

Evaluating Management Information System (MIS) In Public State University: A Multidimensional Analysis

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Abstract

This study evaluated the Management Information System (MIS) at Partido State University (ParSU), Camarines Sur, Philippines, focusing on its effectiveness in enhancing administrative and academic processes through a multidimensional analysis. Using a quantitative survey based on The Integrated Success Model for Evaluating Information Systems in the Public Sector (Nasser & Zaied), data were gathered from a stratified random sample of 210 students, faculty, and administrative staff across seven campuses. The survey assessed key dimensions including system management support, information quality, system quality, training, and user involvement. Results revealed strong positive perceptions with mean scores exceeding 4.25 for system support, information accuracy, system functionality, and training effectiveness, indicating successful implementation and high user satisfaction. However, user involvement received a significantly low mean score of 1.0, reflecting minimal participation in decision-making and feedback mechanisms. This gap suggested potential risks to the system's long-term success due to limited user ownership, innovation, and adaptability. The study concluded that while the MIS effectively met user needs and institutional goals, addressing the critical deficiency in user engagement was necessary to enhance system sustainability and responsiveness. Recommendations included creating structured opportunities for user feedback through surveys, advisory groups, and participatory workshops, alongside investigating barriers to involvement via qualitative methods such as focus groups. Maintaining existing strengths in system support and training was also emphasized to preserve positive perceptions. By fostering greater user collaboration, Partido State University (ParSU) could unlock the full potential of its MIS, ensure continuous improvement, and alignment with evolving organizational requirements. This research provided valuable insights for public universities seeking to optimize MIS deployment and maximize its impact on higher education administration.

Keywords: *Management Information System (MIS), Public State University, Enrolment System*



1. INTRODUCTION

In today's world, efficient and effective use of Management Information Systems (MIS) is vital to improving the efficiency of administrative operations in higher education institutions globally. Higher education institutions are increasingly adopting digital solutions to simplify administrative tasks such as enrolment, grading and financial management. The use of digital systems reduces the occurrence of human errors; increases transparency which supports improved decision-making; ultimately enhancing the institution's overall effectiveness and efficiency in providing improved service delivery and improved operational efficiency to achieve their strategic objectives.

In the Philippines, public institutions of higher education experience many challenges due to their limited resources, large student populations and geographic dispersion. Many institutions have implemented online enrolment, clearance and record management systems as a means of addressing the issues arising from manual processes; these digital solutions will not only reduce student waiting times in long queues or excessive paperwork but will also improve the accuracy of their student data. The case of Partido State University (ParSU) illustrates how an institution can provide multiple locations within one system to deliver both academic and administrative services to students located in the Partido area of Camarines Sur. To effectively coordinate its administrative services across these campuses, ParSU must implement a dependable and accessible Management Information System (MIS) that will assist in providing consistency in the nature of administrative processes.

Despite the increasing use of Management Information Systems (MIS) in public institutions in general, studies show that many public institutions, including Partido State University (ParSU), continue to experience challenges with their implementation. The challenges include inadequate technology infrastructure; limited training opportunities for staff and students and unwillingness to change from manual to digital processes; all of which limit the ability of public institutions to achieve the full benefit of a Management Information System (MIS).

There is information that relates directly to how Management Information System (MIS) impacts sustainability of administrative processes, user satisfaction and overall governance. Most of the studies currently available on Management Information System (MIS) focus only on the benefits of using this type of system without addressing unique challenges faced by the Public State Universities, for example Partido State University (ParSU). As a result, there is little research on how Partido State University in the Philippines, especially Partido State University (ParSU), implement and manage a Management Information System (MIS). Therefore, it was essential to determine how a Management Information System (MIS) worked given the limitations of their budget and the geographic extent of their operations. Moreover, there was still very little understanding of what factors influenced user acceptance and system sustainability and how well these systems fit into existing processes.

This research was relevant for several different groups of stakeholders. For University Administrators, it provided information and insight into how they could use Management Information System (MIS) to operate more efficiently, improve data security, and enhance their ability to make informed decisions. Faculty and Staff gained insight into factors that led to user acceptance and satisfaction, which assisted them in developing training programs and improving



systems. Students benefited from improved enrollment processes, better handling of records, and more effective communication. Policymakers and education leaders had data that assisted them in developing strategies that facilitated effective use of Management Information System (MIS) in Public State Universities, which in turn improved overall educational quality and governance in these institutions.

The purpose of this research study was to evaluate the effectiveness of the following Management Information System (MIS) modules at Partido State University (ParSU), the Student Information and Accounting System (SIAS) and the Online Student Clearance System (OSCS), through evaluation of the performance and user satisfaction of those modules over multiple campuses. When completed, this report provided recommendations on how Partido State University could improve their use of Management Information System (MIS).

Additionally, the findings generated from this study assisted Partido State University (ParSU) in meeting its mission to provide accessible, quality, and affordable education through more efficient and secure administrative systems. Finally, this study also helped address the broader need to improve Management Information System (MIS) at Partido State University in the Philippines, where institutions may all contend with some level of similar challenges.

1.1 Research Objective

This research set out to analyze all facets of the public state university's management information system implementation. The study focused on the challenges, opportunities, and strategies that were needed for success during this transition to provide valuable information for future digitalization projects at the university, and possibly models for other organizations. Specifically, the study:

1. Evaluated the level of Stakeholders' Satisfaction of Management Information System (MIS) of a Public State University in terms of:
 - a. System Quality
 - b. Information Quality
 - c. Service Quality
 - d. Management Supports
 - e. Trainings
 - f. User Involvement
 - g. Perceived Usefulness
 - h. Perceived Ease of Use
 - i. Behavioral Intention
 - j. User Satisfaction
2. Proposed strategic plan base on the finding of the study to improve Management Information System (MIS) in Public State University?



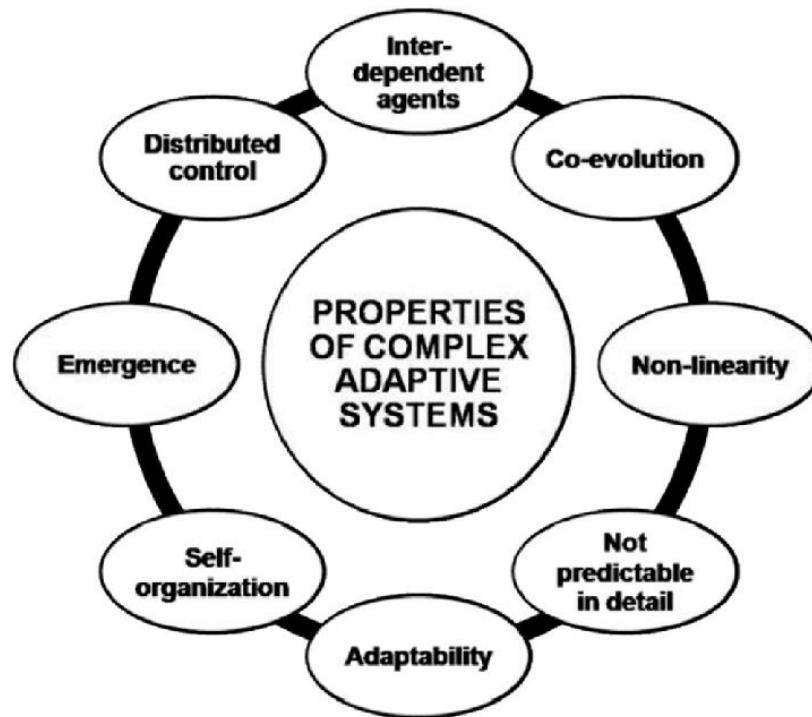
1.2 Theoretical Framework

1.2.1 Complex Adaptive Systems (CAS)

Complex Adaptive Systems (CAS) Theory was an interesting conceptual framework for analyzing public state universities in the context of the Management Information System (MIS). A university was treated as a dynamic institution rather than a static organization. Universities as living systems consisted of multiple agents that worked together to create a continuous cycle of adaptation to their environment. The primary focus of Complex Adaptive Systems (CAS) theory was that behaviors and functions within complex adaptive systems emerged through local interactions between their components (Ahman et al., 2024), and these local interactions produced emergent properties that could not be determined just by looking at the behavior or functions of any of the individual components.

The importance of the theory could be readily understood by considering how information systems functioned in such a context. In applying Complex Adaptive Systems (CAS) theory to Management Information Systems (MIS) in Public State Universities, several crucial issues emerged. The first concerned emergence, in which the overall efficiency of a Management Information System (MIS) arose not from design but from the many interactions among users and between users and the system itself. An example would be how faculty members embraced new systems for online grade submission or how students used online systems to register for courses

Another significant aspect of Complex Adaptive Systems (CAS) theory was self-organization, in which various departments or user groups in a university may have chosen to organize themselves around the use or adaptation of the Management Information Systems (MIS) to meet their unique requirements without external input. Finally, there was nonlinearity, in which minor changes to the Management Information Systems (MIS) or its surrounding environment may have had major consequences. These dynamics indicate that sometimes minor changes made to either the design or operation could lead to unexpected changes in how well the system performed or how much it was accepted by users, within the entire organization. In addition, they demonstrated how highly interconnected all components of the system and all of its users really were, with quick flow-through of effects between numerous organizational levels and functions.

