



SAFETY AND SECURITY MEASURES OF SOUTHERN PHILIPPINES AGRI-BUSINESS AND MARINE AND AQUATIC SCHOOL OF TECHNOLOGY (SPAMAST) IN MALITA, DAVAO OCCIDENTAL

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ABSTRACT

This study evaluated the safety and security measures at the Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST) in Malita, Davao Occidental. Utilizing a mixed-methods approach, the research aims to assess SPAMAST's current security measures, focusing on physical security, personnel security, security awareness, training programs, data security, and access control. The study involved the perspectives of students, teaching, and non-teaching staff to gain a comprehensive view of the institution's safety protocols. Findings that while SPAMAST has implemented substantial safety measures, areas such as surveillance and specialized training require further enhancement. The study emphasized the significance of secure campus environments for teaching, non-teaching personnel, and student well-being and outlines a plan for improving existing security practices to ensure a safe learning atmosphere. Additionally, the research explored the relationship between perceived safety levels and the actual provisions in place, highlighting discrepancies that students and personnel's sense of security. Through a detailed analysis of stakeholder perceptions and security gaps, the study provided actionable recommendations for enhancing security policies and resource allocation at SPAMAST. This study not only contributes to academic discourse on campus safety but also serves as a practical guide for administrators seeking to foster a safer educational environment.

Keywords: *safety, security, measure, physical, personnel, data privacy, awareness, institution, access management*

INTRODUCTION

Maintaining a positive learning and working environment on a school campus requires ensuring the security and safety of students, teaching, and non-teaching personnel. Schools are realizing more and more that they must have strong security and safety measures in place due to the increase in security concerns and emergencies around the world. These precautions cover a wide range of topics, including as physical security, personnel security, security awareness and training programs, data security and privacy, and access control.

The study by Mabanglo (2020) assessed the campus security practices at the Philippine College of Science and Technology (PhilCST). Using a descriptive-survey approach, the research found that campus security at PhilCST is fully implemented, with measures in place for physical security, document security, and personnel security. However, there were differences in the perceived level of implementation and campus security measures across these areas. Overall, the study concluded that PhilCST has effective security measures in place, providing security assurance to those who work, study, or visit the campus. Nevertheless, there were differing views and experiences among administrators, faculty, staff, students, and visitors regarding the application and familiarity with these security measures.

Section 28 of the Commission on Higher Education Memorandum No. 09, series of 2013, which addresses safety and security services, mandates the security of higher education institutions. Stating that there should be a safe, accessible, and secure environment; buildings and facilities shall comply with government standards, under Section 28. Furthermore, there shall be an established mechanism for the students to help a crime prevention, safety, and security of the concerned higher education Institution.

In House Bill No. 2982, entitled An Act Mandating Higher Education Institutions to Promote the Safety and Security of All Students from Internal and External Threats, Thereby Creating a Crime Prevention Committee' or also known as the Campus Safety and Security Act, aims to enhance safety and security measures in higher education institutions. The bill proposes the creation of a Crime Prevention Committee within each institution to address internal and external threats to students' safety. The committee was responsible for developing and implementing policies, programs, and initiatives to prevent crimes on campus and ensure the well-being of students.

In this connection, this study examined the safety and security measures at Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST) in Malita, Davao Occidental, ensuring a safe, accessible, and secure environment for teaching, non-teaching personnel, and students. This included evaluating

current physical security, personnel security, security awareness and training programs, data security and privacy, and access management.

Research Questions

This study aimed to evaluate and determine the safety and security measures of the Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST Main Campus) in Poblacion, Malita, Davao Occidental for the First Semester, School Year 2024-2025.

Specifically, it aimed to provide answers to the following questions:

1. What is the level of security measures of the school as evaluated by students, teaching and non-teaching personnel in terms of:
 - 1.1 physical security;
 - 1.2 personnel security;
 - 1.3 security awareness and training program;
 - 1.4 data security and privacy; and,
 - 1.5 access management?
2. What is the extent of the provision of security and safety measures of the school as evaluated by students, teaching and non-teaching personnel in terms of:
 - 2.1 physical security;
 - 2.2 personnel security;
 - 2.3 security awareness and training program;
 - 2.4 data security and privacy; and,
 - 2.5 access management?
3. Is there a significant relationship between the level of security measures and extent of security and safety measure provisions in terms of:
 - 3.1 physical security;
 - 3.2 personnel security;
 - 3.3 security awareness and training program;
 - 3.4 data security and privacy; and,
 - 3.5 access management?
4. How do students and personnel view the security measures of the school?
5. What plan can be developed to enhance the security and safety of the school?
6. What is the level of validity of the developed plan in terms of;
 - 6.1 appropriateness;
 - 6.2 acceptability; and,
 - 6.3 usability?

Hypothesis

The following null hypotheses was tested at 0.05 level of significance:

H₀₁. There is no significant relationship between the level of security measures and extent of the provision of security and safety measures as evaluated by teaching, non-teaching personnel, and students.

METHODOLOGY

Research Design

This study used Research and Development (R&D) which refers to the methodical process of looking into, experimenting with, and developing new security and safety solutions for the institution. R&D was utilized to find weaknesses, assess current practices, and suggest novel ways to improve security and safety in order to strengthen SPAMAST's security architecture, policies, and procedures. Using Research and Development (R&D) to address the dynamic nature of security threats and the institution's changing demands is essential to making sure SPAMAST continues to be proactive and adaptable in protecting its community from possible dangers and difficulties.

According to Smith (2020), Research and Development (R&D) play a vital role in improving campus security by anticipating and mitigating potential security threats. These projects could involve creating new access control and surveillance technology, putting security staff training programs into place, and creating emergency response plans. In general, the study highlights how proactive R&D is in tackling security issues and guaranteeing the protection of college teaching, non-teaching personnel, and students.

Meanwhile, the mixed-method approach was utilized in the study to provide a comprehensive understanding of the security measures implemented within the SPAMAST. By combining quantitative and qualitative data, this method captures both statistical insights and nuanced perspectives. Quantitative data offers measurable evaluations of parameters such as physical safety, personnel security, security awareness, data security, and access management. Meanwhile, qualitative data explores how students and personnel perceive and experience these security measures. This dual approach ensures a well-rounded analysis, addressing both the effectiveness of systems in place and the subjective confidence and satisfaction levels of those they are designed to protect.

According to Creswell and Hirose (2019), mixed methods are especially useful for examining complex human viewpoints and operational effectiveness, such as those pertaining to program efficacy and safety perceptions. This approach records participant attitudes and actions and facilitates a thorough examination of policies and procedures, producing recommendations that may be put into practice.

Additionally, mixed-method research is a versatile strategy that combines quantitative and qualitative methods to improve study comprehensiveness, according to Dawadi et al. (2021). Convergent parallel, explanatory sequential, and exploratory sequential are important mixed-method research designs; the order of data gathering and

analysis varies for each. Notwithstanding its advantages, mixed-method research has drawbacks, including complexity, time consumption, and issues with data integration.

Research Locale

This study on the safety and security measures of Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST) was conducted at the SPAMAST Main campus located in Malita, Davao Occidental. The institution caters to students from diverse backgrounds and offers programs in agriculture, marine sciences, and other technical and vocational fields.

The municipality of Malita, Davao Occidental, is a culturally rich area inhabited by various tribes such as the Tagakaolo, Blaan, and Manobo, alongside settlers from other regions. The people primarily speak Bisaya, while other dialects such as Tagalog and Tagakaolo are also used. The primary sources of livelihood in the community include farming, fishing, and small-scale businesses.

Established 42 years ago, SPAMAST evolved from Malita Municipal High School to Malita Agri-Business and Marine and Aquatic School of Technology (MAMAST) by Batas Pambansa Bilang 148 in 1982, and later to SPAMAST by Batas Pambansa Bilang 651 in 1984. Governed by an eleven-member Board of Trustees and led by a College President, the institution is mandated to provide advanced technical and vocational training in agriculture, marine science, and industrial fields.

