related to electrical hazards compared to females [41]. Similarly, it was discovered that females were more likely to report feeling uncomfortable when working near electrical equipment compared to males [41]. These findings suggest that gender may play a significant role in shaping awareness levels of electrical hazards and safety measures among students. [42] found that male students had higher awareness levels than female students regarding electrical hazards and safety measures. The study titled "Gender Differences in Electrical Safety Awareness: A Comparative Study" reveals a significant gap in awareness levels between males and females regarding electrical safety measures. It notes that males typically demonstrate greater confidence and knowledge in this area compared to females. Additionally, another research indicates that societal expectations and gender roles significantly influence individuals' perceptions and behaviors concerning electrical safety, contributing to these awareness disparities [46].

Acknowledging diversity and encompassing gender differences is vital for safeguarding the well-being and welfare of male and female employees. Although considerable advancement has been made in this domain, the International Labour Organization (ILO) asserts that further efforts are feasible and necessary [18]. This methodology recognizes and highlights the differences between males and females, aiming to identify occupational safety and health (OSH) hazards and implement efficient remedies. A gender-sensitive approach acknowledges that due to variations in occupational roles, societal expectations, and responsibilities, individuals of different genders may encounter distinct physical and psychological hazards in the workplace, necessitating diverse control and safety measures. This method also helps us understand how the division of labor between genders, biological differences, job trends, social expectations, and societal structures all create specific occupational hazards for different genders. In order to ensure the effectiveness of occupational safety and health (OSH) regulations and prevention initiatives for individuals of all genders, it is imperative to include the dimension of gender and develop policies grounded in precise information regarding the relationship between health and gender roles.

Academic Track- Based including the Technical-Vocational-Livelihood track

The track of a student can also impact their awareness levels of electrical hazards and safety measures. A study found that students in vocational programs were more likely to demonstrate knowledge and understanding of electrical safety procedures compared to those in academic programs [44]. This may be due to the fact that vocational programs often provide more practical training and hands-on experience with electrical equipment. Additionally, it was discovered that students in technical programs were more likely to report using safety measures such as wearing personal protective equipment (PPE) when working with electrical equipment [45]. These findings suggest that different strands under academic and technical track of a student may also play a significant role in shaping their awareness levels of electrical hazards and safety measures. Furthermore, results showed that technical or vocational track students have a more profound understanding of electrical risks due to specialized coursework, contrasting with lower awareness levels in non-technical tracks [22]. Similarly, it was noted that there is a higher safety consciousness among specialized technical track students compared to general academic track students [20].

The is stressed out on the necessity of comprehensive electrical safety education in technical programs, advocating for a blend of theory and practical training to instill a safety culture among future professionals [37]. Another study emphasizes the importance of universal electrical safety education across all academic backgrounds, advocating for standardized safety protocols and educational programs to reduce the risk of electrical accidents in various settings [24].

Factors Influencing Student's Understanding of Electrical Hazards and Safety Measures

According to a research entitled "Impact of Early Exposure to Electrical Safety Education on Grade 12 Students' Understanding. Safety Education Review" early exposure to electrical safety education positively impacts students' understanding and adherence to safety measures [24]. Students who have received previous education on electrical safety display greater understanding and practice safer behaviors [8]. This is in line with the overall significance of raising awareness about electrical safety among school students, highlighting the importance of beginning to teach them about electrical safety and energy conservation at a young age [8].

Moreover, a research under "Impact of Interactive Learning Tools on Grade 12 Students' Comprehension of Electrical Safety Concepts" indicates that students who can utilize interactive learning tools such as simulations and practical demonstrations exhibit improved comprehension and retention of electrical safety concepts [20]. In a similar study, having access to comprehensive educational materials and online resources greatly aids students in effectively learning about electrical hazards and safety measures [5].

Effectiveness of Electrical Safety Educational Programs

A study entitled "Impact of Structured Electrical Safety Programs on Students' Awareness and Safety Practices"

focused on the impact of electrical safety education in educational institutions [6]. They found that students who participated in structured electrical safety programs demonstrated a higher level of awareness and were more likely to adopt safe practices when dealing with electrical equipment and systems. This highlights the importance of integrating practical training and theoretical knowledge in educational curricula to enhance safety outcomes.

Moreover, a study conducted a comparative analysis of different approaches to electrical safety education, highlighting the effectiveness of interactive and hands-on training methods compared to traditional classroom lectures [9]. They observed that interactive sessions, such as simulations and practical demonstrations, not only enhanced understanding but also improved retention of safety concepts among participants.

Furthermore, a study focused on the long-term impact of electrical safety education, following up with participants of safety programs over several months and finding that sustained education and reinforcement led to a lasting change in behavior and a reduction in incidents related to electrical hazards [17].

Electrical Safety Awareness of Senior High School Students

Several studies have indicated that students frequently lack adequate preparation to address electrical hazards and safety measures [42]. Moreover, students were found most aware of the basic safety measures such as turning off unused appliances, not overloading sockets, and wearing protective gear [42]. In fact, according to a research, it indicates that students in Benin City have a generally good understanding of electrical safety. This implies that the students know electrical safety at home and in the lab. For example, in their reply to the second question, "Do you read the manufacturer's operating instructions before utilizing any electrical appliance?" A higher number of pupils (87.75%) voted 'YES' than those who responded 'NO' (12.25%). Only a few learners (3.75%) answered "YES" to the question "Do you touch electrical devices with wet hands?" contrary to the high number of students (96.25%) who answered "NO" to the identical question. This shows that students usually have a good level of understanding of electricity safety [42]

Students must know the need for preservation and safety when using electricity. The surveys aimed to assess students' knowledge of energy-conserving methods for consumer appliances, inspiration to support organizational efforts to decrease energy use, and awareness of electric shocks and catastrophes [43].

Reports of adolescents mishandling electricity

Majority of students lacked awareness about electrical hazards and safety measures [38]. According to Indiana Electric Cooperatives, identifying electrical hazards raises awareness of hazards and the harm electricity can cause. Teens do not see the morning rush before school as life-threatening. Using hair dryers, straighteners, or curling irons on a wet bathroom floor; checking text messages on a plugged-in cell phone while wet after a shower; inserting a kitchen knife into a plugged-in toaster to remove a stuck bagel or English muffin; leaving electrical appliances like straighteners or irons unattended and switched on. Doing these things risks electric shock, fire, or death by electrocution. Electrical products and gadgets possess inherent hazards if not handled cautiously [35]. All it takes is one careless mistake.

Numerous studies and investigations have shed light on the occurrence of headlines emphasizing adolescent electrical accidents. This alarming trend has sparked significant interest in public safety, prompting researchers to dive deeper into the underlying reasons and potential preventive strategies. The amount of publications on this subject emphasizes the critical need for enhanced awareness and focused actions to reduce the dangers that young people experience from electrical hazards. A tragic occurrence involving a 16-year-old juvenile from Uttar Pradesh, according to a recent Times of India investigation, has shone a light on the potential dangers linked with the use of high-end smartphones. The young person died unexpectedly as a result of an electric shock experienced while charging their smartphone, which was linked to a power source. This terrible incident is a stark reminder of the significance of understanding the potential hazards and dangers of using electronic gadgets plugged into an electrical source. The ease of always having a device attached to a power source can expose users to electrical hazards, as was the situation with the adolescent.