Figure 1.*Complex Adaptive System (CAS) Theory*

1.2.2 Technology Acceptance Model

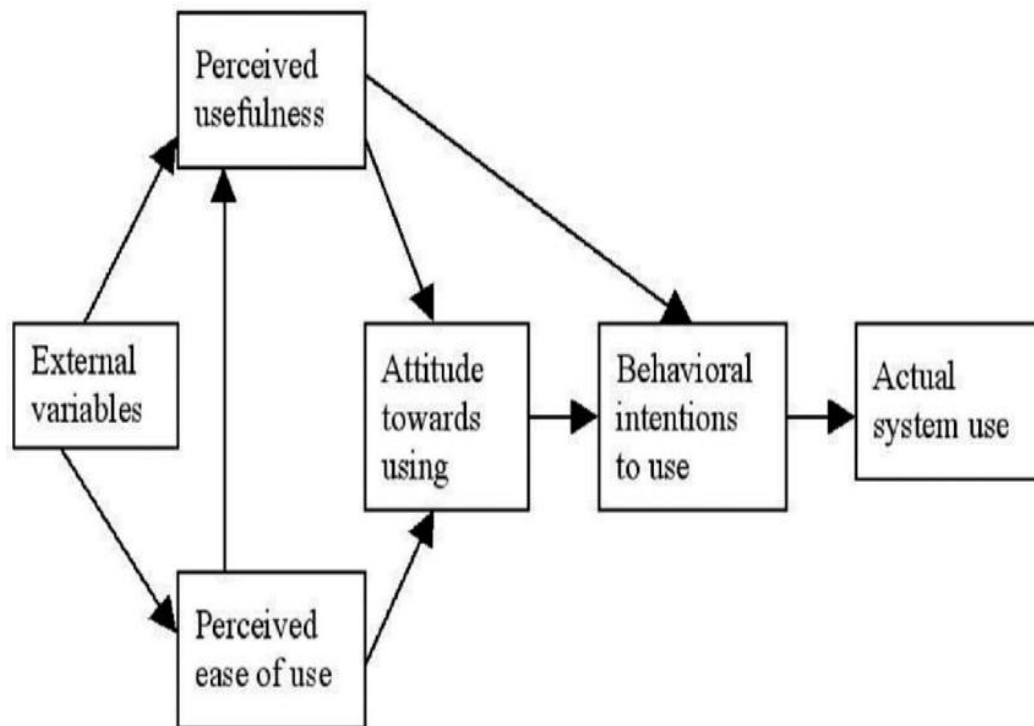
The Technology Acceptance Model (TAM) provided insight into the process by which individuals accepted and adopted new technologies. In other words, the theory was very useful for investigating the acceptance and adoption of Management Information Systems (MIS) at public state universities. According to the Technology Acceptance Model, two main factors led individuals to adopt technology: perceived usefulness (PU) and perceived ease of use (PEOU). Perceived usefulness was the extent to which individuals believed that using the system would improve their performance at work, while perceived ease of use involved the extent to which the individual believed that the technology would be effortless to use (Alsyof et al., 2023).

In Management Information Systems (MIS) in universities, the Technology Acceptance Model (TAM) explained why some systems had a high rate of acceptance among employees, while others did not (Opoku & Enu-Kwesi, 2020). The evaluation of the perceptions among university administrators and teachers regarding the use of Management Information Systems (MIS) in performing activities like recording students' academic records, scheduling classes, and other administrative activities, as well as the level of ease of use of the system, provided essential insights into the main factors that influenced the adoption of the technology.

Perceptions of the usefulness and ease of use of Management Information Systems (MIS) played a critical role in the successful implementation and efficient management of this system. If the Management Information Systems was perceived as complex (PEOU) and/or not useful (PU) for employees' everyday activities, its adoption became less likely despite its technological sophistication. Thus, the emphasis was placed on improving users' perceptions regarding the usefulness and ease of use of Management Information Systems (MIS).

Figure 2.

Technology Acceptance Model (TAM)



The Technology Acceptance Model (TAM) (Opoku, M. O., & Enu-Kwesi, F., 2020) and Complex Adaptive Systems (CAS) (Ahmad, M. A., Baryannis, G., & Hill, R., 2024) theories provided complementary perspectives on the success of MIS. The Technology TAM looked at the acceptance/usage of technology at a user level through the perception of whether the technology would fulfil two elements—perceived usefulness and ease of use. CAS framework illustrated that the university environment was composed of dynamic interactions of many different variables, with multiple relationships among those variables, and their interactions constantly influenced the university.

Therefore, understanding how these two frameworks (TAM and CAS) had an inter-relationship was vital to the successful implementation of MIS. From a CAS perspective, users developed congruent perceptions of the complexity of universities; however, from a TAM perspective, an MIS that was poorly integrated added to perceptions of difficulty in using it (e.g., because of complex navigational methods). Conversely, an MIS that was well designed, but not adaptive to the emergent variables of a given university, did not produce the desired results.



Hence, the successful implementation of an MIS depended on evaluating both the user's perception of the system and the level of adaptability of the MIS to the complex environment of a university.

1.3 Conceptual Framework

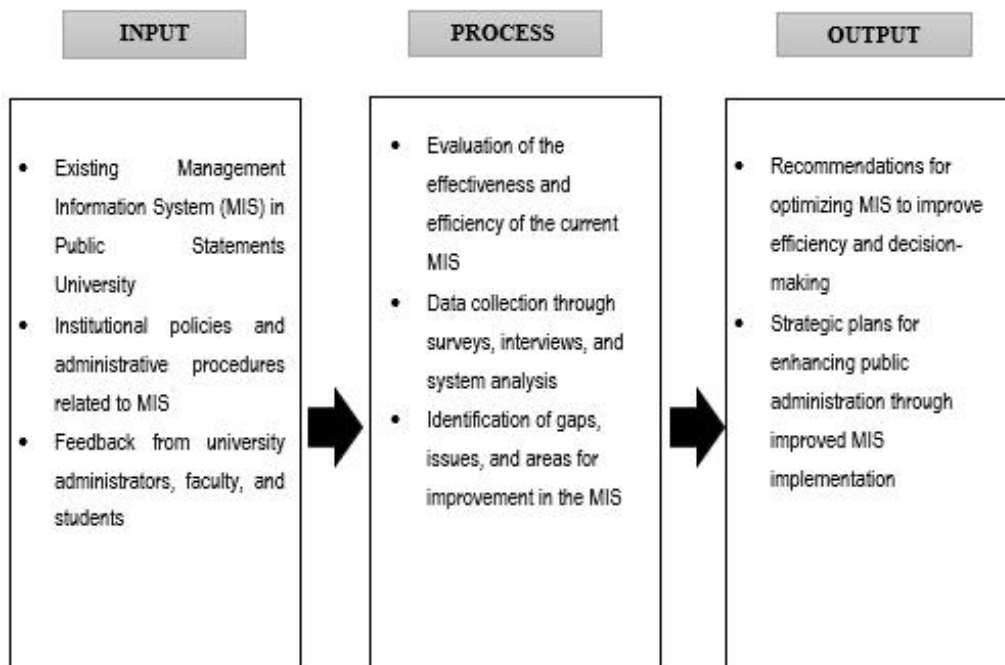
The research framework that had been incorporated into this research was the IPO (Input-Process-Output) Model, which provided research tools for systematically analyzing how the MIS affected Public State Universities. The IPO Model gave researchers a structured approach to identifying key elements of MIS effectiveness, the processes associated with implementing an MIS, and the anticipated results of MIS use. In the input phase, essential data was gathered about the current MIS, the institution's policies, administrative procedures, and user input from the stakeholders.

The process phase included determining how well the Management Information System was operating by using different data collection tools such as surveys and system analyses. The objective of the process phase was to identify any gaps or flaws in the Management Information System, as well as what needed to be improved upon. Once these areas had been determined, the study could create plans on how to modify the areas determined to be deficient and increase the overall effectiveness of the Management Information System.

The output phase produced the results of the study, which included an evaluation of the Management Information System (MIS), suggestions for increasing efficiency, and recommendations for future planning within the context of public administration. An effective methodology for measuring and evaluating the Management Information System (MIS) had been developed through this approach. Using this approach, a complete analysis of an MIS could be provided, as well as information that could help institutions make better decisions and become more efficient.

Figure 3.

Conceptual Paradigm



1.4 Assumption of the Study

This study had the following assumptions;

1. The measurable dimensions of the Management Information System (MIS) specifically its technical quality, organizational support, and user perceptions—provide a comprehensive and valid basis for evaluating the system's overall effectiveness.
2. The empirical findings derived from this evaluation can be translated into feasible and actionable strategic plans aimed at enhancing the university's administrative and academic operations.

2. METHODOLOGY

2.1. Research Design

To assess the efficacy of the Management Information System at Partido State University, the study was executed using a Descriptive and Evaluative Research Design, with a focus on describing and evaluating the effectiveness of the various components of the MIS, specifically the Student Information and Accounting System and the Online Student Clearance System. As a result, a Quantitative Approach was chosen so that each of the measures being assessed in regard



to the variables, System Quality, Information Quality, Service Quality, Managerial Support, User Involvement, Perceived Usefulness, Perceived Ease of Use, Behavioral Intention and User Satisfaction, could be used to facilitate the collection of quantifiable results for use in this study to produce measurable data for use on the assessment of the total effectiveness of the MIS. The use of surveys allowed for the collection of responses from System Stakeholders (e.g. Students; Faculty; Administrative Staff).

Survey subjects were chosen for this study because they represent a diverse population and will help to assess the performance of Management Information System across the varying user groupings represented by this population. The Integrated Success Model (Nasser & Zaid) served as a guiding model for evaluating information systems within the public sector (specifically, these systems are being evaluated on the basis of three critical qualities; technical quality, organizational support for the Management Information System, and user perceptions of the Management Information System. The methodology focused on ultimately analyzing the strengths and areas that require improvement for the Management Information System in its current operating condition by collecting numerical data.

2.2. Methods and Procedures

This research was done using a quantitative method to evaluate how effective the Management Information System at Partido State University. Information was gathered by using a survey questionnaire of The Integrated Success Model for Evaluating Information Systems in the Public Sector (Nasser & Zaid). This survey was sent to a representative sample of the users of the MIS from all seven (7) campuses of ParSU (Goa, Caramoan, Lagonoy, San Jose, Sagñay, Salogon, and Tinambac). The results of this survey focused on the participants' perception and satisfaction with MIS success, including the performance of the system and the perceived impact on the organization.

The questions on the survey were mostly closed-ended questions in a Likert scale format where participants indicated their degree of agreement or disagreement with a series of statements which were related to their experiences with the MIS. For the Likert scale responses used in the study, numbers and their corresponding verbal interpretation (See Table 1) were provided. Other than Likert scale responses, there were demographic questions to determine each participant's position within the university, which of the colleges and campuses they belonged to, and how much experience they had with MIS, as well as self-reported computer skills. Providing clear instructions to participants helped them understand the task at hand, reduced chances of ambiguity, and therefore helped increase the possibility of obtaining accurate and relevant data from surveys. Protecting the confidentiality of participants was essential for ethical research practice, as it protected their privacy, encouraged participants to answer the surveys honestly.