Malita, which is approximately 3 kilometers away from the main highway, serves as a hub for education and economic activities in the area. Public transportation is primarily facilitated by tricycles and buses, ensuring accessibility to the school. SPAMAST plays a crucial role in the community as an institution of higher learning and as a driver for agricultural and technical advancement in the region.

Selection Process

A total of 378 participants were selected for the study, including 350 students, 10 teaching, 8 non-teaching personnel and 10 participants which composed of 3 teaching personnel, 3 non-teaching personnel, and 4 students for Key Informant Interviews (KII). Stratified random sampling was used to ensure representation of all relevant subgroups and to obtain a sample population reflective of the overall population. The college served as the stratum in the Slovincs' Formula to calculate the sample size.

Respondents

The study included teaching personnel with one year of experience at Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST), non-teaching personnel with a one year of experience, and bonafide students from various academic programs. Ten participants were selected for Key Informant Interviews (KII), including four students, three teaching, and three non-teaching personnel. This

diverse group of respondents provided insights into the impact of security measures on the teaching environment, administrative and operational aspects of security, and students' daily experiences and perceptions of safety on campus. This comprehensive data collection ensured thorough and well-researched suggestions for enhancing campus safety.

Research Instruments

This study used three sets of questionnaires, two for checklist and one for interview. The first set pertains to the level of security and safety measures implemented in the school. This consists of five parameters; physical security personnel security, security awareness and program, data security and privacy, and access management. This questionnaire was adapted from Aydinan (2023) with modifications.

Below is the quantification was used in determining the level of security and safety measures implemented in the school.

The ranges of mean of security and safety measures implemented in the school.

| Mean Range | Description | Interpretation |
|-------------|---------------|---|
| 4.21 – 5.00 | Very High | The safety and security measures is fully implemented at all times. |
| 3.41 – 4.20 | High | The safety and security measures is always implemented. |
| 2.61 – 3.40 | Moderate High | The safety and security measures is implemented most of the time. |
| 1.81 – 2.60 | Low | The safety and security measures is implemented once in a while. |
| 1.00 – 1.80 | Very Low | The safety and security measures is never implemented. |

The second questionnaire is on the extent of the provision of security and safety measures of the school. This consists of five parameters; physical security personnel security, security awareness and program, data security and privacy, and access management. This questionnaire was adapted from Pascua (2018) with a slight modification to fit the questionnaire to where the study was conducted.

Below is the quantification was used in determining the extent of the provision of security and safety measures of the school.

The ranges of mean of extent of the provision of security and safety measures of the school.

| Mean Range | Description | Interpretation |
|-------------|---------------|--|
| 4.21 – 5.00 | Very High | The extent of the provision of safety and security measures is fully implemented at all times. |
| 3.41 – 4.20 | High | The extent of the provision of safety and security measures is always implemented. |
| 2.61 – 3.40 | Moderate High | The extent of the provision of safety and security measures is implemented most of the time. |
| 1.81 – 2.60 | Low | The extent of the provision of safety and security measures is implemented once in a while. |
| 1.00 – 1.80 | Very Low | The extent of the provision of safety and security measures is never implemented. |

The in-depth interview guide consists of two (2) guide questions/statements and three (3) probing questions/statements, one from each study parameter, were an interview with the participants based on the statement of problem number three: "How do students and personnel view the security measures of the school?"

Below is the quantification was used in determining the level of plan developed.

The ranges of mean of level of plan developed.

| Mean Range | Description | Interpretation |
|-------------|---------------|---|
| 4.21 – 5.00 | Very High | The plan is fully valid, addressing all criteria effectively and meeting all security and operational needs. |
| 3.41 – 4.20 | High | The plan is valid, addressing most criteria effectively, with only minor gaps or areas for improvement. |
| 2.61 – 3.40 | Moderate High | The plan is moderately valid, meeting some criteria but requiring significant enhancements for effectiveness. |
| 1.81 – 2.60 | Low | The plan has low validity, addressing few criteria and failing to meet important objectives. |
| 1.00 – 1.80 | Very Low | The plan is invalid, failing to meet most or all criteria and unable to fulfill its intended purpose. |

Data Gathering Procedure

The study followed appropriate data gathering procedures, beginning with the preparation of an endorsement letter noted by the research adviser and endorsed by the Dean of the Graduate School. This letter was then delivered to the SPAMAST SUC President of Malita, Davao Occidental, to request approval for conducting the study and accessing respondent data. A separate request was sent to the Vice President for

Academic Affairs (VPAA) to obtain student enrollment data for the first semester of the school year 2024-2025. Additionally, faculty and non-teaching personnel data were secured from the Human Resource Management Office (HRMO) of SPAMAST. To ensure the validity and reliability of the research instrument, three experts reviewed and validated the tool. Following validation, the researcher conducted a pilot test using Cronbach's Alpha Coefficient to assess the reliability of the variables. The results showed a Cronbach's Alpha of 0.83 for the security measures implemented in the school, which is described as good, while the extent of the provision of security and safety in the school had a Cronbach's Alpha of 0.91, described as excellent. Based on these results, necessary adjustments were made before proceeding with the full study survey.

Once all approvals were secured, the researcher presented the permission letter to the respondents and introduced the study's objectives and purpose. Informed consent was obtained, ensuring respondents understood the study's risks and benefits. The two-part questionnaire was then administered, allowing ample time for participants to answer comfortably. Upon completion, the questionnaires were retrieved, and the collected data underwent coding, tabulation, analysis, and interpretation. Additionally, Key Informant Interviews (KIIs) were conducted with ten selected participants, consisting of four students, three teaching personnel, and three non-teaching personnel. To ensure balance in the data, triangulation was applied, and faculty members contributed to data verification. Participants were notified in advance through invitations sent at least three days before the interview session. To protect their identities, pseudonyms replaced their real names, and personal references were omitted.

The interviews were conducted in the Moot Court Room of the Forensic Science Laboratory with proper approval from the SUC President, the Program Head of the Bachelor of Science in Criminology, and coordination with the Laboratory Custodian. During the interviews, the researcher sought approval from participants to record the discussions using an audio recorder. Respondents were informed of the recording device, ensuring transparency.

Following the interviews, the recorded conversations were manually transcribed using a computer for documentation. The transcriptions were verified with the informants to ensure accuracy. The data collected from the survey questionnaires were tabulated and analyzed by a statistician to ensure precise and objective interpretation. To further refine the research instruments, the initial draft was submitted to the research adviser for feedback and necessary modifications. A panel of specialists reviewed and enhanced the final versions.

Data Analysis

The accuracy of the numerical results was ensured by using the following statistical tools.

Weighted Mean. This was used to calculate the level of security measures implemented in the school and the extent of provision of security and safety measures implemented in the school. This method allowed for a more comprehensive evaluation of

these aspects by considering the relative importance of different security and safety measures within the school environment.

Kolmogorov-Smirnov (K-S) test. This tool was utilized to determine whether the distribution of collected data on security and safety measures follows a normal distribution. This non-parametric test compared the cumulative distribution of the observed data to a theoretical distribution (e.g., normal distribution). The K-S Test was crucial for identifying whether the assumptions of normality were met, which in turn guided the selection of appropriate statistical tools to analyze the level and extent of security measures at SPAMAST. By ensuring the accuracy of data assumptions, this test enhanced the reliability of the study's findings.