Moreover, another report according to The Sun, Khorn Srey Pov, a 17-year-old girl from Cambodia, was discovered deceased on her phone after bathing at her residence. The fatality has incited an online discourse over the security of mobile phone chargers. Netizens argue that public awareness initiatives should focus on educating people about electricity management, as Tahir (2022) stated. In addition, there is another story from Mirror U.K. An adolescent died as a result of a substantial electric shock she received after sleeping off on her charging mobile phone after taking a shower. Before this event, the adolescent, who was 17 years old, had taken a shower and connected her phone to a charger, activating its flashlight feature [6]

Also, Sun Star revealed that on October 26, 2022, an 18-year-old boy died from being electrocuted while trying to touch a pole that was leaning against a house in Barangay Agus, Lapu-Lapu City. The victim reportedly tried to touch the post without realizing that there was an active electrical wire nearby, which caused him to be electrocuted. Nagiel Bañacia,

head of the City Disaster Risk Reduction and Management Office, told Sun Star Cebu that another woman was in a severe condition after being shocked while trying to help the man at 12:55 p.m. The victim got an electric shock because they were not aware that the wire was live. So, it is imperative to determine how much adolescents know about electricity hazards and how to stay safe around them. The direct touch with live parts is one of the electrical hazards in this case. In this case, two electrical safety measures that can be used are watching out for power lines and never touching or climbing a utility pole. An electric current can flow through their body when exposed to an electrical voltage. This can cause electrical shocks and burns. As a result, severe hurt or death may happen. On the other hand, the woman involved in this accident should have helped the boy by calling for help [14]

Research Gap

The study addresses a significant gap in current literature, which tends to focus on individuals employed in electrical fields rather than senior high school students. There is a lack of comprehensive research specifically targeting Grade 12 students regarding awareness levels of electrical hazards and safety measures. Moreover, there is also a lack of research that specifically focuses on the implications of these differences for community and literacy development. This study aims to fill this crucial gap by providing in-depth insights into the electrical safety awareness of Grade 12 students at Letran-Bataan. It seeks to establish baseline data that can contribute to community and literacy development initiatives at the Colegio. Additionally, the research aims to investigate potential statistically significant differences in awareness levels based on gender and academic and technical track, further enhancing the understanding of differences in safety education among students.

Conceptual Framework

The researchers constructed an Input-Process-Output-Outcome (IPOO) model which serves as a guiding framework that enhances the study's analytical rigor, problem-solving capabilities, and strategic planning for implementing effective safety education measures and improving community safety awareness among Grade 12 students.

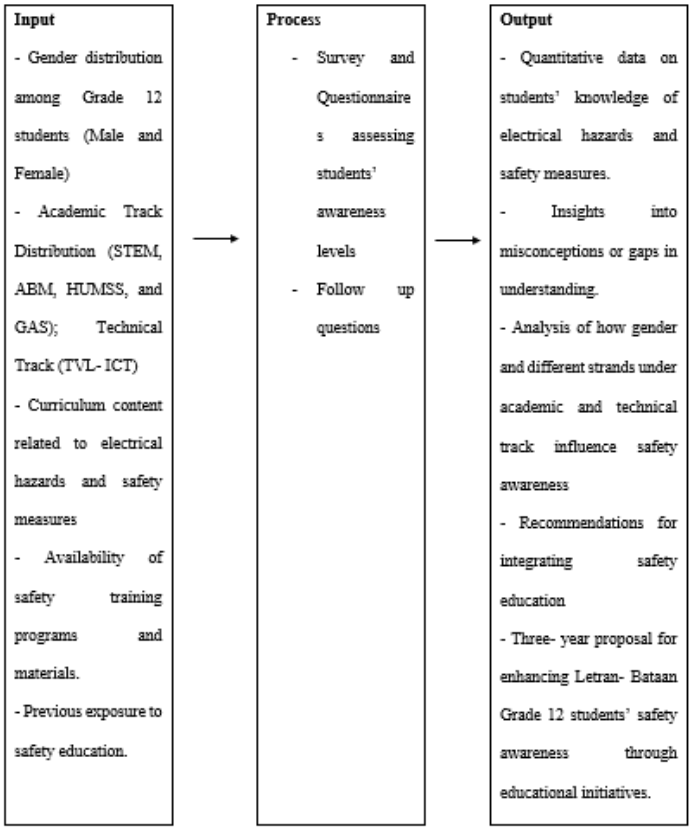


Figure 1: Conceptual Framework (IPOO)

Figure 1 presents an Input-Process-Output model showcasing the key components relevant to the research: inputs (demographics, educational environment, student background), processes (data collection), and expected outputs (awareness levels, community impact, literacy development). This conceptual framework also outlines the anticipated outcome, a three-year proposal titled "Cultivating Safety: A Three-Year Plan for Enhanced Electrical Safety Education at Colegio de San Juan de Letran-Bataan, Based on Grade 12 Students' Hazard Awareness and Safety Measures Study." Thus, this IPOO framework serves as a structured guide for organizing the research methodology and guiding result evaluation.

Hypotheses

In order to guide the study, the researchers formulated the following null hypotheses. These hypotheses will be tested with a significance level of $P < 0.05$. If p(sig value) is less than 0.05, there is a significant difference.

Hypothesis for Gender

Null Hypothesis (Ho): There is no significant difference between the mean responses of male and female students regarding their perception of the level of electrical hazards and safety measures.

Alternative Hypothesis (Ha): There is a significant difference in the average responses between male and female student users regarding their perceptions of the amount of electrical hazards and safety measures.

Hypothesis for Level of Awareness on Electrical Hazards and Safety Measures when grouped according to Academic and Technical Track

Null Hypothesis (Ho): There is no significant differences in the level of awareness and understanding of electrical hazards and safety measures among grade 12 students across different strands under academic and technical tracks.

Alternative Hypothesis (Ha): There is significant differences in the level of awareness and understanding of electrical hazards and safety measures among grade 12 students across different strands under academic and technical tracks.

METHODOLOGY

The methodology for this study involved assessing the level of awareness of electrical hazards and electrical safety measures among male and female Grade 12 students of Letran-Bataan. The data collection methods included the use of questionnaires administered to the target population.

Research Design

The research used a quantitative research design that utilized a descriptive study to assess the level of awareness about electrical hazards and safety measures for the 12th grade students of Letran-Bataan.

The research adopted the mixed- mode survey that involved both the online survey and paper and pen survey. Purposive sampling method is utilized to select participants based on specific criteria relevant to the research objectives, further enhancing the study's validity and relevance.

The combination of the approaches enables a comprehensive examination of students' awareness and safety practices related to electrical hazards. By systematically analyzing the collected data, this study aims to provide valuable insights while ensuring methodological coherence and reliability in the research results.

Research Locale

This research was conducted in the 12th grade of Colegio de San Juan de Letran- Bataan. The study population primarily consists of students hailing from the proximate areas of Bataan.

Bataan is a province in Central Luzon, Luzon Island. The region is a peninsula surrounded by Manila Bay and the West Philippine Sea. This area was the last stronghold of American forces in the Philippines during World War II. Bataan's household population is 99.6%. Bataan Province's population on May 1, 2020, was 853,373. The household population was 849,575 individuals.

Research Instruments

The study population consists of 120 grade 12 students, with a gender distribution of 56 males and 64 females. The present study employed the Raosoft sample calculator to survey a sample of 92 grade 12 students. The sample will be evenly divided, consisting of 46 male and 46 female students.