**Table 1.***Liker's level of Satisfaction*

Verbal Interpretation	Numerical Value	Scale	Description
Strongly Agree	5	4.20-5.00	The respondents are Strongly Agree
Agree	4	3.40-4.19	The respondents are Agree
Neutral	3	2.60-3.39	The respondents are Neutral
Disagree	2	1.80-2.59	The respondents are Disagree
Strongly Disagree	1	1.00-1.79	The respondents are Strongly Disagree

2.3. Respondents' Profile

The purpose of this research was to assess how effective, or beneficial, the Management Information System had been across all seven (7) campuses at Partido State University (ParSU). The overall target population consisted of all students, faculty, and administrators who were active in any way with Partido State University during the data collection for this study. To obtain a representative sample of this large group, multi-stage stratified sampling procedures were utilized.

First, all students, faculty, and administrative staff members were stratified by their respective campuses, which represented the seven (7) different geographical locations for the Partido State University campuses. Each of the campuses was further stratified based on the role of the participants in the following categories: Student, Faculty, and Staff. Proportional allocation was used to determine the sample size for each stratum to represent the distribution of roles across all campuses of Partido State University. Finally, individual respondents were selected using simple random sampling within all three strata. The resulting sample provided improved generalizability and accuracy of the research findings to other members of the entire Partido State University population by reducing the potential for bias due to the use of the above sampling methodology. The details of the achieved sample size for each campus and participant role could be found in Table 2. The sample sizes for each group and/or campus were determined using power analysis for estimating minimum sample sizes to ensure sufficient statistical power for making meaningful conclusions. To provide an opportunity for maximum participation across all campuses and stakeholder groups, the majority of data collection occurred through the use of online surveys; however, paper-based surveys were made available to individuals without access to the internet. This ensured that the results of this study reflected all members of the entire community.

Table 2.*Respondent's Profile*

Position	Female	Male	Total	Percentages
Faculty	6	6	12	5.71 %
Non-Teaching	11	5	16	7.62 %
Student	91	91	182	86.67%
Total	108	102	210	100 %

2.4. Ethical Consideration

Throughout the entire process of collecting data in this study to evaluate the effectiveness of the Management Information System (MIS) at Partido State University (ParSU), ethical considerations were prioritized.

Prior to collecting any data, an informed consent form was provided to all participants in order to give them an opportunity to read and answer questions concerning the purpose, procedures, possible risks and benefits of the study and their right to withdraw from participation at any time without penalty.

Data obtained were anonymized to protect participants' identity. This meant that their names and other identifiable information were replaced with unique identifying codes or pseudonyms. Only individuals authorized by the researchers were permitted to access the data which was stored securely according to university policy and all applicable laws including Republic Act No. 10173 or the Data Privacy Act Of 2012 in order to preserve confidentiality and prevent unauthorized access or disclosure of the data.

The study complied with all relevant ethical guidelines and regulations and all participants were provided with research findings in order to promote transparency. Any potential conflicts of interest were disclosed and addressed as appropriate. The researcher took steps to reduce risks and maximize benefits for all participants. At all times during this study the integrity of the research was preserved to ensure the validity and reliability of the findings while ensuring respect for the rights and welfare of all participants.

2.5. Data Analysis Techniques

This study employed different types of statistical analysis to analyze responses from surveys. Using frequency counts and percentages provide an idea of the number of times responses were selected and possible values in Relative Terms.

The mean and weighted mean were used to determine how people responded on average to the items measured – this information is useful to understand average perceived perception

among respondents. The weighted means received from Likert scale item responses will allow for the comparison of the weights given by different options compared to one another by indicating with higher weight means that respondents have a more positive perception or higher agreement rate to that item than those who responded with a lower weighted mean.

The use of Pearson correlation coefficients provides a means of determining the strength and direction of linear correlations between variables such as perceived usefulness and user acceptance. If values are close to +1, a strong correlation exists, while if the values are close to 0, then the variables are not strongly correlated.

Finally, inference statistical analyses, such as t-tests or ANOVA were used to perform the analysis of group differences in perceptions and experiences related to the management information system from respondent groups, e.g. students, faculty, or administrative staff, and was able to identify group specific needs and or issues. All statistical analyses were conducted using STATA software to ensure accuracy and consistency. Each statistical method was carefully selected to align with the research objectives and to provide meaningful interpretation of the data.

Frequency Count

Formula

$$f = \sum x$$

Where:

- f = frequency
- x = number of occurrences of a response

Frequency count was used to determine how many times a particular response or category appeared in the dataset. This provided the basic distribution of responses and serves as the basis for further statistical analysis.

Percentage Technique

Formula

$$P = \frac{f}{N} \times 100$$

Where:

P = percentage

f = frequency

N = total number of respondents



The percentage technique was employed to express the proportion of respondents selecting a specific response relative to the total number of respondents. This allows easier comparison and interpretation of the data.

Likert Scale Analysis – Weighted Mean

$$WM = \frac{\sum(f \times w)}{N}$$

Where:

WM = weighted mean

f = frequency of responses

w = assigned weight of each scale

N = total number of respondents

The weighted mean was used to determine the average level of agreement or perception of respondents by assigning numerical weights to each Likert scale option. This identifies the overall tendency of responses for each indicator.

3. RESULTS AND DISCUSSION

3.1. Stakeholders' Satisfaction on System Quality

System quality was one of the most important factors in determining user satisfaction and the success of an overall system because it includes features of the system such as, but not limited to, reliability, ease-of-use, adaptability, trusting it, and maintaining it. This dimension looked at the performance of the Student Information and Accounting Systems (SIAS) and the Online Student Clearance System (OSCS) with regard to data accuracy and user-friendliness for both students and administrative staff.

Table 3 shows that respondents rated the system quality very highly. The reliability measures indicated a very strong level of agreement among respondents that the systems operated correctly the first time the user attempted to perform a task, and that users received timely confirmation of completed tasks. Usability was rated highly by respondents, with all respondents indicating that they were able to successfully complete tasks using the system. Adaptability received the highest ratings, indicating that users found it relatively easy to learn how to use the system and viewed the system as easy to use. Users exhibited trust in the system, based on respondents' agreement that system was fulfilling the commitments made by the system and that there were policies relating to privacy and security in place and available to users. Finally, Respondents' perceptions of the system's maintainability were very high, with respondents indicating that the system was both regularly updated and easy to maintain.

According to the findings, the Management Information System (MIS) of Partido State University is indicated to be a reliable and adaptable instrument in the realization of successful administrative processes and effectively managing student information. The above usability and



maintainability ratings validate the system's ability to respond appropriately to its users and to the requirements of the institution.

From an academic standpoint, results found in this dimension are congruent with the Technology Acceptance Model that identifies perceived ease of use and perceived usefulness as two of the key components of technology acceptance. Furthermore, the adaptiveness of the MIS is indicative of how Complex Adaptive Systems Theory exemplifies the evolution of organizations and their behaviors as a result of changing demands from dynamic environments in ongoing institutions. To continue realizing these advantages, ultimately leading to high user satisfaction and successful continued utilization of the system, organizations must continue to capitalize on their current strengths.

Continuing priority was also given to ongoing technical care, such as using scheduled systems updates and implementing proactive maintenance. Ongoing technical care allowed the Management Information System to remain a reliable resource, ultimately minimizing downtime and interruptions to continuing operations at the university level. Moreover, continuing systems updates were essential for enhancing the security level of the Management Information System and addressing the areas of vulnerability within the organization.

Proactive maintenance allowed for early identification and resolution of potential issues and helped preserve the viability and reliability of the system. Additionally, the results highlighted the importance of developing ongoing training programs in support of the human aspect of using the system. Due to the different levels of technical ability and user responsibilities, training programs had to be customized to meet the needs of individual users.

Ongoing training and development programs provided employees with the skills necessary to fully utilize their system, and therefore, continuous learning assisted users in keeping abreast with new functionalities and best practices associated with their systems so that they could properly use them to successfully perform day-to-day job functions. Further, continuing support reduced the disparity between existing technology and how it was used, and therefore enabled employees to consistently and efficiently use technology within their daily work processes.

Establishing training programs helped foster an organizational culture that was dedicated to developing and adapting. When employees developed a culture centered on learning, they had a greater propensity to accept new technologies and improvements. As such, it created an environment in which all employees were encouraged to identify more efficient methods of completing their work, resulting in increased productivity across departments and more efficient processes. As a result, the university was able to operate as a more cohesive and dynamic organization capable of meeting the evolving demands of its environment.

Investing in the technical skills of the staff allowed for better decision-making at all levels. When employees were trained on the data available within and the functionality of systems, they had a broader basis to analyze data and make decisions based on a more informed understanding of the data available.

Therefore, improving the technical skills of employees ultimately improved overall institutional performance because it created a foundation for making informed decisions, giving the institution the ability to achieve its mission and goals in the long term.

Table 3.
System Quality

Elements	Indicator	Mean	Interpretation
Reliability	The information system performs the order right the first time.	4.26	Strongly Agree
Usability	Relevant order confirmation details are sent to the user.	4.26	Strongly Agree
	I always do my job using the information system.	4.22	Strongly Agree
Adaptability	I find the information system is available and flexible to be used.	4.30	Strongly Agree
	It is easy for me to become skillful at using the information system.	4.37	Strongly Agree
	I find the information system is easy to use.	4.34	Strongly Agree
Trust	The information system usually fulfils the commitments it assumes.	4.28	Strongly Agree
	Security privacy policies are accessible	4.24	Strongly Agree
Maintainability	The information system is up-to-date.	4.31	Strongly Agree
	The information system is easy to maintain.	4.22	Strongly Agree
OVERALL MEAN		4.28	Strongly Agree

Legend: 4.20-5.00 - *Strongly Agree*
 3.40-4.19 - *Agree*
 2.60-3.39 - *Neutral*
 1.80-2.59 - *Disagree*
 1.00-1.79 - *Strongly Disagree*

3.2. Stakeholders' Satisfaction on Information Quality

The effectiveness of an MIS was greatly affected by the quality of its information, which had a major impact on effective decision-making processes and operational efficiency. Evaluating information quality included analyzing whether the system provided comprehensive, understandable, secure, accessible, and, most importantly, consistent and accurate information. High-quality information gave users the ability to easily trust the system outputs, operate effectively with them, and improve system effectiveness and user satisfaction in general.