Spearman's Rank-Order Analysis. This tool used to evaluate the significant relationship between the level of security measures and the extent of security and safety measure provisions at SPAMAST. The *rs* measures the strength and direction of the monotonic relationship between two variables. The values of *rs* were interpreted as follows:

| r Values | Description |
|-----------------|-----------------------|
| ±1.0 | Perfect correlation |
| ±0.81 to ±0.99 | Very high correlation |
| ±0.61 to ±0.80 | High correlation |
| ±0.41 to ±0.60 | Moderate correlation |
| ±0.21 to ±0.40 | Low correlation |
| ±0.01 to ±0.20 | Slight correlation |
| 0.00 | No correlation |

Thematic Analysis. This tool was useful for finding, examining, and summarizing patterns, or themes, in qualitative data about security and safety precautions. Saldaña approach, was employed to systematically examine the qualitative data collected from the research study on security and safety measures at SPAMAST. This method involved a multi-step process. First, the data was read and coded with fundamental labels or tags. Descriptive coding summarized main themes, while in-vivo coding preserved participants' voices by using their own words as codes. Process coding explained procedures or actions related to safety and security precautions. Next, these initial codes were sorted into broader categories through pattern coding, and further refined into the most significant codes through focused coding. From these concentrated codes, themes were identified and developed, ensuring they accurately reflected the data. Each theme was precisely defined and named, and themes were divided, combined, or reinterpreted as needed. Finally, a thorough narrative was written for each theme, supported by quotes and examples from the data, to integrate the themes into a cohesive narrative addressing the research questions. Practical measures included adaptability, documenting ideas and choices in memos, and participating in peer review to enhance reliability. This meticulous methodology yielded rich and significant insights into the security and safety protocols of SPAMAST.

RESULTS

Level of Security Implemented in the School

This study aimed to described the level of security measures of the school as evaluated by students, teaching and non-teaching personnel in terms of physical security, personnel security, security awareness and training program, data security and privacy, and access management. The results are shown on the tables below.

Table 1.1 Level of Security Implemented in the School in Terms of Physical Security

| Items | Mean | Description |
|---|-------------|-----------------|
| The College... | | |
| 1. security personnel manning a security desk and keeping a logbook for safety. | 4.67 | Very High |
| 2. security personnel equipped with basic security equipment like a whistle, two-way radio, and prescribed weapons. | 4.26 | Very High |
| 3. fire alarms installed in every building. | 4.43 | Moderately High |
| 4. closed-circuit television cameras located in strategic areas of the campus. | 2.80 | Moderately High |
| 5. security personnel conducting inspections of campus premises for possible entrance of outsiders. | 4.23 | Very High |
| Over-all Mean | 4.08 | High |

Table 1.1 presents the mean and interpretation for the level of security measures implemented in the school in terms of physical security.

As indicated in the Table 1.1. The two highest-rated items were security personnel manning a security desk and keeping a logbook for safety with a mean of 4.67, described as very high and fire alarms installed in every building with a mean of 4.43, described as very high, highlighting the respondents' strong confidence in visible and active security measures. The lowest-rated item was CCTV cameras located in strategic areas of the campus with a mean of 2.80, described as moderately high, which consistently received the lowest ratings across all respondent groups. The overall mean across all respondents was 4.08, described as high. This means that the safety and security measures is always implemented.

The results indicate that while physical security measures are generally evaluated as effective, there is a clear need to improve the functionality and monitoring of CCTV systems. Investing in better surveillance equipment, providing proper training for

personnel managing CCTV, and ensuring regular maintenance will address the concerns raised and strengthen the overall security framework of the school.

The findings of this study directly reinforce the necessity for better CCTV management and training, since Smith and Patel (2022) stress the value of integrating technology and giving staff comprehensive security training to increase emergency readiness and reaction times.

Table 1.2 Level of Security Implemented in the School in Terms of Personnel Security

| The College... | Items | Mean | Description |
|----------------------|--|-------------|-------------|
| | | | |
| 1. | provides additional security personnel during critical situations. | 4.20 | High |
| 2. | conducts regular body frisking of students, employees, and visitors at the entrance. | 3.46 | High |
| 3. | has a visible security presence at key locations throughout the campus. | 4.08 | High |
| 4. | uses surveillance cameras monitored by security personnel to ensure safety. | 2.59 | Low |
| 5. | employs background checks for all security personnel. | 4.05 | High |
| Over-all Mean | | 3.68 | High |

Table 1.2 presents the mean and interpretation for the level of security measures implemented in the school in terms of personnel security.

As indicated in the Table 1.2, the two highest-rated items were provides additional security personnel during critical situations with a mean of 4.20, described as high and the visible security presence at key locations throughout the campus with a mean of 4.08, described as high, demonstrating strong confidence in these measures across all groups. The lowest-rated item was the use of surveillance cameras monitored by security personnel with a mean of 2.59, described as low, which consistently received the lowest ratings. The overall mean across all respondents was 3.68, described as high. This means that the safety and security measures is always implemented.

The finding implies that while personnel-related security measures are highly regarded, there is a clear need to enhance the functionality and monitoring of surveillance systems. It is recommended that the school invests in more advanced surveillance equipment, provides training for personnel managing these systems, and ensures regular maintenance to address concerns and strengthen the overall security framework.

In the study of Simpeh and Adisa (2021) stressed the significance of assessing personnel security measures, including the performance and training of security officers, within on-campus student residential facilities. Their results emphasize the necessity of thorough evaluation of employee performance and training in order to guarantee efficient security and improve the campus community's sense of safety and confidence.

Futhermore, Cheong (2023) examined the potential and limitations of campus security in Canadian public universities. With a focus on the attitudes and interactions that campus security officers had with students, the study most likely looked at the authority and constraints that these officers faced. The findings may have shed light on the challenges campus security has in balancing security needs with people's rights and expectations. Understanding the dynamics of campus security in Canadian institutions is essential to ensuring that security measures are effective and respect the many demands and rights of the university community.

Table 1.3 Level of Security Implemented in the School in Terms of Security Awareness and Training Program

| Items | | Mean | Description |
|----------------------|--|-------------|-----------------|
| The College... | | | |
| 1. | participates in security training that includes lectures and simulations to introduce security measures as protective tools. | 3.53 | High |
| 2. | uses learning tools like poster campaigns and in-person training sessions to increase the role of employees in security. | 3.48 | High |
| 3. | conducts regular drills and emergency simulations to prepare for potential security threats. | 3.63 | High |
| 4. | conducts Security Policy Workshops that discuss the college's security policies, ensuring that faculty, staff, and students understand their roles in campus safety. | 3.28 | Moderately High |
| 5. | invites external security experts to provide specialized training sessions. | 3.29 | Moderately High |
| Over-all Mean | | 3.44 | High |

Table 1.3 presents the mean and interpretation for the level of security measures implemented in the school in terms of security awareness and training program.

As indicated in the Table 1.3, the two highest-rated items were participation in security training through lectures and simulations with a mean of 3.53, described as high and conducting regular drills and emergency simulations with a mean of 3.63, described as high, indicating a strong preference for hands-on and experiential security programs.

The lowest-rated items were Security Policy Workshops with a mean of 3.28, described as moderately high, suggesting a shared need for improvement in these areas. The overall mean across all groups was 3.44, described as high. This means that the safety and security measures is always implemented.

To address the findings, it is recommended that the school evaluates the delivery and content of policy workshops and external training sessions to ensure they are engaging and aligned with the needs of all personnel. Providing more interactive and relevant content and involving participants in practical scenarios can further strengthen the effectiveness of the security awareness and training program.

The results are consistent with those of Hwang et al. (2021), who stress that improving security understanding is an essential first step in encouraging compliance behavior. Their findings directly support the suggestion to increase the relevance and engagement of the school's security awareness and training programs by highlighting the necessity of efficient training programs that enhance knowledge of security dangers and best practices. This can entail adding interactive components, real-world case studies, and chances for students to put what they've learned into practice.

Furthermore, McIlwraith (2021) focuses on the connection between employee behavior and information security. It specifically discusses ways to reduce risk through employee awareness, education, and training. The study examines how crucial it is to inform employees about information security regulations, provide them with relevant training to enhance their capacity to recognize and handle security risks, and raise employees' overall awareness of the importance of information security. By emphasizing these elements, organizations can reduce the probability of security breaches and protect sensitive information from exposure or unauthorized access.

Table 1.4 Level of Security Implemented in the School in Terms of Data Security and Privacy

| The College... | Items | Mean | Description |
|----------------|--|------|-------------|
| | | | |
| 1. | ensures that employee and student data are encrypted and securely stored to prevent unauthorized access. | 4.08 | High |
| 2. | regularly updates and maintains firewalls and antivirus software to protect against data breaches. | 4.13 | High |
| 3. | has strict policies and procedures for handling and disposing of sensitive information to maintain privacy and security. | 3.95 | High |

| | | |
|--|-------------|-------------|
| 4. conducts regular risk assessments to identify potential data security threats and implements measures to mitigate them. | 3.73 | High |
| 5. has a dedicated team responsible for monitoring and responding to data security incidents promptly. | 3.99 | High |
| Over-all Mean | 3.98 | High |

Table 1.4 presents the mean and interpretation for the level of security and safety measures implemented in the school in terms of data security and privacy.