The primary data collection instrument is a structured questionnaire The questionnaire includes Likert's Scale items and at the latter part is an open- ended questions to assess various aspects of electrical hazard awareness and safety measures. These follow-up questions help enrich the study and better understand the factors that influence students' knowledge and views about electrical safety. Refer to Appendix B for the questionnaire utilized in this research.

For the Likert Scale part, the researchers made alterations to two sets of questionnaires: one focused on the Level of Awareness regarding Electrical Safety Measures, while the

other addressed the Level of Awareness concerning Electrical Hazards. The study utilized a questionnaire from the International Journal of Engineering Research and Technology, specifically from a research article titled "An Assessment of the Electrical Safety Awareness of Senior Secondary School Students," to measure the level of awareness of electrical safety measures. This paper asserts that the questionnaire is the established and extensively utilized research instrument for addressing this subject.

In the second portion, the researchers altered the previously validated questionnaire on awareness of electrical hazards, which was already validated by the Federal University of Technology Minna. Moreover, the methodology for structuring open ended questions on awareness of electrical hazards and safety measures involved a systematic approach. Key themes such as education effectiveness, accessibility of safety tools, student perspectives, safety habits, personal experiences, and communication channels were identified. Structured questions were then formulated to address each theme clearly and concisely, avoiding ambiguity and using straightforward language. The questions were arranged logically to facilitate a smooth flow of responses and were primarily open-ended to encourage detailed insights from participants. Before finalization, the questions underwent rigorous review and validation by Engr. Sophia Ysabelle N. Malig, REE, Engr. Yoji Manaloto, REE, and Assistant Professor Franz Jude S. Abelgas, M.A.

A pilot test was also conducted to refine the questions based on feedback, ensuring that they elicited valuable information from respondents while aligning with the research objectives. This structured methodology ensured that the questions effectively captured insights on electrical safety awareness, contributing to the rigor and quality of the research study

Respondents of the Study

The study will include grade 12 students from Letran-Bataan who reside in Bataan. According to Commission on Higher Education, individuals falling within the age bracket of 16 to 18 years are presently registered in the educational levels commonly referred to as Grades 11 and 12, which are part of the Senior High School program. The present study will encompass the complete population of grade 12 students from Letran-Bataan. This study utilized purposive sampling to precisely select and include only the grade 12 students from Letran-Bataan as the target population for the study.

Pilot Testing

Initial evaluation of the questionnaire was carried out with a limited sample of Grade 12 students from Bonifacio Camacho National High School (SHS) prior to the primary data gathering phase. The purpose of the pilot test is to identify any ambiguities or difficulties in understanding the questionnaire items using Cronbach's alpha. As well as to assess the clarity of questions and format.

Reliability testing, particularly through measures such as Cronbach's alpha, holds a significant importance in ensuring the reliability and validity of measurement tools utilized in research. According to OARC Stats, Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability.

This test contributes to the overall quality and credibility of research findings (Tavakol, 2011).

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Figure 2: Cronbach's alpha and Internal Consistency

a. Cronbach's Alpha Test for Section 1: Awareness of Electrical Safety Measures

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.716	12

b. Cronbach's Alpha Test for Section 2: Awareness of Electrical Hazards

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.745	12

Based on the feedback and results from the pilot test, using Cronbach's Alpha, the results indicates an acceptable reliability value for both Electrical Hazards and Safety Measures questionnaires. With a level 0.716 for Section 1: Awareness of Electrical Safety Measures and 0.745 for Section 2: Awareness of Electrical Hazards making the questionnaires reliable.

Data Gathering Procedure

The questionnaire was disseminated to the Grade 12 students during the data collection phase. The data collection instrument was an online form as well as paper and pen questionnaire. The students' Science Teacher of the Grade 12 participants administered the instrument. The Science Teacher of the Grade 12 students supervised the administration process and clarified any questions raised by the participants. Completed questionnaires were collected and checked for completeness before data entry and analysis. Hence, quantitative data collected from both online and paper surveys are compiled and entered statistical software for analysis.

Data Analysis

The collected quantitative data from the questionnaires was subjected to data analysis employing descriptive statistics. The analysis involved the application of both parametric and non- parametric test for Level of Awareness for Electrical Hazards and Safety Measures to determine whether there is a statistically significant difference in how the grade 12 respondents were divided into two categories by gender, and the Kruskal- Wallis H test to indicate whether any differences existed across the different strands under academic and technical track. Moreover, after executing Kruskal- Wallis H test, in this study, a post-hoc test is also done to identify exactly which groups differ from each other. Furthermore, a descriptive statistic was used to determine the level of awareness of the Grade 12 students, in general. The role of the analytical process was to provide valuable information regarding the respondents' understanding and knowledge of electrical hazards and safety measures.

Ethical Considerations

The study rigorously adheres to ethical considerations, such as getting informed consent, guaranteeing participant confidentiality, and following ethical norms for research involving human people.

Overall, this research design provides a systematic and structured approach to investigating the level of awareness on electrical hazards and safety measures among Grade 12 students, considering both quantitative data analysis and ethical considerations.

RESULTS AND DISCUSSION

Normality Test

Normality test was used to determine the normal distribution of the data. Both sets of questions for Grade 12 students was tested for normality. The p-value is abbreviated as Sig. on the table. If $p>0.05$, the data is normally distributed. If $p<0.05$, the data is non-normal. If the data is normally distributed, parametric test will be used (mean, standard deviation, t-test, One-Way Anova, etc.). If the data is not normally distributed, non-parametric test will be used (median, interquartile range, Mann-Whitney U test, Kruskal-Wallis test, etc.).

Table 1: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ESMQ1	.336	92	<.001	.751	92	<.001
ESMQ2	.212	92	<.001	.865	92	<.001
ESMQ3	.308	92	<.001	.725	92	<.001
ESMQ4	.277	92	<.001	.829	92	<.001
ESMQ5	.259	92	<.001	.825	92	<.001
ESMQ6	.260	92	<.001	.845	92	<.001
ESMQ7	.270	92	<.001	.839	92	<.001
ESMQ8	.232	92	<.001	.870	92	<.001
ESMQ9	.255	92	<.001	.855	92	<.001
ESMQ10	.222	92	<.001	.870	92	<.001
ESMQ11	.279	92	<.001	.787	92	<.001
ESMQ12	.264	92	<.001	.781	92	<.001
EHQ1	.260	92	<.001	.834	92	<.001
EHQ2	.256	92	<.001	.850	92	<.001
EHQ3	.239	92	<.001	.847	92	<.001
EHQ4	.272	92	<.001	.840	92	<.001
EHQ5	.339	92	<.001	.733	92	<.001
EHQ6	.251	92	<.001	.821	92	<.001
EHQ7	.278	92	<.001	.815	92	<.001
EHQ8	.251	92	<.001	.802	92	<.001
EHQ9	.266	92	<.001	.765	92	<.001
EHQ10	.266	92	<.001	.834	92	<.001
EHQ11	.297	92	<.001	.760	92	<.001
EHQ12	.249	92	<.001	.871	92	<.001

a. Lilliefors Significance Correction

Based on Table 1, the Kolmogorov- Smirnov and Shapiro-Wilk test shows that majority of the data gathered deviates from a non- normal distribution ($p<0.001$). As a result, non-parametric tests (such as median, interquartile range, Mann-Whitney U test and Kruskal-Wallis test) would be more appropriate for analyzing this data, as they are designed to handle non-normally distributed data.