According to Table 4, users were very satisfied with the MIS module's information quality. All respondents agreed that the output of information was complete and met their needs. It was also agreed that all respondents found it easy to understand the output and that it was easy to find information from the MIS modules. Users also indicated a high level of confidence in the security of the information produced by the MIS modules and believed that the MIS modules provided reliable and secure information. The availability of the MIS modules also scored high. Users agreed that it was easy to access the information needed, and accuracy was rated highly by the users, indicating that the MIS modules provided users with accurate and error-free data.

The high quality of information indicated through the DeLone/McLean Data Quality Model supported both the use of the system and the satisfaction of the users, as both were critical in driving forward TAM, the perception of usefulness, and encouraging the adoption of the information system. The high quality of information provided a trusted basis for the University to use as part of its decision-making process. The university should continue to conduct regular assessments and improvements of this critical factor through systematic data quality audits, securing the quality of the organization's information, and providing specific user training to ensure optimal interpretation and use of the data.

Table 4.*Information Quality*

Elements	Indicator	Mean	Interpretation
Completeness	The output information of the information system is complete.	4.32	Strongly Agree
	The information system provides information precisely according to my need.	4.36	Strongly Agree
Understandability	The output information of the information system is easy to understand	4.27	Strongly Agree
	It is easy to find what you're looking for when using the information system.	4.31	Strongly Agree
Security	The output information of the information system is secure.	4.27	Strongly Agree
	Overall, I trust the information system's security measures.	4.28	Strongly Agree
Availability	It was easy to find what you were looking for.	4.30	Strongly Agree
	The information system allows information to be readily accessible to me.	4.36	Strongly Agree
Accuracy	The information provided by the information system is accurate and is free from errors.	4.31	Strongly Agree
	The information system provides the precise information I need.	4.32	Strongly Agree
OVERALL MEAN		4.31	Strongly Agree

Legend: 4.20-5.00 - Strongly Agree
 3.40-4.19 - Agree
 2.60-3.39 - Neutral
 1.80-2.59 - Disagree
 1.00-1.79 - Strongly Disagree

3.3. Stakeholders' Satisfaction on Service Quality

In an MIS, Service Quality illustrated how well the capability of the system integrated the technology information to the priorities of the institution, especially with regard to meeting stakeholders' needs for satisfaction, operational resilience, and equitable resource allocation in



an environment where resources were scarce. Service Quality was one of the most important components as it focused on the user experience beyond technical or system functionality, and provided an understanding of how well a MIS supported the daily work demands of its users, and how well it met their expectations. Service quality was assessed through five key indicators: availability, reliability, integrity, functionality, and efficiency.

Using the findings from Table 5, the vast majority of users indicated that they had high levels of satisfaction with the service received from using the system and agreed with each of the evaluated service quality measures perceived by the users. Users rated that they could navigate and access the system easily; that the system was capable of performing tasks accurately; and that the system confirmed transactions to the user shortly after they were successfully completed. These high ratings indicated how well the system met the needs of all users, and particularly for students, who were a major portion of the users and relied upon the MIS for their enrollment activities.

The high level of service quality associated with user satisfaction contributed to continued usage. This supported the value of the system in supporting university operations based upon the DeLone & McLean IS Success Model. Also, from the TAM point of view, if the system was reliable and easily accessible, then the user perceived the system as being helpful and easy to use. These factors were important for technology adoption. In terms of benefits to management, the efficiencies associated with using the system were significant; therefore, the system streamlined administrative procedures, lowered the administrative workload, and increased overall productivity.

Table 5.*Service Quality*

Elements	Indicator	Mean	Interpretation
Availability	It was easy to find what you were looking for.	4.30	Strongly Agree
	The information system allows information to be readily accessible to me.	4.36	Strongly Agree
Reliability	The information system performs the order right the first time.	4.26	Strongly Agree
	Relevant order confirmation details are sent to the user.	4.26	Strongly Agree
Integrity	The information received from the information system is adequate.	4.25	Strongly Agree
	It is easy for me to fine find out and get the desired information.	4.31	Strongly Agree
Functionality	The information system in use is always up to date.	4.25	Strongly Agree
	The information system provides customized operations.	4.29	Strongly Agree
Efficiency	Using information system in my job would enable me to accomplish tasks more quickly.	4.34	Strongly Agree
	By using the functions of the information system, I can upgrade the efficiency of my work.	4.29	Strongly Agree
OVERALL MEAN		4.29	Strongly Agree

Legend: 4.20-5.00 - *Strongly Agree*
 3.40-4.19 - *Agree*
 2.60-3.39 - *Neutral*
 1.80-2.59 - *Disagree*
 1.00-1.79 - *Strongly Disagree*

3.4. Stakeholders' Satisfaction on Management Supports

The effective implementation and ongoing utilization of the Management Information System was contingent upon support from management through the provision of leadership that continuously promoted the usage of the Management Information System, addressed challenges

to the usage of the system, and allocated resources necessary for continuous improvements of the system.

Respondents' responses to questions associated with management support related to the Management Information System were overwhelmingly similar as indicated in Table 6. Respondents concurred that leadership was proactive in encouraging employees' usage of the MIS and acknowledged the value of the system in achieving the organization's goals. Respondents perceived that management endorsed the MIS and fostered a culture that valued the use of technology to support the university's objectives. Respondents also concluded that management supported both in principle and in practice by responding to problems associated with the use of the Management Information System.

The results suggested that users believed management was attentive to resolving issues and provided the necessary resources for system enhancement. Linking these findings to established theoretical frameworks, strong management support aligned with the DeLone and McLean IS Success Model, where organizational support directly influenced system success and user satisfaction. University leaders should continue communicating with the users of their systems on an ongoing basis. To do this, they needed to allocate an appropriate amount of funding for periodic system upgrades and invite various users to help make decisions about those upgrades. These efforts, as well as exchanging information and ideas with other state universities about how to successfully use or apply the MIS, may ultimately help develop and enhance the various management techniques used to support the various information systems.

Table 6.

Management Supports

Elements	Indicator	Mean	Interpretation
Management support	The management encourages using the system and appreciates the optimal use of the system to meet its goal.	4.34	Strongly Agree
	The management discusses problems regarding the system and provides all necessary resources to improve it.	4.30	Strongly Agree
OVERALL MEAN		4.32	Strongly Agree

Legend: 4.20-5.00 - *Strongly Agree*
 3.40-4.19 - *Agree*
 2.60-3.39 - *Neutral*
 1.80-2.59 - *Disagree*
 1.00-1.79 - *Strongly Disagree*

3.5. *Stakeholders' Satisfaction on Trainings*

The successful use and ongoing success of the MIS depended on a well-planned training program. By training users in the proper use of the system, they had acquired the necessary competency to use the system effectively. As part of this project for Partido State University (ParSU), indicators such as content relevance and materials availability were used to determine the effectiveness of training programs provided by the institution. Table 7 provided an overview of participant perceptions of the training program. The data demonstrated that participants held a favorable opinion of the training they received and believed the training had improved their ability to use the information system effectively.

Analysis of survey responses suggested an overwhelming level of agreement among respondents that they had received training sessions relevant for them to be able to utilize the MIS application(s) from the university effectively. The majority of respondents rated positively, on a five-point scale, both the quantity and accessibility of training materials provided during their training sessions; these ratings further indicated an organizational commitment to provide adequate resources to support the learning experience of users. The positive responses also indicated that the MIS training programs were available and met the training requirements for user groups to efficiently use the systems.

These results were related to the theory of perceived ease of use and perceived usefulness TAM, as through high-quality training, users were able to use the system efficiently and effectively. Therefore, user acceptance and satisfaction were enhanced by providing high-quality training. Lastly, the manner in which training was delivered supported adaptive capability based on recommendations in CAS, thus enabling the university to meet changing technological demands in the future. To further enhance training ability, it was recommended that the university regularly revise training materials to ensure they remained current with system improvements and changing user needs.

Table 7.

Trainings

Elements	Indicator	Mean	Interpretation
Training	Organization offers training programs regarding information system application	4.34	Strongly Agree
	Training material is available during training	4.30	Strongly Agree
OVERALL MEAN		4.26	Strongly Agree

Legend: 4.20-5.00 - *Strongly Agree*
 3.40-4.19 - *Agree*
 2.60-3.39 - *Neutral*
 1.80-2.59 - *Disagree*
 1.00-1.79 - *Strongly Disagree*



3.6. *Stakeholders' Satisfaction on User Involvement*

User participation in the design, implementation, and continued usage of a Management Information System was generally accepted as a key element in the success of such systems. The overall score of participants indicated a very low level of engagement when making decisions relating to how data could be entered into and displayed in the MIS. The lack of user engagement in these areas strongly indicated a complete breakdown in the development of the Management Information System and how involved users were in the process.

The very low amount of user input required further investigation into potential reasons why this was the case. It was possible that the end-users were not properly consulted when the system was first developed and designed, resulting in a system that did not meet the practical needs of its users. It was also possible that there were no effective communication channels in place (i.e., due to a top-down management style) during the entire process of co-designing the system, thus reducing the opportunity to co-design the system.

Additionally, lack of, or poor quality, training on the use of the system and/or feedback processes might also have reduced users' perception of their level of involvement because they did not have the training necessary to feel that they had a voice in the process. Furthermore, the absence of structured, easily accessed feedback mechanisms might have contributed to low levels of user input, as users may have felt that their input had not been requested and/or valued, thus discouraging them from actively participating in the process.

Because of low user involvement, there was reduced effectiveness for the Management Information System (MIS). While it was of high quality, it may not have adequately fulfilled users' practical needs, which could have caused them to be dissatisfied with, or underutilize, the Management Information System. Thus, this lack of involvement was inconsistent with the constructs within the Technology Acceptance Model (TAM), which emphasized the importance of perceived ease of use in addition to perceived usefulness, both of which could often be improved through the involvement of end-users. In addition, this lack of user involvement was not consistent with the assumptions of Complex Adaptive Systems theory, which stressed that systems were enabled to adapt to their dynamic organizational environment through input by stakeholders.