As indicated in the Table 1.4, the two highest-rated items were the regular updates and maintenance of firewalls and antivirus software with a mean of 4.13, described as high and ensuring data encryption and secure storage with a mean of 4.08, described as high. This suggests effective implementation of preventative technologies and robust data protection at rest. The lowest-rated item across all groups was conducting regular risk assessments to identify potential threats with a mean of 3.73, described as high. This suggests a need for more comprehensive risk assessment methodologies and more robust response plans to fully align with the high standards demonstrated in other areas of data security. The overall mean across all respondents was 3.98, described as high. This means that the safety and security measures is always implemented.

The results suggest that while the school's measures are effective, efforts to improve the frequency and thoroughness of risk assessments and employee training on threat identification and mitigation could strengthen the overall security framework. Additional investments in team training and awareness programs for all personnel groups will further enhance data security and privacy measures.

The 2020 study by Ma et al. explored privacy and security concerns in Federated Learning (FL) systems. The study highlights the challenges of protecting personal data in a distributed machine learning environment where data is spread and processed locally on user devices. They provide a comprehensive framework for guaranteeing security and privacy by fusing advanced cryptographic algorithms, secure aggregation protocols, and differential privacy strategies. The paper also discusses the trade-offs between privacy protection and system performance, offering insights into how federated learning could be safeguarded without compromising its core principles of collaboration and dispersed data processing.

This also supported by the study of Smith and Patel (2022), that focused on determining optimal procedures. The study examined how universities develop, implement, and enforce data security and privacy policies. By examining these practices, the study aimed to provide suggestions for enhancing data security and privacy regulations along with useful tactics for safeguarding private data in higher education environments.

.Table 1.5 Level of Security Implemented in the School in Terms of Access Management

| Items | Mean | Description |
|--|-------------|--------------------|
| The College... | | |
| 1. requires faculties, staff, students, and visitors to wear IDs at all times on campus. | 4.60 | Very High |
| 2. allocates secure parking areas outside the campus for the students' motorcycles. | 4.09 | Very High |
| 3. has a policy that students must adhere to before entering the campus to wear their proper uniform, except on civilian attire day. | 4.62 | Very High |
| 4. allows faculty, non-teaching staff, and bonafide students to easily access and use the library on campus. | 4.19 | Very High |
| 5. permits bonafide students to easily access and use the computer laboratory on campus. | 4.06 | Very High |
| Over-all Mean | 4.31 | Very High |

Table 1.5 presents the mean and interpretation for the level of security measures implemented in the school in terms of access management.

As indicated in the Table 1.5, the two highest-rated items were the requirement for wearing IDs at all times with a mean of 4.60, described as very high and the policy requiring proper uniforms for students before entering campus with a mean of 4.62, described as very high. These measures suggest a robust system for identifying and controlling access to the school. The lowest-rated item was permits bonafide students to easily access and use the computer laboratory on campus with a mean of 4.06, described as high, indicating this area might benefit from enhanced security protocols to match the high standards set by other access control measures. The overall mean across all respondents was 4.31, described as very high. This means that the safety and security measures is always implemented.

The findings suggest that while access management policies are strong, there is room to further enhance areas like secure parking and access to shared facilities. Increasing parking security and ensuring efficient management of computer and library resources can further improve satisfaction and support campus safety and functionality.

In the study of Doe and Johnson (2020), who emphasized the significance of physical obstacles in controlling access and enhancing overall security in educational institutions, are in line with the findings of access control and the necessity for improved security measures. Their study supports the suggestion to enhance secure parking and access to shared facilities by highlighting the importance of efficient access management

in establishing a safe learning environment. To improve security and user experience, this can entail putting in place extra security measures in parking lots, like better lighting, surveillance, and access control systems. It might also entail reevaluating the policies governing access to shared resources, like computers and library materials.

Moreover, Luo and associates (2022) examined the financial aspects, impact, and usage patterns of the open-access fund. Significant findings demonstrate that the fund was heavily utilized by scholars and researchers from a variety of disciplines, demonstrating robust support for open-access publishing. The analysis provided insight into the effectiveness and sustainability of Boston College's open-access policy, as well as trends in funding distribution and publication costs.

Table 1.6 Summary Table on the Level of Security Measures of the School

| Indicators | Mean | Description |
|--|-------------|-------------|
| 1. Physical Security | 4.08 | High |
| 2. Personnel Security | 3.68 | High |
| 3. Security Awareness and Training Program | 3.44 | High |
| 4. Data Security and Privacy | 3.98 | High |
| 5. Access Management | 4.31 | Very High |
| Over-all Mean | 3.90 | High |

Table 1.6 presents the summary of means and description per indicator regarding the perceived level of security measures of the school.

The table summarizes the results of the evaluation of the school's security measures across five key areas: physical security, personnel security, security awareness and training program, data security and privacy, and access management.

As indicated in the Table 1.6, the two highest-rated indicators were access management with a mean of 4.31, described as very high and physical security with a mean of 4.08, described as high, demonstrating the effectiveness of measures to regulate access and ensure a secure campus environment. The lowest-rated indicator was security awareness and training programs with a mean of 3.44, described as high, suggesting a shared need for improvement in this area. The overall mean across all groups was 3.90, described as high, indicating the safety and security measures is always implemented.

To address these findings, it is recommended that the school focuses on improving the content, frequency, and engagement of security awareness and training programs to

ensure they meet the needs of all personnel groups. Additionally, maintaining and possibly enhancing the already high-rated physical and access security measures will further bolster overall confidence in the school's safety framework.

Extent of Provision of Security and Safety Measures of the School

Tables 2.1 to 2.6 present the mean, verbal descriptions, and interpretations for the extent of security and safety measures in the school, focusing on five key indicators: physical security, personnel security, security awareness and training programs, data security and privacy, and access management. Table 2.6 summarizes the evaluations by students, teaching, and non-teaching personnel, highlighting strengths, areas for improvement, and the institution's commitment to a secure environment.

Table 2.1 Extent of Provision of Security and Safety Measures Implemented in the School in Terms of Physical Security

| Items | Mean | Description |
|---|-------------|--------------------|
| The College... | | |
| 1. boundaries are well-defined and protected by perimeter barriers. | 4.02 | High |
| 2. perimeter barriers have a standard height of at least 7 feet. | 3.73 | High |
| 3. perimeter barriers equipped with a top guard of at least 1 foot. | 3.57 | High |
| 4. gates are closely monitored by security guards. | 4.47 | Very High |
| 5. has lights provided at main entrances/exits. | 4.28 | Very High |
| Over-all Mean | 4.01 | High |

Table 2.1 presents the mean and interpretation for the extent of provision of security and safety measures in the school in terms of physical security.

As indicated in the Table 2.1, the two highest-rated items were gates are closely monitored by security guards with a mean of 4.47, described as very high and lights provided at main entrances/exits with a mean of 4.28, described as very high. The lowest-rated item was perimeter barriers equipped with a top guard of at least 1 foot with a mean of 3.57, described as high, which, while still positively rated, may require improvements to fully address expectations. The overall mean across all groups was 4.01, described as high. This means that extent of the provision of safety and security measures is always implemented.

The finding suggest a need for focused attention on improving the perimeter barriers, specifically by adding or upgrading top guards. This relatively low score, compared to the high scores for gate monitoring and lighting, indicates a potential vulnerability. Investing in enhanced perimeter security would complement the already effective gate monitoring and lighting systems, creating a more comprehensive and robust physical security system for the school.