Descriptive Statistics- Grade 12 students

The researchers used descriptive statistics in assessing the overall level awareness of Grade 12 students. The interpretation range used for the 4- point Likert Scale is as follows:

1-Strongly Disagree (1.00- 1.75)

2-Disagree (1.76- 2.50)

3-Agree (2.51- 3.25)

4-Strongly Agree (3.26- 4.00)

For the association of Level of Agreement to Level of Awareness: Based on how the questions on each item was formulated, it indicates that if the respondents agree on the statement stated on each item, the more they have awareness on the electrical safety. Thus, as the level of agreement of respondents is higher, the higher is the level of awareness.

a. Electrical Safety Measures

Table 2: Descriptive Statistics for ESM

Questions	Mean	Median	Mode	IQR	Percentiles		
					25	50	75
ESMQ1	3.185	3.000	3.0	1.0	3.000	3.000	4.000
ESMQ2	2.8370	3.0000	3.00	2.00	2.0000	3.0000	4.0000
ESMQ3	3.2935	3.0000	3.00	1.00	3.0000	3.0000	4.0000
ESMQ4	3.0326	3.0000	3.00	1.00	3.0000	3.0000	4.0000
ESMQ5	3.0435	3.0000	3.00	1.00	3.0000	3.0000	4.0000
ESMQ6	2.9783	3.0000	3.00	1.75	2.2500	3.0000	4.0000
ESMQ7	2.5870	3.0000	3.00	1.00	2.0000	3.0000	3.0000
ESMQ8	2.6630	3.0000	3.00	1.00	2.0000	3.0000	3.0000
ESMQ9	2.3370	2.0000	2.00	1.00	2.0000	2.0000	3.0000
ESMQ10	2.791	3.000	3.0	2.0	2.000	3.000	4.000
ESMQ11	3.1848	3.0000	3.00	1.00	3.0000	3.0000	4.0000
ESMQ12	3.2391	3.0000	3.00	1.00	3.0000	3.0000	4.0000
ESMOverall	2.9309	3.0000	3.08	0.4167	2.7500	3.0000	3.1667

The result shows that the overall level of awareness of Grade 12 students has a median = 3.00 that falls under the range of "Agree" from the 4-point Likert Interpretation Scale. This is then supported by the results under mode which has an overall result of 3.08 that also falls under the "Agree". Moreover, the overall IQR of 0.4167 indicates that the middle 50% of Grade 12 students have Level of Awareness on Electrical Safety Measures ranging from 2.750 to 3.167 which fall under Agree. This implies that majority of Grade 12 students are aware about safety measures.

However, question no. 9 which states "I do not load an adapter or wall socket with many appliances" shows the lowest median = 2.00 with an interquartile range 2 to 3 which varies from disagree to agree. This may indicate that most of the Grade 12 students disagree on whether they are not loading an adapter or wall socket with many appliances.

b.Electrical Hazards

Table 3 shows the Level of Awareness among Grade 12 Students at Letran Bataan Regarding Electrical Hazards.

*Table 3: **Descriptive Statistics for EH***

Questions	Mean	Median	Mode	IQR	Percentiles		
					25	50	75
EHQ1	3.0435	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ2	2.8804	3.0000	3.00	1.00	2.0000	3.0000	3.0000
EHQ3	2.9783	3.0000	3.00	2.00	2.0000	3.0000	4.0000
EHQ4	2.9783	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ5	3.3152	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ6	3.0978	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ7	3.0870	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ8	3.2174	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ9	3.2500	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ10	3.0326	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ11	3.2935	3.0000	3.00	1.00	3.0000	3.0000	4.0000
EHQ12	2.3587	2.0000	2.00	1.00	2.0000	2.0000	3.0000
EHOverall	3.0444	3.0417	3.00	0.3958	2.9167	3.0417	3.3125

The result shows that the overall level of awareness of Grade 12 students has a median = 3.04 that falls under the range of "Agree" from the 4-point Likert Interpretation Scale. This is then supported by the results under mode which has an overall result of 3.00 that also falls under the "Agree". Moreover, the IQR of 0.3958 indicates that the middle 50% of Grade 12 students have Level of Awareness on Electrical Hazards ranging from 2.9167 to 3.3125 which then varies from Agree to Strongly Agree. This implies that majority of Grade 12 students have high level of awareness about electrical hazards which varies from aware to highly aware.

However, question no. 12 which states "I can use a lower wattage LED bulb in a fixture with a higher wattage rating" shows the lowest median = 2.00 with an interquartile range 2 to 3. This may indicate that most of the Grade 12 students disagree or agree on whether they can use a lower wattage LED bulb in a fixture with a higher wattage rating.

Non- Parametric and Parametric Test for Gender- Based

The researchers employed both parametric and non-parametric tests in this study in answering the second research question- What is the level of awareness among Grade 12 students at Letran- Bataan regarding electrical hazards and safety measures when grouped according to gender?

In a study, Cuesta et al. (2022) emphasizes the significance of utilizing parametric and non-parametric tests for examining gender differences in safety awareness within hazardous settings. This method guarantees a comprehensive assessment of gender differences in awareness of electrical hazards and safety measures, enhancing the credibility of research findings.

Firstly, the researchers utilized an Independent Sample t-test (Unpaired t-test) as a parametric test to compare the mean awareness levels between males and females. This test assumed normality and homogeneity of variance in the data, providing insights into potential differences in mean awareness scores between the genders.

Additionally, the researchers conducted a Mann-Whitney U test as a non-parametric alternative to further examine the awareness levels based on gender. This test did not assume a normal distribution and was robust to outliers, making it suitable for analyzing data that may not meet parametric assumptions. By employing both tests, the researchers aimed to assess robustness, account for data characteristics, and increase confidence in results (Field, 2013). Comparing results across these test types helps validate findings under different assumptions and data distributions.

a)Non- Parametric Test (Mann- Whitney U Test)

Mann-Whitney U test was used to determine if there is a statistically significant difference between the level of awareness of Grade 12 students of Letran-Bataan regarding Electrical Safety Measures and Electrical Hazards when group according to Gender. If the p-value (abbreviated as Sig.) > 0.05, the difference is not statistically significant, thus accepting the null hypothesis. If the p-value < 0.05, the difference is statistically significant, thus rejecting the null hypothesis.

*Table 4: **Ranks***

	Gender	N	Mean Rank	Sum of Ranks
ESMOverall	Female	46	37.88	1742.50
	Male	46	55.12	2535.50
	Total	92		
EHOverall	Female	46	41.61	1914.00
	Male	46	51.39	2364.00
	Total	92		

*Table 5: **Test Statistics**[a]*

	ESMOverallMean	EHOverallMean
Mann-Whitney U	661.500	833.000
Wilcoxon W	1742.500	1914.000
Z	-3.108	-1.764
Asymp. Sig. (2-tailed)	.002	.078

a. Grouping Variable: Gender

The test result shows that there is a statistical difference on the Level of Awareness on Electrical Safety Measures between Male and Female Grade 12 students (mean = 661.500, p = 0.002). In addition, Male Grade 12 students have a higher mean rank = 55.12 than Female Grade 12 students, mean rank

= 37.88. This implies that Male Grade 12 students have significantly higher level of awareness than Female Grade 12 students in terms of Electrical Safety Measures.