The more users had the ability to provide input and were listened to, the more valuable and easier to use the information system became. Providing users with opportunities to provide input to the information system was critical to ensuring that features and functions of the information system supported everyday operations and provided features and functions that may have otherwise been overlooked. When users were involved in the development of the information system, they developed a greater understanding and appreciation for the way an information system worked, thus making it easier for them to use it in practice. Users would not have challenges while using tools that did not work as they should; rather, they would have a system that helped them do their work quickly and easily, creating a better and more productive experience. In the end, these efforts resulted in greater participation and cooperation from everyone. When employees felt included and appreciated, they were more willing to accept change and take full advantage of the system. Having a strong bond between the information technology team and the end users also enhanced the rate of continuous improvement efforts.

Therefore, the Management Information System (MIS) represented more than a technical necessity; it was an effective tool that brought measurable value to the organization and helped ensure that the Management Information System (MIS) continued to make a positive contribution for years.

Table 8.

User Involvement

Elements	Indicator	Mean	Interpretation
User	Im involve in input design	1.00	Strongly Disagree
Involvement	Im involve in output design	1.00	Strongly Disagree
OVERALL MEAN		1.00	Strongly Disagree

Legend: 4.20-5.00 - *Strongly Agree*
 3.40-4.19 - *Agree*
 2.60-3.39 - *Neutral*
 1.80-2.59 - *Disagree*
 1.00-1.79 - *Strongly Disagree*

3.7. *Stakeholders' Satisfaction on Perceived Usefulness*

An important aspect that affected the way in which someone accepted or continually utilized a Management Information System (MIS) was based on what they believed to be useful about the system in helping them improve their job performance, job effectiveness, and job productivity. The amount of trust placed in the system by users and their assessment of possible risks of using the system had an impact on perceived usefulness.

Table 9 provided insight into the positive perspective of Management Information Systems (MIS) as seen by the users of these systems. Users perceived that Management Information System had a positive impact on their job performance, job effectiveness, and job productivity. Users also believed that Management Information System met their individual goals and therefore was aligned with their respective interests while being mindful of risk.

Further, trust in the commitments of Management Information System was similarly rated with a high degree of satisfaction. Access to Management Information System, however, had a lower level of satisfaction, indicating that communication regarding the privacy and security policies of the system could have been clearer and more visible. Providing increased transparency regarding the privacy and security policies could have served to increase user trust in the system and therefore contributed to the ongoing success of the system.

Additionally, the findings supported the Technology Acceptance Model (TAM), which identified perceived usefulness as a primary factor influencing the intentions and behavior of



users. Similarly, the findings supported the DeLone and McLean Systems Success Model. In summary, the University should have strengthened communication regarding privacy and security issues and continued to align Management Information System (MIS) functions with user goals and expectations.

Users consistently rated the ability of the information system to provide them with real benefit as a major reason for acceptance of the use of the system in their work. In addition, agreement was very high that users felt low levels of perceived risk, leading users to feel confident in the system's safety and reliability, which was necessary for future use. However, users rated the accessibility of the privacy and security policies of the system significantly lower than the other variables, demonstrating an opportunity for improved communication regarding the privacy and security policies of the system and enhancing users' trust in the system. As users built more trust in each other, their willingness to continue using the system also grew, which closely mirrored the TAM; specifically, the study's results indicated that perceived usefulness was the primary driver for users stated intentions to use the system and their actual behaviors on the platform. From the perspective of the DeLone and McLean Model, the perceived value of the system was also shown to have a strong impact on user satisfaction and operational success, thus supporting that practical benefits are central to how a solution is received and used.

The university recognized that it would need to take a number of steps going forward to continue to capitalize on these positive results. First, the university needed to develop and deliver more effective, clearer, and more consistent communications relative to the privacy protections and security protocols that are part of the system, in order to eliminate any remaining doubts/concerns users may have had. It was also essential to have ongoing refinement of the system by the university so that its functionality remained up to date with the requirements and expectations of users to keep the system relevant, usable, and advantageous for all users. Having regular updates with sufficient fine-tuning allows for high engagement and satisfaction of all uses of the system. Ongoing improvements also contribute to confidence in the system and support its future success at the university.

Table 9.*Perceived Usefulness*

Elements	Indicator	Mean	Interpretation
Performance	Using information system would improve my job performance.	4.30	Strongly Agree
	Using information system would make it easier to do my job.	4.31	Strongly Agree
Effectiveness	Using information system will enhance my effectiveness on the job.	4.35	Strongly Agree
	I can easily use the functions of the information system to do my work.	4.29	Strongly Agree
Productivity	I believe that using the information system will further increase my productivity.	4.29	Strongly Agree
	I have fully accepted the information system in my daily work.	4.27	Strongly Agree
Perceived Risk	I think that the information system is concerned with the present and future interests of its users.	4.30	Strongly Agree
	I think that the information system takes into account the repercussions that their actions could have on the users.	4.30	Strongly Agree
Trust	The information system usually fulfils the commitments it assumes.	4.28	Strongly Agree
	Security privacy policies are accessible	4.24	Strongly Agree
OVERALL MEAN		4.29	Strongly Agree

Legend: 4.20-5.00 - *Strongly Agree*
 3.40-4.19 - *Agree*
 2.60-3.39 - *Neutral*
 1.80-2.59 - *Disagree*
 1.00-1.79 - *Strongly Disagree*

3.8. Stakeholders' Satisfaction on Perceived Ease of Use

The user's acceptance of a MIS and their ongoing utilization of the Management Information System was greatly affected by how simple or uncomplicated the user perceived the MIS to be. In addition to how easy the user perceived it to be, users determined whether they were able to quickly learn to utilize the system's functions, engage with the system for its intended purpose, and incorporate it into their everyday working routine. Furthermore, the analysis of the user's perception of ease of use involved both quantitative and qualitative information that provided a true and objective picture of the user's experience with the MIS and included the ethical consideration of developing and implementing a system that was designed to

provide access to all users from various backgrounds and did not unduly influence the user's decision or process; therefore, allowing the user to be independent and satisfied.

In Table 10, study results regarding user-friendly characteristics showed that agreement had been reached with each item within the study. Therefore, users had a high level of confidence and ability to use the system effectively. These results suggested that the MIS was effectively designed to support users in performing their tasks efficiently and with minimal difficulty, which likely contributed to its positive reception and sustained use.

Ease of use ranked as one of the least agreeable features among survey respondents. However, the fact that a majority of the survey respondents agreed indicated that most users had not fully incorporated the system into their everyday use. This may have been affected by many organizational and cultural factors that hindered how easily users integrated technology into their daily workflows. It was recommended that the university provide additional inventories of the systems, promote the overall benefits associated with utilizing the technology, and develop policies or programs to assist users in regularly utilizing the systems through the use of incentives.

Table 10.

Perceived Ease of Use

Elements	Indica	Mean	Interpretation
Easy to learn	Learning to operate the information system is easy for me.	4.28	Strongly Agree
	Learning to interact with the information system is easy for me.	4.31	Strongly Agree
Easy to manage	I find it is easy to get the information system to do what I want it to do.	4.31	Strongly Agree
	I feel that the information system constitutes an integral part of my daily work.	4.24	Strongly Agree
Self-efficacy	The information system is characterized by the frankness and clarity of the services that it offers to the user.	4.30	Strongly Agree
	It is easy for me to become skillful at using the information system.	4.29	Strongly Agree
Simplicity	Interacting with the system is a clear and understandable process.	4.27	Strongly Agree
	The system is simple to use.	4.29	Strongly Agree
Compatibility	Information system contains necessary topics to complete related task.	4.30	Strongly Agree
	The information system provides sufficient information.	4.30	Strongly Agree
OVERALL MEAN		4.29	Strongly Agree



Legend: 4.20-5.00 - *Strongly Agree*
3.40-4.19 - *Agree*
2.60-3.39 - *Neutral*
1.80-2.59 - *Disagree*
1.00-1.79 - *Strongly Disagree*

3.9. *Stakeholders' Satisfaction on Behavioral Intention*

The concept of behavioral intention pertained to a user's likelihood of using a Management Information System (MIS) in the future. The factors that influenced behavioral intention included personalization, interactivity, time to respond, avoidance of uncertainty, and frequency of transaction. Personalization and interactivity were critical in providing users with a feeling that the MIS was relevant and trustworthy. A fast time to respond diminished any friction that may have inhibited the user from continuing to use the Management Information System.

As shown in Table 11, user perceptions of behavioral intention were generally positive and were rated positively across various criteria. Regarding communications via personalization, strong agreement was shown that the Management Information System understood how to accommodate user needs and had been designed to meet those needs. This indicated that Management Information System functions had been adequately modified to meet individual user requirements, thereby contributing to a positive user experience. Interactivity also received high ratings as it related to the flexibility of the MIS system and convenience of accessing information. The aforementioned ratings indicated that users viewed the Management Information System as both interactive and responsive. The efficient response time also enhanced the user experience, as evidenced by the speed at which the user could scroll and retrieve information.

Even though there were overall positive evaluations based on the Technology Acceptance Model, one of the lowest scores identified was that of the scale measuring uncertainty avoidance. Given the score's value, the implication was that there was an increasing level of concern with regard to the system's ability to prevent the dissemination of false or misleading information, indicating a continuing need for improvement in the verification and validation of data accuracy and reliability. The assurance of data accuracy and reliability was critical to maintaining the trust that users had in this system and the confidence users had in its use. Overall, the strong scores associated with personalization, interactivity, and response time implied an overall system that, according to these measures, promoted positive behavioral intentions and repeated use.

According to TAM there was a positive relationship between the level of perceived ease-of-use and the perceived usefulness of the system that facilitated the user's willingness to implement as well as utilize the system for its intended purpose. The relationship identified in this study was a direct correlation between ease of use and perceived usefulness. As the user perceived the system as easy-to-use, he/she also perceived the system as being more useful which, in turn, had a direct impact on the user's intention to consistently utilize the system and behave in a manner consistent with the purpose of the system. The information generated from CAS also described that in large, complex organizations the need for a system to remain flexible and reliable is critical to sustain effectiveness over time. The information also indicated that a

rigid system would have difficulty keeping pace with an organization's ever-changing dynamics and that adaptive, reliable platforms are much more capable of meeting an organization's changing needs and creating a seamless operation.