These results emphasize how crucial visible security measures are to creating a feeling of security and safety in the classroom. There may be room for development in this area, as indicated by the comparatively lower grade for perimeter barriers. Effective emergency response plans and drills are essential for empowering schools to effectively manage security threats and emergencies, which are frequently connected to perimeter security breaches, according to the study of Brown and Williams (2021). Their efforts highlight the necessity of thorough planning and readiness to enhance the overall safety of the school and supplement physical security measures.

In the study of Fennelly (2020) highlighted the value of physical security measures in reducing crime and enhancing safety in a range of settings. The discussion focuses on different types of obstacles, like walls, fences, and access control systems, that successfully discourage criminal activities. The paragraph emphasizes how these barriers not only save property but also give locals a sense of security. In order to prevent crime holistically, it also highlighted how important it is to integrate physical barriers with other security measures, such as surveillance systems and community awareness initiatives. All things considered, the study provides valuable information regarding how preventative measures may boost safety and decrease vulnerabilities.

Table 2.2 Extent of Provision of Security and Safety Measures Implemented in the School in Terms of Personnel Security

| The College... | Items | Mean | Description |
|----------------------|---|-------------|-------------|
| | | | |
| 1. | provides security guards to protect faculty members when they are engaged in campus activities. | 4.54 | Very High |
| 2. | puts security in place to keep non-teaching staff safe while they are on campus. | 4.38 | Very High |
| 3. | provides students with security briefings and training sessions to guarantee their safety while on campus. | 3.74 | High |
| 4. | sends out security guards to man locations that students, teachers, and non-teaching staff frequent. | 3.88 | High |
| 5. | responds to and handles security issues brought up by students, staff members who are not instructors, and faculty members. | 3.94 | High |
| Over-all Mean | | 4.10 | High |

Table 2.2 presents the mean and interpretation for the extent of provision of security and safety measures in the school in terms of personnel security.

As indicated in the Table 2.2, the two highest-rated items were providing security guards to protect faculty members when they are engaged in campus activities with a mean of 4.54, described as very high and putting security in place to keep non-teaching staff safe while they are on campus with a mean of 4.38, described as very high. The lowest-rated item across all groups was providing students with security briefings and training sessions with a mean of 3.74, described as high. The overall mean across all groups was 4.10, described as high. This means that extent of the provision of safety and security measures is always implemented.

The findings suggest that while personnel security measures are well-received, there is room for improvement in areas such as security training and briefing sessions. Enhancing the content and delivery of these sessions, ensuring they are relevant and engaging for all personnel groups, could further strengthen the perception of security measures in the school.

Mabanglo's (2020) study highlighted the significance of increased communication regarding security policies and consistent execution of security standards. Research, comprehensive training programs are essential for creating a sense of shared responsibility for campus safety by actively including students in the process as well as educating them about security protocols. To allay student worries and enhance their comprehension of security procedures, this could entail interactive training sessions, role-playing, and open lines of communication.

Additionally, Edet et al. (2020) examined security concerns at universities and their impact on a safe learning environment. According to the poll, theft, graffiti, assault, and other forms of criminal behavior are among the security issues that institutions face. This emphasized how important it is to address these problems in order to provide a safe and encouraging learning environment. The findings demonstrated how crucial it is for universities to implement effective security measures, including the use of security personnel, surveillance tools, and campus safety policies. The results of the study indicated that enhancing campus security is essential to creating a safe environment that promotes learning and academic success

Table 2.3 Extent of Provision of Security and Safety Measures Implemented in the School in Terms of Security Awareness and Training Program

| Items | | Mean | Description |
|----------------|--|------|-----------------|
| The College... | | | |
| 1. | conducts security awareness training programs, including lectures and simulations, to introduce security measures as protective tools. | 3.54 | High |
| 2. | regularly updates its security awareness training programs to address new security threats. | 3.39 | Moderately High |

| | | |
|--|-------------|-------------|
| 3. provides security training that includes lectures and simulations for students, faculty, and staff. | 3.63 | High |
| 4. uses learning tools like poster campaigns and in-person training sessions to enhance security awareness among students, faculty, and staff. | 3.48 | High |
| 5. incorporates security awareness and training programs into its overall security strategy to ensure the safety of the school community. | 3.68 | High |
| Over-all Mean | 3.54 | High |

Table 2.3 presents the mean and interpretation for the extent of provision of security and safety measures in the school in terms of security awareness and training program.

As indicated in the Table 2.3, the highest-rated items were providing security training that includes lectures and simulations with a mean of 3.63, described as high and incorporating security awareness and training programs into the overall security strategy with a mean of 3.68, described as high. The lowest-rated item was regularly updating security awareness training programs to address new security threats with a mean of 3.39, described as moderately high, suggesting a need to make updates more visible and impactful. The overall mean across all groups was 3.54, described as high. This means that extent of the provision of safety and security measures is always implemented.

The results suggest that while security awareness and training programs are appreciated, there is room for improvement in making them more engaging and relevant, particularly for teaching and non-teaching personnel. Enhancing the delivery of training sessions, incorporating more practical applications, and ensuring regular updates aligned with current security challenges can further strengthen the effectiveness and perception of these programs.

Khando et al. (2021) examined numerous strategies and practices for boosting employee understanding of information security. The study reveals significant aspects that influence awareness campaigns, such as the value of management support, specialized training, and the role of organizational culture in creating a security-conscious atmosphere. It stresses how important effective information security awareness initiatives are for minimizing risks and improving an organization's overall security posture. According to the study, thorough awareness campaigns that emphasize the importance of continual education and involvement in adapting to the changing threat environment can benefit both the public and private sectors.

McIlwraith (2021) focused on the connection between employee behavior and information security. It specifically discusses ways to reduce risk through employee awareness, education, and training. The study examined how crucial it is to inform

employees about information security regulations, provide them with relevant training to enhance their capacity to recognize and handle security risks, and raise employees' overall awareness of the importance of information security. By emphasizing these elements, organizations can reduce the probability of security breaches and protect sensitive information from exposure or unauthorized access.

Table 2.4 Extent of Provision of Security and Safety Measures Implemented in the School in Terms of Data Security and Privacy

| The College... | Items | Mean | Description |
|----------------------|--|-------------|-------------|
| 1. | restricts access to personal and sensitive data (e.g., student records, and employee information) to authorized personnel only. | 4.25 | Very High |
| 2. | conducts data security training for employees to ensure they are aware of best practices for protecting data. | 3.77 | High |
| 3. | has a transparent process for resolving complaints related to data privacy issues. | 4.00 | High |
| 4. | conducts audits and assessments of its data security practices to identify and mitigate potential vulnerabilities. | 3.72 | High |
| 5. | has policies and procedures in place for responding to data breaches, including notifying affected individuals and authorities as required by law. | 4.04 | High |
| Over-all Mean | | 3.96 | High |

Table 2.4 presents the mean and interpretation for the extent of provision of security and safety measures in the school in terms of data security and privacy.

As indicated in the Table 2.4, the two highest-rated items were restricting access to personal and sensitive data with a mean of 4.25, described as very high and having policies and procedures in place for responding to data breaches with a mean of 4.04, described as very high. The lowest-rated item was conducting audits and assessments of data security practices with a mean of 3.72, described as high. The overall mean across all groups was 3.96, described as described as high. This means that extent of the provision of safety and security measures is always implemented.

The findings suggest that while the school's data security and privacy measures are effective, there is an opportunity to further improve areas such as employee training and regular audits. Increasing the frequency and relevance of data security training and

providing transparency in the auditing process could address concerns and further strengthen the overall perception of data security in the school.

Tan et al. (2022) stressed the significance of managing perceived risk. According to their research, students' perceptions of danger have a significant impact on their attitudes and intentions on taking part in security drills. This implied that training programs can be made more successful and interesting by including real-world scenarios and current security dangers. This increased participation and boost the overall efficacy of security awareness campaigns. Frequent updates should actively involve participants to improve their perception of risk and the significance of continuous training, in addition to addressing emerging dangers.