On the other hand, the test results shows that the difference on the Level of Awareness on Electrical Hazards between Male and Female Grade 12 students are not statistically significant (mean = 833.00, p = 0.078). This shows that Male and Female Grade 12 students of Letran Bataan have the same Level of Awareness about Electrical Hazards.

b)Parametric Test (Independent Sample t- test)

For Parametric test, Independent Sample t-test (Unpaired t-test) was used to determine if there is a statistically significant difference between the Level of Awareness of Grade 12 students of Letran-Bataan regarding Electrical Safety Measures and Electrical Hazards when group according to Gender. If the p-value (abbreviated as Sig.) > 0.05, the difference is not statistically significant, thus accepting the null hypothesis. If the p-value < 0.05, the difference is statistically significant, thus rejecting the null hypothesis.

Table 6: **T- test Group Statistics**

	Gender	N	Mean	Std. Deviation	Std. Error Mean
ESMOverall	FEMALE	46	2.8455	.31687	.04672
	MALE	46	3.0163	.39776	.05865
EHOverall	FEMALE	46	2.9746	.38804	.05721
	MALE	46	3.1141	.36992	.05454

Table 7 **Independent Samples Test**

			ESMOverallMean		EHOverallMean	
			Equal variances assumed	Equal variances not assumed	Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		2.481		.000	
	Sig.		.119		.984	
t-test for Equality of Means	t		-2.278	-2.278	-1.765	-1.765
	df		90	85.717	90	89.795
	Significance	One-Sided p	.013	.013	.041	.041
		Two-Sided p	.025	.025	.081	.081
	Mean Difference		-.17078	-.17078	-.13949	-.13949
	Std. Error Difference		.07498	.07498	.07905	.07905
	95% Confidence Interval of the Difference	Lower	-.31975	-.31985	-.29653	-.29664
		Upper	-.02182	-.02172	.01754	.01765

The result shows that there is a statistical difference on the Level of Awareness on Electrical Safety Measures between Male and Female Grade 12 students (t(90) = -2.278, p = 0.025). In addition, Male Grade 12 students have a higher mean = 3.02 than Female Grade 12 students, mean = 2.54. This implies that Male Grade 12 students have significantly higher level of awareness than Female Grade 12 students in terms of Electrical Safety Measures.

On the other hand, the test results shows that the difference on the Level of Awareness on Electrical Hazards between Male and Female Grade 12 students are not statistically significant (t(90) = -1.765, p = 0.081). This shows that Male and Female Grade 12 students of Letran Bataan have the same Level of Awareness about Electrical Hazards.

Kruskal Wallis Test

The Kruskal-Wallis identifies significant differences in awareness and understanding of electrical hazards across different strands under academic and technical tracks in the collected data (Finlay et al., 2009). Since the test is non-parametric, its assumption do not include a normal distribution of data. Given that the population size of each academic and technical track in the research stage was unequal, this test would be suitable rather than the one requiring equal or at least relatively similar populations (Pallant, 2016). Moreover, the researchers utilized purposive, and also had equal numbers of males and females. Therefore, it ensures that the test results are not skewed by sampling biases (Creswell, 2014). This strengthens the validity of the comparisons made across academic and technical track.

In this study, the Kruskal-Wallis test was employed due to its capability to address variations in sample sizes and its appropriateness for non-parametric analyses, establishing it as a dependable approach to identify noteworthy differences in awareness levels among various academic and technical tracks (Tabachnick et al., 2019). Kruskal-Wallis Test was used to determine the significant difference among the strands of Grade 12 students on their Level of Awareness regarding Electrical Safety Measures and Electrical Hazards.

Kruskal-Wallis Test was used rather than One-Way ANOVA test because the data deviates from a non-normal distribution. If the p-value > 0.05, the difference is not statistically significant, thus accepting the null hypothesis. If the p-value < 0.05, the difference is statistically significant, thus rejecting the null hypothesis. If the result shows a statistically significant difference, post-hoc analysis must be performed to identity which among the pair of groups have significant differences.

a) Nonparametric Test (Independent- Samples Kruskal-Wallis Test)

Table 8: Hypothesis Test Summary

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of ESMOverall is the same across categories of Strand.	Independent-Samples Kruskal-Wallis Test	<.001	**Reject the null hypothesis.**
2	The distribution of EHOverall is the same across categories of Strand.	Independent-Samples Kruskal-Wallis Test	.002	**Reject the null hypothesis.**

a. The significance level is .050.

b. Asymptotic significance is displayed.

b) Electrical Safety Measures across Strands

*Table 9: **Independent-Samples Kruskal-Wallis Test Summary***

Total N	92
Test Statistic	17.961[a]
Degree Of Freedom	3
Asymptotic Sig.(2-sided test)	<.001

a. The test statistic is adjusted for ties.

c) Electrical Hazards across Strands

*Table 10: **Independent-Samples Kruskal-Wallis Test Summary***

Total N	92
Test Statistic	14.381[a]
Degree Of Freedom	3
Asymptotic Sig. (2-sided test)	.002

a. The test statistic is adjusted for ties.

The test result shows that there is statistically significant difference on the Level of Awareness among the strands of Grade 12 students regarding Electrical Safety Measures ($H(3) = 17.961$, $p<0.001$) and Electrical Hazards ($H(3) = 14.381$, $p = 0.002$). This implies that there is a strong evidence to reject the null hypothesis which further indicates that the different strands under academic and technical track of Grade 12 students have statistically significant different level of awareness.

Post- Hoc Analysis

In this study, a post-hoc test is done to identify exactly which groups differ from each other. A post hoc analysis refers to statistical tests conducted after the initial analysis of data, often used to explore specific relationships or patterns that were not part of the original research hypothesis ("11.8: Post hoc tests," 2024). It's crucial in research papers because it helps uncover unexpected findings or relationships that can contribute significantly to the understanding of the research topic.

One common post-hoc test used after Kruskal-Wallis is the Dunn-Bonferroni Adjustment. The Dunn-Bonferroni Adjustment is a pairwise comparison test that adjusts the significance level to control for multiple comparisons. The adjusted significance level is calculated by dividing the original alpha level by the number of comparisons made.

If the adjusted significance level is greater than 0.05, it means that there is no evidence to reject the null hypothesis that there is no significant difference between the groups. In other words, none of the pairwise comparisons are statistically significant at the adjusted significance level.

If the Dunn-Bonferroni adjustment results in adjusted p-values that are less than the desired significance level, then the pairwise comparison is considered statistically significant. If the adjusted p-values are greater than the desired significance level, then there is insufficient evidence to reject the null hypothesis of no significant difference between the groups.