Consequently, based on the findings of this study, the university was provided guidance in establishing a comprehensive data validation process that would promote accuracy and consistency in the overall operation of the system. Although the university administrator were advised to design processes that included checks and controls to reduce errors and improve the quality of the information processed, they were also strongly encouraged to clearly communicate the reliability levels of the system to the potential users so that the users understood both the strengths and weaknesses of the system and the controlling measures established to safeguard the quality and reliability of the system outputs.

Table 11.

Behavioral Intention

Elements	Indicator	Mean	Interpretation
Personalization	I think that the information system knows its users well enough to offer them products and services adapted to their needs.	4.31	Strongly Agree
	I think that the design of the information system take into account the desires and needs of its users.	4.34	Strongly Agree
Interactivity	I find information system to be flexible to interact with.	4.25	Strongly Agree
	I can interact with the information system and receive the required information.	4.31	Strongly Agree
Response time	Scrolling through system's menus is kept to minimum.	4.28	Strongly Agree
	The system provides fast information access.	4.28	Strongly Agree
Uncertainty avoidance	The information system design makes finding information easy without mistakes.	4.22	Strongly Agree
	The information system does not make false statements.	4.19	Agree
Number of transactions executed	If I could, I would like to continue using the information system as much as possible.	4.32	Strongly Agree
	I recommend using the information system to others.	4.28	Strongly Agree
OVERALL MEAN		4.28	Strongly Agree



Legend: 4.20-5.00 - *Strongly Agree*
3.40-4.19 - *Agree*
2.60-3.39 - *Neutral*
1.80-2.59 - *Disagree*
1.00-1.79 - *Strongly Disagree*

3.10. *Quality of Stakeholders' User Satisfaction*

User satisfaction was critical to measuring the overall performance and long-term viability of any Management Information System, as ultimately, a high degree of user satisfaction demonstrated how well the system met user needs and expectations. A greater understanding of these user satisfaction factors led to insightful findings into the extent to which system design resulted in creating a positive user experience, leading to increased levels of continued usage and decreasing the likelihood of users experiencing frustration or risk, which may have led to a lack of long-term adoption of the MIS. As illustrated in Table 12, user satisfaction levels of the MIS modules at ParSU were substantially above average, with users reporting corresponding levels of agreement for each of the satisfaction category measures.

In addition, providing users with a system that was easy for them to use and navigate gave users greater confidence to use the system effectively and increased their self-efficacy. Users who had utilized the MIS in the past and experienced positive prior experiences typically had greater motivation to continue using an Management Information System and were able to maintain their level of use over an entire life cycle. These results were in agreement with other well-established theories relating to user satisfaction as a main result of two different factors in utilizing TAM. In addition, the DeLone & McLean IS Success Model indicated that using both high-quality systems and high-quality information were also important contributors to user satisfaction and continued usage. Users evaluated the system's personalized and risk management features positively, thus supporting the use of a user-centered design approach, which emphasized meeting varied user requirements while reducing the potential for uncertainty. The recommended way to sustain and enhance these strengths was to maintain the current level of user involvement by developing an organized feedback mechanism, continuing to develop and improve personalized features.

Table 12.

User Satisfaction

Elements	Indicator	Mean	Interpretation
Self-efficacy	The information system is characterized by the frankness and clarity of the services that it offers to the user.	4.30	Strongly Agree
	It is easy for me to become skillful at using the information system.	4.29	Strongly Agree
Repeat visits	The frequency of use with the eServices website system is high.	4.26	Strongly Agree
	I am satisfied with my previous online transaction experience.	4.26	Strongly Agree
Personalization	I think that the information system knows its users well enough to offer them products and services adapted to their needs.	4.31	Strongly Agree
	I think that the design of the information system take into account the desires and needs of its users.	4.34	Strongly Agree
Perceived Risk	I think that the information system is concerned with the present and future interests of its users.	4.30	Strongly Agree
	I think that the information system takes into account the repercussions that their actions could have on the users.	4.30	Strongly Agree
Enjoyment	I am pleased with the experience of using information system.	4.37	Strongly Agree
	I am very satisfied with the information I receive from the information system.	4.32	Strongly Agree
OVERALL MEAN		4.31	Strongly Agree

Legend: 4.20-5.00 - *Strongly Agree*
 3.40-4.19 - *Agree*
 2.60-3.39 - *Neutral*
 1.80-2.59 - *Disagree*
 1.00-1.79 - *Strongly Disagree*

3.11. Strategic Plans for Improving Public Administration

The findings presented in Table 13 indicated that the Management Information System (MIS) of Partido State University (ParSU) achieved considerable success across multiple dimensions. The number of positive ratings attributed to the areas of management support,



information quality, and user satisfaction suggested that the system was effectively integrated into managerial workflow, provided timely and up-to-date information, and successfully met the users' expectations. The perceived service quality, perceived usefulness, perceived ease of use, and behavioral intentions toward the system combined to further highlight the value of the system. In essence, users found the system to be of value, easy to use, and they exhibited a desire to continue using it in the future. Together, these strengths formed a strong foundation for the Management Information System (MIS) to improve decision-making and operational efficiency across the university.

The research revealed that the very low mean of user involvement resulted in a high degree of disagreement among respondents. Such low levels of user involvement may have affected users' likelihood of resistance to use the Management Information System MIS users' likelihood of maximizing usage, and, ultimately, the Management Information System functionality not meeting users' needs. Though system quality and users' proficiency were rated positively, their ratings were lower than those of the other dimensions; thus, these areas presented opportunities for improvement. In order to maximize the potential of the Management Information System, indicators of these deficiencies had to be addressed and aligned with institutional objectives.

To increase the efficiency of any system, it was important to prioritize the use of all available intervention strategies to increase user involvement through methods such as participatory design, regular consultations, and systematic feedback mechanisms; the understanding being that effective use of a Management Information System would depend on the quality of training. Therefore, with the design of training programs that were comprehensive, relevant, customized, and designed to help users develop their skills, users would be able to become proficient and self-assured in their use of the Management Information System. At the same time, it was necessary to maintain and build on the strengths of the support and quality of information received from management while addressing any technical or performance problems existing within the system that had the potential to reduce the quality of the Management Information System program. Through implementation of the strategies discussed above, Partido State University would be able to fully utilize its Management Information System (MIS) as a critical support system for improving administrative efficiency, increasing service delivery, and supporting the effectiveness of the overall institution.

Develop a Management Information System (MIS) Strategic Plan before implementing technology to improve the efficiency and effectiveness of the organization's operations and decision-making. The critical goals and initiatives outlined in the plan can enable the success of the Management Information System and may serve as a framework for the future use of Management Information System technology by the institution. The critical goals of the Management Information System Strategic Plan include increasing the reliability, security, and ease of use of the system; developing user competence; and integrating the use of the Management Information System into daily business processes. Each of the action items in this plan supports a comprehensive and progressive approach to managing information systems and provides for the assignment of responsibilities and expected outcomes from the achievement of the goals outlined in the plan.



The improvement and maintenance of the reliability, accuracy, security, and usability of the Management Information System are some of the key objectives of the Management Information System Strategic Plan. For example, the usability of the Management Information System can be rated according to the feedback received from end users, preventive maintenance can be performed to maximize system availability, assurance of data quality can be maintained to ensure that the institution's data are accurate and reliable, and ongoing improvement can be conducted through regular audits and performance testing. Typically, these projects are coordinated by the Information and Communication Technology Unit (ICTU) and may rely on end users to provide assistance and feedback for usability, as well as to participate in the testing of the Management Information System. By focusing on these areas, the University can develop a reliable and consistent source of data for both administrative and academic purposes.

The involvement of end users in the design and implementation of the Management Information System is vital to the overall success of the Management Information System Strategic Plan through user competence, ownership, and participation. The involvement of end users may include an active role in design, the establishment of user advisory committees, the provision of a comprehensive training program, and the establishment of well-organized mechanisms for soliciting user feedback. User advisory committees consist of end users as appointed by the University President and the Vice President for Administration and Finance (VPAF) are established to ensure the involvement of end users in the decision-making process for the Management Information System. In addition, the Human Resource and Management Unit (HRMU) and Information and Communication Technology Units (ICTU) work together to provide training and periodic refresher training for end users based on their respective responsibilities. By encouraging user involvement in the design and implementation of the Management Information System, the University can ensure that the Management Information System meets user requirements and continues to be improved through the use of user feedback.

Finally, in order to maximize the Management Information System as a strategic unit, it must be integrated into the daily workflow of both the academic and administrative functions of the institution. To achieve this, there must be alignment between the work being performed and the redesign of administrative processes to align with the Management Information System, as well as the implementation of change management to drive system adoption and monitoring of performance, ensuring data-driven decision-making.

The Quality Assurance Office (QAO), the Information and Communication Unit, and the University Registrar have collaborated to develop maps for administrative processes to align with the Management Information System functions. In addition, the Human Resource and Management Unit (HRMU) can conduct awareness campaigns that promote the benefits of the system. Ultimately, the goal is to have a seamless integration of the Management Information System into the operating procedures of the institution, to minimize resistance to change, and to promote a culture of data-driven accountability and leadership throughout the institution.

The creation of a culture of data-driven accountability and leadership can be supported by effective performance monitoring that ensures that decision-making is based on data and that sufficient change management initiatives are implemented to encourage adoption of the system, in addition to strategically redesigning administrative processes to align with the Management

Information System. Awareness campaigns may be coordinated by the Human Resource and Management Unit (HRMU) in order to promote benefit realization of the system. The Quality Assurance Office (QAO) may also participate with the Information and Communication Technology Units (ICTU) and University Registrar's Office (URO) in creating maps to identify how administrative processes align with the functions of the Management Information System (MIS). The overall objective is to integrate the Management Information System seamlessly into the operations of the institution, mitigate resistance to change, and promote a culture of data-driven accountability and leadership within the institution.

Table 13.