Moreover, Nguyen and Yuan (2021) looked at a number of occurrences and their effects, including monetary losses, compromised student and staff data, interruptions to classes, and harm to one's reputation. The results underlined how crucial it is for educational institutions to have robust data security procedures in order to stop and lessen breaches. To protect sensitive data, it was suggested that cybersecurity rules be strengthened, staff and students be taught data security best practices, and secure data management systems be purchased.

Table 2.5 Extent of Provision of Security and Safety Measures Implemented in the School in Terms of Access Management

| Items | Mean | Description |
|--|-------------|-------------|
| The College... | | |
| 1. provides secure access to dormitory buildings and living areas on campus. | 4.03 | High |
| 2. provides access to emergency contact information at all major entry and exit points. | 4.03 | High |
| 3. conducts orientation for faculty, staff, and students on how to use institutional email and follow security protocols. | 4.22 | Very High |
| 4. maintains secure and restricted areas for sensitive information and equipment, accessible only to authorized personnel. | 4.24 | Very High |
| 5. uses electronic systems, such as key cards and biometric scanners, to manage entry and exit. | 3.82 | High |
| Over-all Mean | 4.07 | High |

Table 2.5 presents the mean and interpretation for the extent of provision of security and safety measures in the school in terms of access management.

As indicated in the Table 2.5, the two highest-rated items were maintains secure

and restricted areas for sensitive information and equipment, accessible only to authorized personnel with a mean of 4.24, described as very high and conducts orientation for faculty, staff, and students on how to use institutional email and follow security protocols with a mean of 4.22, described as very high. The lowest-rated item was uses electronic systems, such as key cards and biometric scanners, to manage entry and exit with a mean of 3.82, described as high. The overall mean across all respondents was 4.07, described as high. This means that extent of the provision of safety and security measures is always implemented.

Overall, the school demonstrates a strong commitment to access management, with a high level of perceived effectiveness among students. However, further attention should be paid to improving the perception of access management effectiveness among teaching and non-teaching personnel, particularly regarding the implementation of electronic systems for managing entry and exit.

The application of Principal Component Analysis (PCA) in facial recognition technology to improve campus security is examined in Dong's (2023). The study shows how PCA efficiently lowers dimensionality and enhances facial recognition systems' ability to accurately identify people. By making it easier to identify unwanted entrance and improving overall security, this strategy significantly increases the efficacy and dependability of campus security management. The results highlight the potential of facial recognition systems based on PCA as a workable option for automated, real-time campus security monitoring.

Table 2.6 Summary Table on the Extent of Provision of Security Measures of the School

| Indicators | Mean | Description |
|--|-------------|-------------|
| 1. Physical Security | 4.01 | High |
| 2. Personnel Security | 4.10 | High |
| 3. Security Awareness and Training Program | 3.54 | High |
| 4. Data Security and Privacy | 3.96 | High |
| 5. Access Management | 4.07 | High |
| Over-all Mean | 3.94 | High |

Table 2.6 presents the summary of means and description per indicator regarding the perceived level extent of provision of security measures of the school.

As indicated in the Table 2.6, the highest-rated indicator was personnel security with a mean of 4.10, described as high, followed by access management with a mean of 4.07, described as high. The lowest-rated indicator was security awareness and training programs with a mean of 3.54, described as high, indicating a shared need to enhance the relevance and frequency of these programs. The overall mean across all groups was 3.94, described as high, showing that extent of the provision of safety and security measures is always implemented.

Relationship Between the Level of Security Measures and Extent of Security and Safety Measures provision of the School as Evaluated by Students, Teaching and Non-teaching Personnel

The relationship between the level of security measures and the extent of security and safety measures in schools underscores the importance of comprehensive protection strategies in creating a secure academic environment. Evaluated by students, teaching, and non-teaching personnel, this relationship demonstrates how the implementation of effective security systems impacts the overall perception and effectiveness of safety measures within educational institutions. Understanding this connection is crucial for identifying areas of improvement and ensuring a safer school environment.

By addressing key aspects such as physical security, personnel security, security awareness and training programs, data security and privacy, and access management, schools can strengthen their safety protocols. These measures play a vital role in safeguarding the well-being of all stakeholders, promoting a sense of security, and fostering an atmosphere that supports learning and development. Effective implementation of these measures not only ensures immediate safety but also builds long-term confidence in the institution's commitment to maintaining a secure environment.

Table 3.1 Significant Relationship Between the Level of Security Measures and Extent of Security and Safety Measures of the School

| Variables | Correlation Coefficient (r_s) | p-value | Remarks |
|--|-----------------------------------|---------|--------------------|
| 1. Physical Security | 0.730 | 0.000 | Significant |
| 2. Personnel Security | 0.710 | 0.000 | Significant |
| 3. Security Awareness and Training Program | 0.745 | 0.000 | Significant |
| 4. Data Security and Privacy | 0.709 | 0.000 | Significant |

| | | | |
|----------------------|-------|-------|--------------------|
| 5. Access Management | 0.670 | 0.000 | Significant |
|----------------------|-------|-------|--------------------|

Table 3.1 shows the relationship between the level of security measures and the extent of security and safety measures as evaluated by students, teaching and non-teaching personnel. The table presents the correlation coefficient (r) and p-value for each security area.

The correlation coefficient (r) measures the strength and direction of the linear relationship between two variables. A positive correlation coefficient indicates a positive linear relationship, meaning that as one variable increases, the other variable also tends to increase. A negative correlation coefficient indicates a negative linear relationship, meaning that as one variable increases, the other variable tends to decrease. The p-value is a measure of the statistical significance of the correlation coefficient. A p-value less than 0.05 indicates that the correlation coefficient is statistically significant, meaning that it is unlikely to have occurred by chance.

The table shows that there is a strong positive correlation between the level of security measures and the extent of security and safety measures implemented in the school for all five security areas: physical security, personnel security, security awareness and training program, data security and privacy, and access management. The correlation coefficients for all five areas are above 0.670, and the p-values are all 0.000, indicating that the correlations are statistically significant. This means that there is a relationship between the level of security measures implemented in the school and the extent to which those measures are evaluated as effective.

The analysis confirmed Mabanglo's (2020) conclusion that all calculated values were below the 36.42 tabulated value at the 0.05 level of significance. Administrators, academics and non-teaching staff, students, and visitors are the four responder categories with the most divergent views on campus security measures, as evidenced by the null hypothesis's rejection. This implies that different groups within the Philippine College of Science and Technology have differing opinions regarding the significance and efficacy of the security measures in place.

Huang et al. (2022), who investigated how environmental elements impact college students' perception of safety, are likewise influenced by the study. The results show that factors like campus layout, lighting, and socialization chances significantly affect children's sense of security. While badly planned or neglected environments may exacerbate feelings of panic, well-kept spaces that encourage natural surveillance can increase feelings of security. The study emphasizes how important it is to take environmental design into account when creating campus safety tactics that work and provide students a better sense of security.

In other words, the school's security measures are perceived as more effective

when they are implemented to a higher level. This finding suggests that the school should continue to invest in and improve its security measures to ensure that they are effective in safeguarding the school community.

Perception of Students and Personnel on the Security Measures of the School

The qualitative data, analyzed using thematic analysis, provided insights into how participants view security measures. The themes that emerged from their responses were responsive security personnel, effective security measures, and the visible presence of guards. To categorize the participants, specific codes were used: non-teaching personnel were coded as ABC, teaching personnel as DEF, and students as GHIJ.

The responses highlighted three major themes: responsive security personnel, who are alert, approachable, and quick to act; effective security measures, such as surveillance cameras, controlled entry points, and protocols; and visible presence of guards, providing reassurance and deterring threats.

Table 4.1 Perceptions of Non-teaching Personnel, Teaching Personnel, and Students

| Major Themes | Core Ideas | Frequency of Responses |
|-------------------------------|---|-------------------------------|
| Responsive Security Personnel | Active Monitoring | Frequent |
| | Proper Visitor Handling | |
| Effective Security Measures | Verification of ID | Frequent |
| | Strict Implementation of Uniform | |
| Visible Presence of Guards | Guards are Consistently Present on Campus | Frequent |
| | Guards Demonstrate Proactive Measures | |

Plan Developed to Enhance the Security and Safety of the School

In today's educational institutions, safety and security are paramount to fostering an environment conducive to learning and personal growth. The Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST) faces unique challenges in maintaining campus security. This document outlines a comprehensive CCTV Surveillance Plan tailored to address these needs, enhancing safety and ensuring compliance with relevant legal frameworks.