Post- Hoc Analysis for Electrical Safety Measures

Table 11: **Ranks**

	Strand	N	Mean Rank
Awareness of Electrical Safety Measures (Overall)	ABM	8	19.06
	HUMSS	11	29.95
	STEM	72	51.47
	TVL-ICT	1	90.00
	Total	92	
Awareness of Electrical Hazards (Overall)	ABM	8	17.69
	HUMSS	11	35.23
	STEM	72	51.08
	TVL-ICT	1	71.50
	Total	92	

Table 12: **Test Statistics**

	Awareness of Electrical Safety Measures (Overall)	Awareness of Electrical Hazards (Overall)
Kruskal-Wallis H	17.961	14.381
df	3	3
Asymp. Sig.	.000	.002

a. Kruskal Wallis Test

b. Grouping Variable: Strand

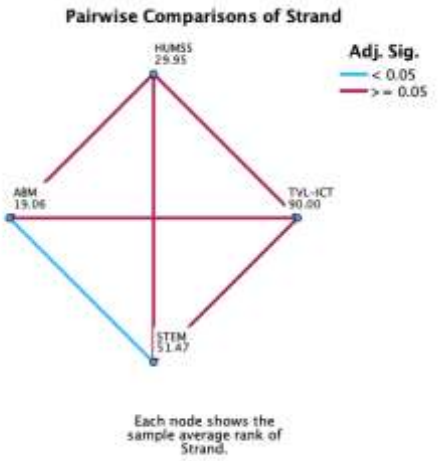
Table 12.1: Pairwise Comparisons of Strand

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
ABM-HUMSS	-10.892	12.359	-.881	.378	1.000
ABM-STEM	-32.410	9.912	-3.270	.001	.006
ABM-TVL-ICT	-70.937	28.211	-2.515	.012	.072
HUMSS-STEM	-21.518	8.610	-2.499	.012	.075
HUMSS-TVL-ICT	-60.045	27.780	-2.161	.031	.184
STEM-TVL-ICT	-38.528	26.782	-1.439	.150	.902

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .050.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.



Dunn-Bonferroni Adjustment post-hoc test was used to determine which among the pair of Grade 12 strand groups indicates a statistically significant different Level of Awareness in terms of Electrical Safety Measures. The test shows that among the 6 pairs of groups, the difference of the Level of Awareness between ABM and STEM are statistically significant, p = 0.001. Considering this, it shows that the STEM strand (mean rank = 51.47) have a higher mean rank than ABM strand (mean rank = 19.06). This could imply that Grade 12 students under the STEM strand have a statistically higher Level of Awareness regarding Electrical Safety Measures than students under ABM strand.

Furthermore, the adjusted p-value (adj. p = 0.006) suggest that the difference on the Level of Awareness between ABM and STEM strand group is statistically significant. This further supports that there was enough strong evidence to reject the null hypothesis of no significant difference between the pairwise comparison of ABM and STEM strand group at the adjusted level.

Post- Hoc Analysis for Electrical Hazards

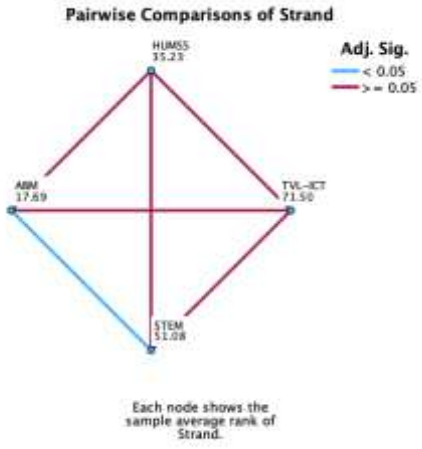
Table 13: Pairwise Comparisons of Strand

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
ABM-HUMSS	-17.540	12.358	-1.419	.156	.935
ABM-STEM	-33.389	9.912	-3.369	.001	.005
ABM-TVL-ICT	-53.812	28.209	-1.908	.056	.339
HUMSS-STEM	-15.849	8.610	-1.841	.066	.394
HUMSS-TVL-ICT	-36.273	27.779	-1.306	.192	1.000
STEM-TVL-ICT	-20.424	26.780	-.763	.446	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .050.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.



Dunn-Bonferroni Adjustment post-hoc test was used to determine which among the pair of Grade 12 strand groups indicates a statistically significant different Level of Awareness in terms of Electrical Hazards. The test shows that among the 6 pairs of groups, the difference of the Level of Awareness between ABM and STEM are statistically significant, p = 0.001. Considering this, it shows that the STEM strand (mean rank = 51.47) have a higher mean rank than ABM strand (mean rank = 19.06). This could imply that Grade

12 students under the STEM strand have a statistically higher Level of Awareness regarding Electrical Hazards than students under ABM strand.

Furthermore, the adjusted p-value (adj. p = 0.005) suggest that the difference on the Level of Awareness between ABM and STEM strand group is statistically significant. This further supports that there was enough strong evidence to reject the null hypothesis of no significant difference between the pairwise comparison of ABM and STEM strand group at the adjusted level.

Follow- up questions: Factors that may impact students

This section discusses follow-up questions included at the latter part of the survey form. Follow-up questions clarify initial answers, ensuring accuracy and validity (Tourangeau, 2000). It eliminates ambiguity, promotes comprehensive responses, and reduces biases, making the survey results more (Converse & Presser, 1986; Fowler, 2009).

Several valid major findings are obtained after analyzing additional question in the survey:

Awareness of Electrical Safety Measures	
Electrical Safety Education	Students believe that integrating electrical safety into the education curriculum and conducting seminars are effective in enhancing awareness. They recognize the importance of structured educational initiatives and practical learning experiences in deepening their knowledge. Interactive workshops, real-life demonstrations, and engaging visual aids are considered the most effective ways to increase knowledge about electrical safety.
Accessibility of Tools	Most of the survey participants mentioned that Letran does not offer any workshops on Electrical Safety Measures. Nevertheless, some STEM strand students reported that they were able to address safety protocols in their Physics class. However, students recognize the significance of safety training programs and materials in enhancing their understanding and engagement in electrical safety. They believe that ongoing education is essential for furthering their comprehension and fostering a culture of safety awareness and expertise.
Impact of Being a Student	Students find value in learning about electrical safety, improving daily awareness and cautious behavior. They desire more knowledge, showing a proactive approach towards enhancing understanding and being more conscious of safety.
Electrical Safety Practices	Most of the students demonstrated proactive safety habits such as regular inspections of electrical cords and plugs, avoiding overloading sockets, and ensuring proper plug practices on their homes.
Impact of Personal Experiences	Personal experiences, ranging from minor grounds to mishandling electrical equipment, significantly influenced students' safety approach. These experiences underscored the necessity of proper training, awareness, and maintenance in preventing accidents.
Effective Communication Methods	Based from the responses of the students, the most effective communication channels for students to receive electrical safety information includes seminars, digital platforms like websites and interactive sessions with experts.

The results shows that integrating electrical safety into education is a must. Students value structured initiatives and practical learning experiences, including workshops and visual aids. However, Letran lacks workshops on Electrical Safety Measures, highlighting a gap. Safety training programs are seen as crucial for enhancing understanding, and students demonstrate proactive safety habits.

Awareness of Electrical Hazards	
Student Electrical Awareness	Students noted science experiments, projects raised awareness of electrical hazards, stressing. Hands-on learning and targeted educational initiatives were emphasized as key in enhancing hazard awareness.
Identifying and Handling Electrical Hazards	Students identified and managed electrical hazards: exposed wires, sparking cords, overloaded sockets. Sense of responsibility evident.
Perspective on Hazards	Students' perspectives on electrical hazards are shaped by their personal encounters. Though some believe these hazards should be taken seriously, others downplay their importance based on personal experiences.
Letran's Electrical Hazard Impact	Students pointed out the importance of education in increasing hazard awareness, but noted that Letran does not offer any training, seminars and education on Electrical Hazards. Some students in the STEM and TVL program have discussed basic electrical hazards, but they agree with Grade 12 students on the importance of more thorough education on the topic. Effective safety guidelines and practice exercises were identified as elements that improve understanding of dangers.
Occupation's Impact on Awareness:	STEM and technical track students showed increased hazard awareness due to regular handling of electrical equipment, underlining the significance of tailored educational interventions and hands-on experiences.