Dimensions of Management Information System Success

Indicators	Mean	Verbal Interpretation
Managements Supports	4.32	Strongly Agree
Information Quality	4.31	Strongly Agree
User Satisfaction	4.31	Strongly Agree
Perceived Usefulness	4.29	Strongly Agree
Perceived Ease of Use	4.29	Strongly Agree
Behavioral Intention	4.29	Strongly Agree
Service Quality	4.29	Strongly Agree
System Quality	4.28	Strongly Agree
Training	4.26	Strongly Agree
User Involvement	1.0	Strongly Disagree

Legend: 4.20-5.00 - Strongly Agree
 3.40-4.19 - Agree
 2.60-3.39 - Neutral
 1.80-2.59 - Disagree
 1.00-1.79 - Strongly Disagree

4. FINDINGS

4.1. *Objective 1: Level of Stakeholders' Satisfaction of Management Information System (MIS) of a Public State University.*

1. Respondents were very supportive of positive statements about the following attributes of the Management Information System (MIS): management support; the quality of information; the quality of systems; and training. This would indicate a generally positive impression of the MIS on the part of respondents. Respondents believed that the MIS had received the necessary support from the administration, met their expectations in terms of quality and usability, and provided them with reliable



information. Respondents also had a positive impression of the training they received for basic use of the Management Information System, which leads to the conclusion that they felt adequately prepared to use the Management Information System. The fact that there was such a high level of agreement across a number of different dimensions indicated that the Management Information System had effective moving parts.

2. The user involvement score was very low; this meant there was significant disagreement about the level of user participation in decision-making and user participation in the system development and updating process. The score represented a significant area of concern; users believed they had been excluded from the major processes surrounding the Management Information System.
3. The indicators of management support, quality of information, and quality of service, as well as the training of users in these areas, had similar and clustered results. The similarity of these results indicated that the system as a whole had strengths across several different dimensions and that the system was well designed and implemented. The high level of variance in user involvement indicated the need for some urgent focus for improvement without changing or affecting the high level of positive evaluation of all the other components of the system.

5. CONCLUSION

1. Overall, the level of agreement on most of the metrics was strong enough to show that the majority of users had a positive view of the Management Information System (MIS). Most users found the system to be useful, easy to use, and to provide quality support and information. A strong positive response from end users helped facilitate continued user satisfaction and system sustainability. Hence, the system successfully accomplished its goals with respect to its intended use while also meeting the minimum requirements of end users.
2. There was a huge separation between user involvement and system engagement strategy due to a very low user involvement score. Although other areas of the system did have strengths, the lack of a participatory manner (participation in decision-making and providing feedback) from users regarding requirements also had a substantial impact on new ideas and the system's ability to change quickly enough to meet users' changing requirements. With a lack of users providing input or being involved, there may have been problems with the continued use and adaptation of the system.
3. High marks for satisfaction and quality existed; however, user participation was at an unsatisfactory level, indicating significant untapped capability of the Management Information System. Better user engagement may open up potential for additional enhancement and innovation that can improve the overall performance of the system, as well as the level of satisfaction and acceptance of the system itself. A more systematic method for incorporating user feedback and suggestions may help ensure the successful



evolution of the system, improve acceptance of new features, and reduce barriers to continued use.

6. RECOMMENDATIONS

1. Create structured opportunities for users to give suggestions, comments and feedback. These include things such as (but not limited to) regular surveys, user advisory committees, user participation in workshops and open forums for users to provide input. Empowering the user and making them believe their input is wanted can create a stronger collaboration with the user and the system managers and create more insights and better motivation.
2. Conducting qualitative research is an effective way to determine what prevents user participation in your process. There could be a lack of communication between you and the users, or there could be some other elements that create limitations on how much the users can participate. In order to successfully develop interventions, you will need to know what these types of barriers are.
3. Concentrate on investing in a strong (i.e., the MIS) to have a strong foundation to build future development and continued satisfaction for the user in areas such as management support, training programs, quality of information, and systems improvements.
4. Expand and modify training programs to provide a broader range of material than just basic operating procedures so that they include how to provide useful feedback and be involved in systems improvement activities. Tailor the various training methods used for each group of users to ensure relevance and effectiveness.
5. To improve the user experience on technology-based systems and the technology support for those systems. While usability is rated among the highest-rated aspects of service, efforts should be made to continue to enhance usability through the ongoing evaluation of user feedback and suggestions. In addition, provide adequate technical support to ensure that users receive prompt and adequate assistance with any problems they encounter.
6. Implement clear, accessible, and responsive channels for users to report issues, suggest improvements, and share experiences. Crucially, ensure that feedback is acknowledged, acted upon, and communicated back to users.



7. STRATEGIC PLAN FOR MANAGEMENT INFORMATION SYSTEM (MIS) IN PUBLIC STATE UNIVERSITY

7.1. INPUT

The researchers conducted multi-dimensional evaluations of the Management Information System at a public state university with respect to multiple inputs of available research. These included reviewing the functionality of all available types of Management Information System, the technologies used, and the extent to which those technologies are integrated into various departments within the university as well as how they are governed by the institution's policies and administrative processes. Further, the researchers evaluated dimensions of functionality that currently exist within the Management Information System and gathered quantitative data from Management Information System stakeholders to better understand how they perceive and use the Management Information System and whether they view the Management Information System as contributing positively to their academic/administrative tasks. Taken together, these multiple inputs allowed researchers to assess the overall effectiveness and user acceptance of the Management Information System in the existing context of the workplace.

7.2. PROCESS

Data gathered was provided in a summary format; details can be found in the actual database of survey results. Data collection categories included questionnaires, other surveys (such as student/course ratings), administrative records, and school-level visitation records. The data collected from this Management Information System research project was useful for Management Information System research, administrative decisions about the Management Information System, and system enhancements that may directly benefit students. Based on the research and resulting data that were provided in this study, Management Information System research was useful for many areas of Management Information System, including curriculum planning, implementing new means of evaluation, and evaluating the overall effectiveness of the current Management Information System S. The Management Information System was used to measure and monitor whether implemented enhancements made to the university were meeting the goals determined by the administration as being in the best interest of the institution. The enhancement strategies used for implementation included, but were not limited to, curriculum development, initiating a new method of measuring student learning, as well as evaluating the present Management Information System. The enhancement strategies were used by the university to determine the effective use of resources and staff to effectively meet their objectives, as well as assess how well the enhancements were being implemented. The data collected from the MIS may also have been useful in determining other types of evaluation assistance for the university to support public administration.



7.3. *OUTPUT*

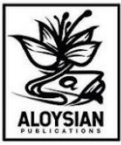
This study's results included a number of important findings that facilitated institutional improvement. The first major product was an assessment report that evaluated the Management Information System (MIS) at Partido State University (ParSU). This assessment report outlined a detailed evaluation of the MIS's strengths and weaknesses and concluded that, based on quantitative data provided by user feedback and performance analysis of the Management Information System, the assessment report provided a comprehensive diagnostic tool for the Management Information System. Specific and actionable recommendations to strengthen the Management Information System's operational efficiency and institutional decision-making were developed. The recommendations identified important gaps and challenges associated with the use of the Management Information System. The recommendations focused on strengthening the usability and reliability of the MIS and improving overall user satisfaction with the MIS. Finally, the study produced strategic plans for administrative process changes as a result of strengthening the implementation of the Management Information System. The strategic plans provided a roadmap for future development of the Management Information System. The strategic plan outlined a number of evidence-based initiatives, including training targeted at specific organizational units, upgrades to the Management Information System, and increasing user participation in Management Information System related decisions. By implementing the recommendations provided in this study, the university may be able to effectively leverage its technological resources.

REFERENCES

- Adobe Experience Cloud Team. (2023). Learn how to use the input-process-output (IPO) model. Adobe.com. <https://business.adobe.com/blog/basics/learn-about-the-input-output-model>
- Ahmad (2024), Assessment of effects in advances of accounting technologies on quality financial reports in Jordanian public sector, <http://m.growingscience.com/beta/uscm/6526-assessment-of-effects-in-advances-of-accounting-technologies-on-quality-financial-reports-in-jordanian-public-sector.html>
- Ahmad, M. A., Baryannis, G., & Hill, R. (2024). Defining complex Adaptive Systems: an Algorithmic approach. *Systems*, 12(2), 45. <https://doi.org/10.3390/systems12020045>
- Alduaij, M. Y., Alterkait, M. A., & Alainati, S. (2024). Using the Delone and McLean Success Model to Evaluate Moodle's Information System Success. *Engineering, Technology & Applied Science Research*, 14(4), 15008–15015. <https://doi.org/10.48084/etasr.7300>
- Alsabawy, Cater-Steel, and Soar (2021) https://www.researchgate.net/publication/286316612_A_Model_to_Measure_E-Learning_Systems_Success
- Alsyouf, A., Lutfi, A., Alsubahi, N., Alhazmi, F. N., Al-Mugheed, K., Anshasi, R. J., Alharbi, N. I., & Albugami, M. (2023). The Use of a Technology Acceptance Model (TAM) to Predict Patients' Usage of a Personal Health Record System: the Role of Security, Privacy, and Usability. *International Journal of Environmental Research and Public Health*, 20(2), 1347. <https://doi.org/10.3390/ijerph20021347>
- Bankole, F. O., Bankole, O. O., & Brown, I. (2024). Mobile Banking Adoption in Nigeria. *The Electronic Journal of Information Systems in Developing Countries*, 47(1), 1–23. <https://doi.org/10.1002/j.1681-4835.2011.tb00330.x>
- Berdik, D., Otoum, S., Schmidt, N., Porter, D., & Jararweh, Y. (2021). A Survey on Blockchain for Information Systems Management and Security. *Information Processing & Management*, 58(1), 102397. <https://doi.org/10.1016/j.ipm.2020.102397>
- Bright, A., & Asare, G. (2019). THE IMPACT OF MANAGEMENT INFORMATION SYSTEM ON UNIVERSITY OF EDUCATION WINNEBA, KUMASI CAMPUS-GHANA. *European Journal of Research and Reflection in Management Sciences*, 7(1). <https://www.idpublications.org/wp-content/uploads/2018/12/Full-Paper-THE-IMPACT->