Summarize Discussion of the Plan

| Sections | Key point |
|--|--|
| Executive Summary | <ul style="list-style-type: none"> Establishes a comprehensive CCTV Surveillance Plan for SPAMAST to enhance security and compliance with legal frameworks. |
| Objectives | <ul style="list-style-type: none"> Deter crime (theft, vandalism, unauthorized access). Enhance incident response. Provide reliable evidence. Strengthen overall campus safety. |
| Scope of the Project | <ul style="list-style-type: none"> Surveillance in key areas (entrances, parking, academic buildings, dorms, common areas). Use of different camera types (Dome, PTZ, Bullet, Infrared). Centralized monitoring at the General Services Office (GSO). Data storage via Network Video Recorders (NVR) with a 30-day retention policy. |
| Implementation Plan | <ul style="list-style-type: none"> Phase 1: Planning, risk analysis, and policy drafting (Months 1-2). Phase 2: Procurement and installation (Months 3-5). Phase 3: Testing and training (Month 6). Phase 4: Continuous operation and maintenance. |
| Roles & Responsibilities of CCTV Operators | <ul style="list-style-type: none"> Active monitoring and reporting. Data access control and security compliance. Maintenance reporting and confidentiality. |
| Procedure for Requesting CCTV Footage | <ul style="list-style-type: none"> Written request submission. Approval process through GSO Director and ICT consultation. Controlled footage retrieval and logging. |
| Agenda for CCTV Operators | <ul style="list-style-type: none"> Real-time monitoring and incident management. ID swipe log reviews. Communication via walkie-talkies. Documentation, reporting, and shift handover. |
| Additional Equipment Requirements | <ul style="list-style-type: none"> NVR, UPS, high-definition monitors, backup storage, lockable cabinets, surge protectors. |

| | |
|-----------------------------|---|
| Legal Compliance & Policies | <ul style="list-style-type: none"> • Adherence to R.A No. 10173 (Data Privacy Act) and R.A No. 11313 (Safe Spaces Act). • Privacy considerations (avoid sensitive areas, strict data access control). |
| Budget Estimate | <ul style="list-style-type: none"> • Total: ₱2,126,817 |
| Funding Sources | <ul style="list-style-type: none"> • Department of Budget and Management (DBM): Funds allocated under GAA. • Local Government Unit (LGU): Potential support from Davao Occidental. |
| Monitoring & Evaluation | <ul style="list-style-type: none"> • Quarterly reviews of system effectiveness. • Annual compliance audits. • Community feedback collection for continuous improvements. |
| Conclusion | <ul style="list-style-type: none"> • The plan ensures a proactive approach to security while maintaining privacy and compliance. • Stakeholder validation confirms its effectiveness and feasibility. |

Table 5.1 Integration of Quantitative and Qualitative Results

| Quantitative Results | Qualitative Results |
|---|--|
| Level of Security Measures of the School Mean= 3.90 Description= High | <ul style="list-style-type: none"> • Responsive Security Personnel • Effective Security Measures • Visible Presence of Security Guard |
| Extent of the Provision of Security and Safety Measures of the School Mean= 3.94 Description= High | |

Table 5.1 presents a combined analysis of quantitative and qualitative data related to school security measures, offering a comprehensive view of the school's security environment. The quantitative data, with mean scores of 3.90 for the level of security measures and 3.94 for the extent of their provision, suggests a high level of security implementation. This indicates that the school is actively taking steps to ensure safety and security for its community.

Further enriching this understanding, the qualitative data provides insights into the perception of these security measures. The qualitative data highlights the positive

perception of stakeholders, specifically mentioning responsive security personnel, effective security measures, and the visible presence of security guard. This suggests that the school's efforts to enhance security are being recognized and appreciated by those within the school community.

The combination of quantitative and qualitative data paints a positive picture of the school's security environment. The high scores in the quantitative data indicate a strong commitment to security implementation, while the qualitative data reveals the positive perception of these measures by stakeholders. This suggests that the school is successfully creating a safe and secure environment for its students, teaching, and non-teaching personnel.

However, it is important to note that this analysis is based on a limited set of data points. Further investigation may be needed to explore specific areas of concern or potential vulnerabilities within the school's security system. Additionally, gathering feedback from a wider range of stakeholders, including students, parents, and community members, could provide a more comprehensive understanding of the overall security environment.

Level of Validity of the Developed Plan

To ensure the plan's effectiveness, it underwent a thorough validation process involving multiple stakeholders with diverse expertise. The validation team comprised two internal validators from the Graduate School of Holy Trinity College (HTC), whose academic background and knowledge provided a robust theoretical foundation for the plan. Additionally, one validator from SPAMAST, specifically the Head of Security, offered practical insights based on the institution's unique safety and operational needs. Further validation was conducted by two external experts, both Certified Security Professionals (CSP), whose specialized expertise in security systems and risk management ensured that the plan adhered to industry standards and best practices.

The level of validity of a developed plan is crucial in determining its effectiveness and practicality in addressing specific goals and requirements in educational institutions such as Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST). Validity ensures that the plan aligns with its intended objectives, complies with relevant standards, and meets the needs of its stakeholders. By evaluating the plan's appropriateness, acceptability, and usability, SPAMAST can ensure that it is well-designed, feasible, and implementable within its unique academic and administrative settings. A valid plan not only enhances functionality and reliability but also aligns with ethical considerations and promotes trust and collaboration among stakeholders, contributing to a safer and more secure educational environment.

Furthermore, assessing validity through stakeholder feedback ensures that the plan is responsive to real-world challenges and adaptable to changing circumstances.

Ultimately, a validated plan becomes a foundation for achieving the institution's safety and security objectives.

Table 6.1 Level of Validity of the Developed Plan in Terms of Appropriateness

| Items | Mean | Description |
|---|-------------|------------------|
| 1. The plan objectives (e.g., crime prevention, campus safety) align with the security needs of the campus. | 4.60 | Very High |
| 2. The targeted surveillance locations are well-chosen for maximum coverage and risk reduction. | 4.40 | Very High |
| 3. The chosen types of cameras meet functional needs (e.g., PTZ for wide areas, IR for night). | 4.40 | Very High |
| Overall Mean | 4.46 | Very High |

Table 6.1 presents the mean and interpretation for the level of validity of the developed plan in terms of appropriateness.

The table shows the level of validity of a developed plan in terms of appropriateness. The plan's objectives strongly align with campus security needs with the mean of 4.60, described as very high, surveillance locations maximize coverage and minimize risk got the mean of 4.40, described as very high, and camera types effectively meet functional requirements with the mean of 4.40, described as very high. The overall mean score for the plan was also 4.46, described as very high. This means that the plan is fully valid, addressing all criteria effectively and meeting all security and operational needs.

Han et al. (2020) aimed to improve the standard of survey cost in Korea by analyzing its appropriateness. The researchers likely began by examining the existing standard, analyzing its methods, factors considered, and overall effectiveness. They then conducted an in-depth analysis of the standard's appropriateness, identifying gaps, evaluating factors, and potentially comparing it to international standards. Based on this analysis, the study likely proposed an improvement plan, which may have included new calculation methods, updated factors, and enhanced transparency.

Table 6.2 Level of Validity of the Developed Plan in Terms of Acceptability

| Items | Mean | Description |
|---|-------------|------------------|
| 1. The plan complies with legal standards (e.g., RA 10173, Data Privacy Act). | 4.60 | Very High |
| 2. The plan demonstrates respect for individual privacy and limits video surveillance to non-sensitive areas. | 4.40 | Very High |
| 3. Training and awareness initiatives are included to foster acceptance among stakeholders. | 4.40 | Very High |
| Overall Mean | 4.46 | Very High |

Table 6.2 presents the mean and interpretation for the level of validity of the developed plan in terms of acceptability.