Regarding electrical hazards, science projects and hands-on learning raise awareness. Students can identify and manage hazards but may vary in their seriousness. Letran needs more education on Electrical Hazards. STEM students show increased awareness, emphasizing the need for tailored education. Effective communication channels like seminars and digital platforms play a key role in promoting safety awareness among students.

Overall, the research employed a 4-point Likert Scale questionnaire and follow-up questions to evaluate students' awareness of electrical hazards and safety measures in academic and technical tracks. The results from the Kruskal-Wallis Test supported the hypothesis of a significant difference in awareness levels among these tracks. Follow-up questions further confirmed this difference in awareness levels, aligning with the results from the statistical test.

Moreover, students highlighted the need to integrate electrical safety into the curriculum and conduct specialized seminars or workshops. Follow-up questions provided deeper insights into students' perspectives, emphasizing the importance of tailored educational interventions based on academic fields. Continuous learning and practical experience were identified as crucial for enhancing students' understanding and expertise in electrical hazards and safety measures, with follow-up inquiries playing a key role in revealing detailed viewpoints in quantitative studies.

CONCLUSION

A sample of 92 students with an equal number of male and female students was drawn from Letran- Bataan. The instrument was a questionnaire containing a 4-point Likert Scale items. The data was collected and analyzed through different statistical analysis. Based on the result of this study, it can be concluded that while most students vary from aware to highly aware regarding electrical hazards and safety measures, significant variations exist across specific areas such as loading adapters or wall sockets, as well as whether they can use a lower wattage LED bulb in a fixture with a higher wattage rating.

Moreover, in terms of gender, male students exhibit significantly higher awareness levels than females regarding safety measures, emphasizing the need for targeted educational interventions. However, there is no significant difference in awareness levels regarding electrical hazards between male and female students.

The study also finds significant differences in awareness levels across academic tracks, with STEM students having a higher level of awareness compared to ABM students about both safety measures and hazards.

In conclusion, this study has successfully achieved its objectives by assessing the level of awareness of electrical hazards and safety measures among Grade 12 students at Letran-Bataan, highlighting gender and track differences. Overall, the study emphasizes the importance of integrating electrical safety education into the curriculum, providing practical training seminars, and conducting awareness campaigns to enhance safety awareness among students. Hence, refer to Appendix A for the three- year proposal entitled “Cultivating Safety: A Three-Year Plan for Enhanced Electrical Safety Education at Colegio de San Juan de Letran-Bataan, Based on Grade 12 Students’ Hazard Awareness and Safety Measures Study”.

RECOMMENDATION

Based on the study's findings, several key recommendations can be made to enhance safety education and promote community literacy development at Letran-Bataan:

1.The Letran-Bataan community can utilize the three-year proposal entitled "Cultivating Safety: A Three-Year Plan for Enhanced Electrical Safety Education at Colegio de San Juan de Letran-Bataan, Based on Grade 12 Students’ Hazard Awareness and Safety Measures Study" found on Appendix A to enhance and improve the quality of life within the community.

2.Alongside the computer and robotics literacy program, the Colegio can enrich its curriculum by including seminars, workshops, and hands-on programs focusing on electrical safety for all senior high school tracks. These supplementary educational activities will thoroughly address safety measures and hazards associated with basic to complex electrical systems, contributing to a comprehensive education in both technology and safety. This educational enhancement can be incorporated to the Colegio and Academic week conducted yearly by Letran.

3.Practical Training Seminars- The Colegio must organize workshops and practical sessions focusing on electrical safety practices, encouraging hands-on learning and skill development.

4.Awareness Campaigns- Launch awareness campaigns using digital platforms and seminars to reinforce safety messages and promote proactive safety habits among students. This can be integrated in the two events that is celebrated by the Colegio yearly, specifically Colegio Week and Academic Week.

5.Tailored Intervention- Conduct practical training seminars focusing on scenarios relevant to the strand. For example, for ABM students, conduct a practical training seminar such as office settings or business establishments, where electrical hazards may occur.

6.Institutional Policy Advocacy- Letran must strive to review and re- evaluate the institutional policies that prioritize electrical safety education and incorporate it as a critical component of overall literacy training.

7.Implement Gender-Specific Educational Interventions- To address the significant difference in awareness levels between male and female students about electrical safety measures, it is advisable to develop and execute educational interventions that are tailored to each gender. The interventions should focus on areas where female students demonstrate lower levels of awareness in comparison to their male peers.

8.Follow-up Studies- Since this is the first non- prototype research for the Engineering Department, the Colegio can use this study to conduct follow-up studies to assess the long-term effectiveness of safety education initiatives and evaluate the impact of gender-sensitive approaches on safety outcomes.

These recommendations aim to create a culture of safety awareness within the Colegio, contribute to individual student development, and enhance safety standards within the community. While specific to Letran-Bataan's Grade 12 students, these initiatives can serve as a model for broader educational frameworks and community development efforts.

REFERENCES

[1] Agresti, A., & Finlay, B. (2009). Statistical methods for the

social sciences. Pearson Education. Retrieved from https://www.scirp.org/reference/referencespapers?referenceid=3340962

[2] Administrator, M. E. P. (2019, April 11). The importance of electrical safety in all establishments. Retrieved from https://meijielectric.ph/importance-electrical-safety-establishments/

[3] A., & A. (2022, October 4). How to prevent electrical accidents in the workplace [Blog post]. AccidentClaimsAdvice.org.uk. Retrieved from https://www.accidentclaimsadvice.org.uk/how-to-prevent-electrical-accidents-in-the-workplace/

[4] EHS. (n.d.). Basic electrical safety. Retrieved from https://www.ehs.washington.edu/fire-life/basic-electrical-safety

[5] Brown, L., & Lopez, M. (2020). Access to comprehensive educational materials and electrical safety knowledge among Grade 12 students. Safety Education Review, 29(2), 112-125.

[6] Brown et al. (2019). Impact of structured electrical safety programs on students' awareness and safety practices [Research report]. ResearchGate. Retrieved from https://www.researchgate.net/publication/321905625_Assessment_of_Electrical_Safety_Beliefs_and_Practices_A_Case_Study

[7] Conover, W. J. (1999). Practical Nonparametric Statistics (3rd ed.). Wiley.

https://www.mdpi.com/2313-576X/8/3/59

[8] B. G. Mayanja, B. Rhodah, E. Namugeni, Y. Dhanalakshmi, T. T. P. Darshini and B. K. Reddy, "Training Model on Electrical Safety and Energy Conservation to Socially-Backward Region School Students," 2023 International Conference for Advancement in Technology (ICONAT), Goa, India, 2023, pp. 1-6, doi: 10.1109/ICONAT57137.2023.10080576. keywords: {Training;Wind;Technological innovation;Renewable energy sources;Terminology;Electrical safety;Water conservation;electricity;safety;energy conservation;hazards},

[9] Google.com, 2024. https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.atlantis-press.com/article/125983137.pdf&ved=2ahUKEwjpzZaguISGAxWRRmcHHWZMBykQFnoECB8QAQ&usg=AOvVaw3a7aammQXh8JkQQZYMpNkpQ (accessed May 11, 2024).