OF-MANAGEMENT-INFORMATION-SYSTEM-ON-UNIVERSITY-OF-
EDUCATION-WINNEBA.pdf

- Canlas, F. (2019). Issues and Challenges of Free and Open Source Software Adoption in the Philippines: A Baseline Survey for Information Technology Strategy Formulation. The 4th International Conference on Organization and Management the 6th Corporate Social Responsibility (CSR), Ethics, Governance, and Sustainability. June 12-13, 2019. Abu Dhabi. United Arab Emirates: Abu Dhabi University. https://www.academia.edu/download/61253441/Ferddie_Canlas_-_Issues_and_Challenges_of_FOSS_Adoption_in_the_Philippines_Research_Gate20191118-56047-1cxax1t.pdf
- Davies, Business Information Systems. (2020). Google Books. <https://books.google.com/books?hl=tl&lr=&id=aB5HEAAAQBAJ&oi=fnd&pg=PP1&dq=%2Bmanagement%2Binformation%2Bsystem%2Bin%2Bpublic%2Bstatements%2Buniversity&ots=axM-Y7cfNu&sig=NUplK5A7rF9MUjw5YaGDCx83T3A>
- Diaz, A. G., Adrienne Denise Gumtang, Joy, C., Balagot, A. S., Villanueva, E. A., & Manalang, M. A. (2024). PHirecord: A Medical Record Management System for Rural Health Facilities in the Philippines. 188–193. <https://doi.org/10.1109/isici62787.2024.10668022>
- Dollado, R., Jr. (2022). Management Strategies and Practices of In-House Development and Outsourcing of Information Systems in Higher Education Institutions - A Case in Samar, Philippines. *American Journal of Agricultural Science, Engineering, and Technology*, 6(1), 34–41. <https://doi.org/10.54536/ajaset.v6i1.199>
- Dunzer, S., Stierle, M., Matzner, M., & Baier, S. (2020). Conformance checking. <https://doi.org/10.1145/3329007.3329014>Dunzer, Stierle, Matzner, and Baier (2020) <https://arxiv.org/abs/2007.10903>
- Enrique, D., Marie, K., Kathleen, R., & Emmanuel, R. (2024). Mobile Accounting Information Systems Adoption of Micro Businesses in Laguna, Philippines: Integration of TAM and TOE Approach. 4, 324–329. <https://doi.org/10.1145/3670013.3670030>
- Garcia, A. P., de la Vega, S. A. F., & Mercado, S. P. (2021). Health Information Systems for Older Persons in Select Government Tertiary Hospitals and Health Centers in the Philippines: Cross-sectional study (Preprint). *Journal of Medical Internet Research*, 24(2). <https://doi.org/10.2196/29541>



- Glaser (2021), Health Care Information Systems.. Google Books. https://books.google.com/books?hl=tl&lr=&id=io1SEAAAQBAJ&oi=fnd&pg=PR15&dq=+management+information+system+&ots=X6Ioph9b8g&sig=TWH1oi3FUG2BL8Sea aHX_o5MnDM
- Hanadi Aldreabi, Niveen Halalsheh, Alrawashdeh, M. N., Ann Mousa Alnajdawi, Rula Odeh Alsawalqa, & Muhannad Al-Shboul. (2023). Sustainable digital communication using perceived enjoyment with a technology acceptance model within higher education, in Jordan. *Frontiers in Education*, 8. <https://doi.org/10.3389/feduc.2023.1226718>
- Hiebl (2024), Information systems quality in management accounting and management control effectiveness, <https://www.emerald.com/insight/content/doi/10.1108/JAOC-09-2022-0148/full/html>
- Introduction to CAS. (2025). Cas.uwo.ca. <https://cas.uwo.ca/discover/cas-introduction.html>
- Kendle, Y., & Baldreck Chipangura. (2024). Evaluating the success of a mobile self-service application using the DeLone and McLean model. *South African Journal of Information Management*, 26(1), 8. <https://sajim.co.za/index.php/sajim/article/view/1835/2798>
- Laudon & Laudon (2020). The Dealer. America Star Books. <https://uploads.openlearning.com/user-uploads/vno5zNwADWRmsNUbmXWTmocRA2FwdqtGn8JZCGNQhrBbztV4fZkx6cbHr9CHkxSF.1629076103/eBook-ManagementInformationSystemsManagingtheDigitalFirm.pdf?se=2026-03-09T11%3A49%3A48Z&sp=r&sv=2022-11-02&sr=b&sig=Na05fCvUB7eJsfmyIHrq1wstyHFKPiV5BUIRhuJueOI%3D>
- Leyesa, M. C., Castro, R. C. C., Magsakay, E. dR., Geronimo, A. J. S., & Florencondia, N. T. (2020, December 1). Implementation of a Strategic Project Integration Management System using Visual Studio: A Case Study for a Construction Company in the Philippines. *IEEE Xplore*. <https://doi.org/10.1109/HNICEM51456.2020.9400097>
- Liu, X. (Kelvin), & Wu, B. (2020). Do IPO Firms Misclassify Expenses? Implications for IPO Price Formation and Post-IPO Stock Performance. *Management Science*. <https://doi.org/10.1287/mnsc.2020.3684>
- Liu, Q., Geertshuis, S., & Grainger, R. (2020). Understanding academics' adoption of learning technologies: A systematic review. *Computers & Education*, 151, 103857. <https://doi.org/10.1016/j.compedu.2020.103857>

- Mary Rose Mabalay, Jeny Raviz, Alosnos, E., Barbieri, M., Quicho, E., Ann, E., Barroga, M., Meriam Coñado, Mabalot, P., Jean Rochielle Mirandilla, Arocena, A., Juanito Maloom, Bello, G., Ederlina Cariño, Gina de Mesa, Norlyn Detoito, Gonzaga, H., Martin, N., Mitzi Philline Tejada, & Mary Jane Vives. (2022). The Philippine Rice Information System (PRiSM): An Operational Monitoring and Information System on Rice. Springer EBooks, 133–150. https://doi.org/10.1007/978-3-030-92365-5_7
- Matias, J., & Timosan, J. Q. (2021). Examining Teachers' Use of Learning Information Systems (LIS) of the Basic Education Schools in the Philippines Using Structural Equation Modeling. *International Journal of Enterprise Information Systems*, 17(1), 69–84. <https://doi.org/10.4018/ijeis.2021010104>
- Nasser, A., & Zaied, H. (2012). An Integrated Success Model for Evaluating Information System in Public Sectors. *Journal of Emerging Trends in Computing and Information Sciences*, 3(6). <https://parsmodir.com/wp-content/uploads/2016/11/delonemclean.pdf>
- Opoku, M. O., & Kwesi, F. E. -. (2020). Relevance of the technology acceptance model (TAM) in information management research: a review of selected empirical evidence. *Pressacademia*, 7(1), 34–44. <https://doi.org/10.17261/pressacademia.2020.1186>
- Pearlson (2024), *Managing and Using Information Systems*. Google Books. https://books.google.com/books?hl=tl&lr=&id=1bzmEAAAQBAJ&oi=fnd&pg=PR1&dq=+management+information+system+&ots=w2gxZ31fg_&sig=cybVw8S2KyGRWrqO3Cm8UdM39sk
- Public university | Economics | Research Starters | EBSCO Research. (2025). EBSCO. <https://www.ebsco.com/research-starters/economics/public-university>
- Quantive. (2024). Strategic Planning Process: 7 Crucial Steps to Success | Quantive. Quantive.com. <https://quantive.com/resources/articles/strategic-planning-process>
- Rainer (2020), *Introduction to Information Systems..* Google Books. https://books.google.com/books?hl=tl&lr=&id=28T4DwAAQBAJ&oi=fnd&pg=PA1&dq=+management+information+system+&ots=_gcbFNvEns&sig=ugiPwgaktqdMtVIOXcKZie0dBJQ
- Republic Act No. 10173 | GOVPH. (2012, August 15). Official Gazette of the Republic of the Philippines. <https://www.officialgazette.gov.ph/2012/08/15/republic-act-no-10173/>

- Rosenbloom, D. H., Kravčuk, R. S., & Clerkin, R. M. (2022). *Public administration : understanding management, politics, and law in the public sector*. London ; New York: Routledge, Taylor Et Francis Group.
- Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2020). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13(2), 74–101. <https://doi.org/10.1177/1529100612436661>
- Saharawat, V. (2024, January 22). *Data Analysis Techniques In Research - Methods, Tools & Examples*. PW Skills. <https://pwwskills.com/blog/data-analysis-techniques-in-research-methods-tools-examples/>
- Setyowati, W., Widayanti, R., & Supriyanti, D. (2021). Implementation Of E-Business Information System In Indonesia : Prospects And Challenges. *International Journal of Cyber and IT Service Management*, 1(2), 180–188. <https://doi.org/10.34306/ijcitsm.v1i2.49>
- Strategic planning definition. (n.d.). AccountingTools. Retrieved December 16, 2020, from <https://www.accountingtools.com/articles/strategic-planning.html>
- Sumartono (2024), *Information Technology Audit in Optimizing Resources and Utilization of Financial Information System*, <https://www.globalresearcher.net/index.php/technovate/article/view/30>
- Sune Dueholm Müller, & Johan Ivar Sæbø. (2023). The “hijacking” of the Scandinavian Journal of Information Systems: Implications for the information systems community. *Information Systems Journal*. <https://doi.org/10.1111/isj.12481>
- Tajul Urus, Sharina, Hasim, K., Syed, & Mat, T. (2020). *Critical success factors of Accounting Information Systems (AIS): empirical evidence from Malaysian organizations* / Sharina Tajul Urus ... [et al.] - UiTM Institutional Repository. [Uitm.edu.my. https://ir.uitm.edu.my/id/eprint/31048/1/31048.pdf](https://ir.uitm.edu.my/id/eprint/31048/1/31048.pdf)
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>



Wu, M.-Y. (2024). Examining the Impacts of Information and Communication Technology (ICT) on National Development and Wellbeing: A Global Perspective. *Journal of Economy and Technology*. <https://doi.org/10.1016/j.ject.2024.11.006>

Zulueta, Ma. C. E., Buno, R. M. V., Cruz, A. C. D., Sagun, A. J., Buenaventura, M. D. S., Talidano, A. S., & Cabrera, W. C. (2021). A Comparative Case Study on the Challenges Encountered by Philippine Private and Public Educational Institutions with their Existing Management Information System. *International Journal of Multidisciplinary: Applied Business and Education Research*, 2(11), 1211–1217. <https://doi.org/10.11594/10.11594/ijmaber.02.11.12>