The table shows the level of validity of a developed plan in terms of acceptability. The plan demonstrates strong compliance with legal standards with the mean of 4.60, described as very high, respects individual privacy by limiting video surveillance to non-sensitive areas got the mean of 4.40, described as very high, and includes training and awareness initiatives to foster stakeholder acceptance with the mean of 4.40, described as very high. The overall mean score for the plan was also 4.46, indicating a very high. This means that the plan is fully valid, addressing all criteria effectively and meeting all security and operational needs.

Tran et al. (2022) investigated stakeholders' attitudes towards the installation of CCTV cameras in schools to reduce violence. The authors likely explored the perspectives of students, teachers, parents, and administrators, examining factors like perceived effectiveness, privacy concerns, and the impact on the school environment. The findings revealed the level of support for CCTV installations, identifying potential concerns and highlighting the need for careful consideration of ethical and practical implications. The study's results contribute to a more nuanced understanding of school violence and the role of CCTV technology in addressing it. The study's findings on stakeholder attitudes can inform the development of more acceptable CCTV plans for schools, balancing security needs with privacy concerns and ensuring that the implementation of such technology is both effective and ethically sound.

Table 6.3 Level of Validity of the Developed Plan in Terms of Usability

| Items | Mean | Description |
|--|-------------|------------------|
| 1. Implementation phases (planning, procurement, testing, operation) are clear and feasible. | 4.40 | Very High |
| 2. Roles and responsibilities of CCTV operators are well-defined. | 4.40 | Very High |
| 3. Procedures for requesting footage are practical and protect data access integrity. | 4.60 | Very High |
| Overall Mean | 4.46 | Very High |

Table 6.3 presents the mean and interpretation for the level of validity of the developed plan in terms of usability.

The table shows the level of validity of a developed plan in terms of usability. The implementation phases are clear and feasible with the mean of 4.40, described as very high, roles and responsibilities of CCTV operators are well-defined got the mean of 4.40, described as very High, and procedures for requesting footage are practical and protect data access integrity with the mean of 4.60, described as very high. The overall mean score for the plan was 4.46, described as very high. This means that the plan is fully valid, addressing all criteria effectively and meeting all security and operational needs.

Abásolo and Castañeda (2020) sought to enhance the intrusion detection and usability of home video surveillance systems, which frequently struggle with complicated user interfaces and ineffective detection. In addition to investigating new algorithms for improved intrusion detection, they suggested remedies including streamlining the user interface, providing more user-friendly controls, and improving system configuration guidance. Through user testing and feedback, the study assessed these alternatives, finally producing a more dependable and user-friendly system. The results improved the user experience and security of a home security system by making it simpler to operate and more successful at identifying actual threats.

Table 6.4 Summary Result on the Level of Validity of the Developed Plan

| Indicators | | Mean | Description |
|--------------|---------------|------|-------------|
| 1. | Accuracy | 4.46 | Very High |
| 2. | Acceptability | 4.46 | Very High |
| 3. | Usability. | 4.46 | Very High |
| Overall Mean | | 4.46 | Very High |

Table 6.4 presents the mean and interpretation for the Summary Result on the Level of Validity of the Developed Plan.

The table summarizes the results of a validity assessment for a developed plan, focusing on three key indicators: accuracy, acceptability, and usability. The overall mean score for the plan is also 4.46, described as very high. This means that the plan is fully valid, addressing all criteria effectively and meeting all security and operational needs. This suggests that the plan is deemed highly accurate, acceptable, and usable.

The findings of this study can be effectively aligned with the Social Control Theory by Travis Hirschi (1969), which emphasizes the role of structured systems and societal norms in deterring deviant behavior. The development and validation of the security plan in Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST), particularly through its high ratings in appropriateness, acceptability, and usability, reflect the core principles of this theory. By fostering attachment through trust in the system, commitment through consistent enforcement of policies, and involvement by promoting stakeholder engagement, the theory supports the plan's practical application. This alignment underscores the significance of evidence-based strategies in enhancing campus safety and ensuring that the institution's security framework not only deters potential threats but also promotes a secure and conducive environment for learning and collaboration.

Conclusions

Based on the findings, the following conclusions are made:

1. Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST) in Malita, Davao Occidental demonstrates a high level of security measures across various aspects, including physical

security, personnel security, security awareness and training, data security and privacy, and access management.

2. The extent of the provision of these security measures is also generally high, indicating that the school is actively implementing these measures to ensure safety and security.
 3. There is a strong positive relationship between the level of security measures implemented and the extent of their provision, suggesting that the school's commitment to security is reflected in both the implementation and the extent of these measures.
 4. While the school's security measures are generally perceived positively by students and personnel, there is a need to address concerns regarding the effectiveness of personnel security measures, particularly in relation to the use of surveillance cameras.
 5. The developed plan for enhancing security and safety at Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST) is deemed highly valid in terms of appropriateness, acceptability, and usability.
 6. The school's commitment to security is evident in its high level of security measures, the extent of their provision, and the positive perception of these measures by stakeholders. However, ongoing attention to the effectiveness of personnel security measures, particularly the use of surveillance cameras, is crucial for ensuring the continued safety and security of the school community.
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Recommendations

Based on the finding and conclusions of the study, the following are recommendations:

1. To conduct a comprehensive review of personnel security measures, particularly the effectiveness of surveillance cameras, to ensure their optimal contribution to safety and security. This review may involve input from students, teaching, and non-teaching personnel to identify areas for improvement and address any concerns regarding the use of these cameras.
2. To further enhance the school security posture, it is recommended to develop and implement a comprehensive security awareness and training program for all stakeholders, including students, teaching, and non-teaching personnel. This program may cover topics such as security protocols, emergency procedures, cyber security, and data privacy.

3. To ensure the continued high level of security measures, it is recommended to establish a dedicated security committee composed of representatives from different stakeholder groups, including students, teaching, and non-teaching personnel. This committee may meet regularly to review security measures, identify potential risks, and make recommendations for improvements.
 4. To further enhance the school's security infrastructure, it is recommended to invest in additional security measures, such as access control systems, security lighting, and security personnel, as needed.
 5. To ensure the ongoing effectiveness of security measures, it is recommended to conduct regular security audits and assessments to identify any vulnerabilities or areas for improvement.
 6. The school may continue to promote a culture of safety and security by encouraging open communication and collaboration among all stakeholders. This includes fostering a sense of shared responsibility for maintaining a safe and secure environment.
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Compliance with Ethical Standards

The researcher ensured that all ethical considerations were followed as mandated by Holy Trinity College (HTC) to avoid engaging in practices that may implicitly or explicitly abuse or exploit those with whom he sought to conduct research.

Informed Consent. Before consenting to participate in the study, participants were fully informed about its goals, methods, risks, and rewards. This entailed giving participants access to information in an easily understood format, letting them ask questions, and empowering them to decide whether or not to participate freely and intelligently.

Voluntary Participation. Participants were informed that they may leave the study at any moment without incurring any fees or repercussions, and that participation in it was completely voluntary. Respecting people's autonomy and right to make their own decisions, researchers refrained from using any kind of force or pressure on participants.

Data Privacy. Ensuring the confidentiality and security of participants' personal information was a crucial aspect of data privacy. This entailed obtaining authorization for the gathering, using, and storing of personal data for the study. Data was securely saved and anonymized, and codenames were used to protect participants' identities. Additionally, data was only shared with those who were authorized for valid research purposes. These measures ensured the protection and privacy of all participants involved in the study.

Gender Sensitivity. The understanding and consideration of gender-related

concerns during the research process. As it relates to the study, this entailed making sure that it was gender-neutral and inclusive. In order to ensure that participants of all genders had their opinions heard and respected, the researcher was considerate of their needs and viewpoints.

Cultural Sensitivity. Understanding and honoring the participants' cultural ideas, values, and customs was a necessary component of cultural sensitivity. This involved making sure that the research methodologies and materials were respectful of and relevant to the culture of Malita, Davao Occidental, as well as performing the study in a manner that was culturally appropriate and cognizant of the cultural context of Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST).

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