[10] Comparative analysis of training approaches in electrical safety education by Smith and Johnson (2020) [Research report]. International Journal of Research in Education and Science. Retrieved from https://www.ijres.org/papers/Volume-11/Issue-9/11093033.pdf

[11] Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches. SAGE Publications. Retrieved from https://www.ucg.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf

[12] Creative Safety Supply. (2020). Why electricity is important. Retrieved from https://www.creativesafetysupply.com/qa/electrical-safety/why-is-electrical-safety-important/

[13] eLCOSH: Electrical safety: Safety & health for electrical trades (Student manual). (n.d.). Retrieved from https://www.elcosh.org/document/1624/891/d000543/section5.html

[14] Electrical hazards. (2021, March 11). Retrieved from https://www.wsps.ca/resource-hub/articles/electrical-hazards

[15] Electrical safety. (2023, August 8). Electrical Safety Foundation. Retrieved from https://www.esfi.org/home-safety/electrical-safety/

[16] Electrical safety for children: How to prevent electric shocks. (2020, October 30). EC4U. Retrieved from https://electriciancourses4u.co.uk/useful-resources/childrens-electrical-safety/#:~:text=By%20teaching%20children%20about%20electrical,the%20situation%20were%20to%20arise.

[17] Garcia et al. (2021). Long-term impact of electrical safety education programs: A follow-up study. BMC Public Health. Retrieved from https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-16114-8

[18] Gender and occupational safety and health. (n.d.). International Labour Organization. Retrieved from https://www.ilo.org/safework/areasofwork/gender-and-occupational-safety-and-health/lang--en/index.htm

[19] Hannah Ritchie and Max Roser (2020) - "Energy". Our World in Data. Retrieved from https://ourworldindata.org/energy

[20] Hernandez and Martinez (2019). Assessing electrical safety awareness across academic tracks: A comparative study [Research report]. Retrieved from publisher's website: http://www.irphouse.com/

[21] Home safety. (2023, June 26). Electrical Safety Foundation. Retrieved from https://www.esfi.org/home-safety/

[22] Florencio, R., Caballero., Ruth, G., Cabahug. (2015). The K to 12 Senior High School Technical–Vocational Livelihood Track is Not at All Ready for Implementation. doi: 10.7719/IRJ.V5I1.348

[23] Johnson, L., et al. (2020). A Comparative Study of Electrical Safety Protocols in Educational Workshop Settings. Safety Science, 78, 45-57.

[24] Johnson, L., & Smith, J. (2019). Universal electrical safety education: Promoting safety across academic strandsInternational Journal of Research in Education and Science. Retrieved from https://www.ijres.org/papers/Volume-11/Issue-9/11093033.pdf

[25] Maikale, B. D., Abbo, M. A., Lawan, M. M., & Usman, H. I. (2019). The influence of awareness on electrical threats and protection measures among electricity users in Maiduguri Metropolis of Borno State, Nigeria.

[26] Martinez, E., & Garcia, R. (2018). Impact of interactive learning tools on Grade 12 students' comprehension of electrical safety concepts. Educational Technology Research, 15(4), 78-91.

[27] NFPA 70E definitions. (2020, April 30). Arc FlashTraining - NFPA 70E Training - Nationwide. Retrieved from https://www.arcflashpro.com/nfpa-70e-definitions/#:~:text=Electrical%20Hazard,electrical%20hazards%20for%20many%20years.

[28] Occupational Safety and Health Administration OSHA. (2020). Retrieved from https://www.osha.gov/news/newsreleases/infodate-y/2020

[29] Pallant, J. (2016). SPSS survival manual. McGraw-Hill Education. Retrieved from https://www.scirp.org/reference/referencespapers?referenceid=2050871

[30] Rozanski, A., & Cichowicz, R. (2020). Electrical safety education for adolescents: Addressing the risks and challenges.

[31] Safety at home. (n.d.). Retrieved from https://www.facs.nsw.gov.au/families/parenting/keeping-children-safe/around-the-house/chapters/at-home

[32] Safety. (2023, October 18). Cambridge Dictionary. Retrieved from https://dictionary.cambridge.org/us/dictionary/english/safety

[33] Schumacker, R. E., & Lomax, R. G. (2010). A beginner's guide to structural equation modeling (3rd ed.). Routledge. Retrieved from https://psycnet.apa.org/record/2010-14122-000

[34] Zemaitis, M. R. (2023, July 17). Electrical injuries. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK448087/

[35] CHRISTCHURCH ELECTRICIANS. (n.d.). 10 most dangerous home electrical hazards [Blog post]. Retrieved from https://jmwelectrical.co.nz/about-us/blog/10-most-dangerous-home-electrical-hazards/?fbclid=IwAR1jc1bjjKeTS2eT9b6IWcv2Lfmd7l7c0dlmZVph2j2p3K90Ah49lL3LMKQ

[36] J. Tarlengco, “7 Common Electrical Safety Hazards in the Workplace,” SafetyCulture, 2018. https://safetyculture.com/topics/electrical-hazards/

[37] Malizia, M. D., Pau, A. K., & Valenti, M. J. (2021). Integrating Electrical Safety Education into Technical Programs: A Comprehensive Approach.

[38] “Thesis-Final Edit | PDF | Sustainable Energy | Personal Protective Equipment,” Scribd. https://www.scribd.com/document/522174329/Thesis-Final-edit

[39] “TECHNOLOGY INTEGRATION: A RESEARCH-BASED PROFESSIONAL DEVELOPMENT PROGRAM.” Available: https://files.eric.ed.gov/fulltext/ED525563.pdf

[40] “How To Prevent Electrical Accidents In The Workplace - AccidentClaimsAdvice.org.uk,” Mar. 13, 2022. https://www.accidentclaimsadvice.org.uk/how-to-prevent-electrical-accidents-in-the-workplace/

[41] “Final Research SHS | PDF | Insulator (Electricity) | Burn,” Scribd. https://www.scribd.com/document/387582333/Final-Research-SHS

[42] O. Aigbodion, “An Assessment of the Electrical Safety Awareness of Senior Secondary School Students,” www.academia.edu, Available: https://www.academia.edu/11642244/An_Assessment_of_the_Electrical_Safety_Awareness_of_Senior_Secondary_School_Students

[43] M. Khan et al., “Energy Saving Awareness Among UTM Students.” Accessed: May 02, 2024. [Online]. Available: https://www.atlantis-press.com/article/125944661.pdf

[44] I. Things, “AWARENESS ON THE ELECTRICAL HAZARD AND SAFETY MEASURES AMONG GRADE 12 TVL-ELECTRICAL STUDENTS,” www.academia.edu, Available: https://www.academia.edu/40728697/AWARENESS_ON_THE_ELECTRICAL_HAZARD_AND_SAFETY_MEASURES_AMON

G_GRADE_12_TVL_ELECTRICAL_STUDENTS

[45] "Electrical Personal Protective Equipment (PPE) – Environmental Health and Safety." https://ehs.ncsu.edu/occupational-health/electrical-personal-protective-equipment-ppe/

[46] Maria, Isfus, Senjawati., Lusi, Susanti., Hilma, Raimona, Zadry., Prima, Fithri. (2018). Gender Influence on the Household Electrical Energy Consumption Behavior. doi: 10.1051/MATECCONF/201824803001

BATAAN