

Structural equation model: Organizational performance among state universities and colleges in Philippines

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Abstract

Purpose: This study identifies the best model fit for organizational performance among state universities and colleges (SUCs) in Region XII, Philippines, influenced by innovation strategy and quality management practices.

Research methodology: The study design was descriptive-correlative. Since the design is descriptive, it provides a comprehensive explanation of organizational performance among SUCs in Region XII. Furthermore, the Mean and latent variable analysis (LAVAAN) using the r-studio package were the statistical measures employed to evaluate the hypothesis.

Results: The findings indicate that SUCs effectively fulfill their instructional, research, and extension functions, and their organizational performance is influenced by both innovation strategies and quality management practices. The developed model revealed a positive relationship between technological innovation, continuous improvement practices, and organizational performance. However, a negative relationship was observed between management innovation and support.

Limitations: This study was limited to SUCs in Region XII. The variables for organizational performance were limited to performance in instruction, research, and extension, while predictors of these performances revolved only in innovation strategy and quality management.

Contribution: The intended implementation of the model among SUCs aims to enhance their performance and align it with the mandates of the Commission on Higher Education (CHED). Overall, this study's output will contribute to the pool of knowledge, particularly in the field of educational management.

Novelty: The study not only provides a comprehensive understanding of organizational performance among SUCs but also develops a model that best fits organizational performance, which has not been done in previous studies.

Keywords: *Structural Equation Model, Organizational Performance, State Universities and Colleges, Region XII, Philippines*

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1. Introduction

Higher education institutions play a crucial role in the well-being of nations. Higher education is rapidly expanding in most Asian countries, presenting the potential for positive social and economic effects (Cimene, Talili, Telen, & Yañez, 2021). However, this expansion also brings challenges and issues for

which there are no straightforward solutions. Addressing these challenges requires creative problem-solving, policy choices, and commitment from academic staff and institutional leaders to improve performance and remain relevant in delivering services (Ulabor & Bosede, 2019).

The effectiveness and performance of higher education institutions depend on how they implement the core principles of instruction, research, and extension services while making the most of their resources (Casillano, Azura, Abenis, & Madeja, 2021) to provide a quality education that meets international standards. Consequently, an organization's performance can significantly contribute to the holistic and professional development of productive, ethical, and service-oriented citizens. Therefore, the triple function of instruction, research, and extension services among higher education institutions is crucial to the socioeconomic growth and sustainable development of the country as well as the development of professionals equipped for global competition (Cabaron, 2018).

It is of utmost importance that higher education institutions (HEIs) in the Philippines reinforce the mandated functions of instruction, research, and extension. Despite the Commission on Higher Education (CHED) 's efforts, the quantity, quality, thrusts, and contributions to the national growth of higher education in the Philippines regarding these functions are insufficient. Bernardo's (2018) study found that out of 223 HEIs in the sample, only 15 met the requirements for the graduate-capable HEI category, and merely two met the criteria for doctoral/research university categories. The CHED mandates that HEIs offering graduate and postgraduate programs must demonstrate competence in the three functions of instruction, research, and extension. Hence, most HEIs must enhance their three-fold functions of instruction, research, and extension services.

Furthermore, Sedanza (2018) emphasized that giving equal consideration to each of the three functions is a national mandate and requirement for State Universities and Colleges (SUCs). This not only determines the institutions' level of performance for budgetary support and incentives (Joint Circular No.1-A, Section 2016) but also serves as a basis for their performance evaluation.

Numerous studies have revealed a noteworthy association between innovation strategy and QM practices in the realm of organizational performance. However, this study seeks to provide updated data and a more comprehensive understanding of the organizational performance of state universities and colleges in Region XII. Specifically, the study endeavors to create a model that accurately fits the organizational performance construct, a framework that has not been explored or analyzed in previous research.

1.1. Research questions

This study identifies the best model fit for organizational performance among state universities and colleges in Region XII, Philippines, influenced by innovation strategy and quality management practices.

Specifically, this study sought to answer the following questions:

1. What is the level of organizational performance of state universities and colleges in Region XII in terms of
 - 1.1 instruction;
 - 1.2 research; and
 - 1.3 extension?
2. What are the levels of innovation strategies and quality management practices of state universities and colleges in Region XII?
3. Which model best fits the organizational performance among SUCs in Region XII?

1.2. Aim and objectives

This study sought to assess the level of organizational performance among SUCs based on their mandated functions of instruction, research, and extension, specifically:

1. To examine the level of organizational performance of state universities and colleges in Region XII.
2. Examine the innovation strategy and quality management practices of state universities and colleges

- in Region XII.
3. Develop a model that best fits the organizational performance of SUCs in Region XII.

1.3. Research hypothesis

1. No model best fits organizational performance among state universities and colleges in Region XII.

2. Literature Review

2.1. Organizational Performance

Organizational performance is a fundamental aspect of evaluating an organization's achievement in terms of its intended outcomes (Short, Ketchen Jr, Palmer, & Hult, 2007). It is a complex and multidimensional construct influenced by various internal and external factors. The effectiveness of organizational performance depends on the leader's ability to cultivate a collaborative workplace culture and manage their team effectively. Engaging participants in team activities emotionally and demonstrating empathy are crucial for generating professional solutions to problems (ibid).

Numerous studies have provided empirical evidence highlighting the significance of organizational performance in assessing an organization's overall health, enhancing employee performance, shaping team capabilities, and fostering individual contributions (Gunsayan & Guhao Jr, 2020). Organizational performance encompasses diverse aspects such as managing the organization, fostering staff growth, satisfying stakeholders, and promoting effective communication and engagement.

To ensure success, administrators must carefully determine the assessment variables and regularly review an organization's performance. Performance measurement is crucial because it facilitates effective management (Karini & Hasbullah, 2021). Performance information plays a vital role in enabling managers to evaluate an organization's progress or regression. When evaluating organizational performance, factors such as reliability, competency, and collaboration among various functional units need to be taken into consideration (Kintu & de Waal, 2021).

Organizational performance indicates how effectively an organization leverages its informational, financial, and human resources to position itself in the market. Organizations employ a wide range of activities to achieve their goals. Quantifiable repetitive activities facilitate the use of processes to assess performance levels and to identify areas within those processes that require improvement, whether in a business or educational context. The present study specifically focuses on organizational performance within educational institutions in Region XII, the Philippines.

Quality is the key to success in the contemporary Philippine educational system. This entails surpassing previous achievements and demonstrating cutting-edge practices. Addressing the issue of quality and producing graduates with global competitiveness is essential to bring about systemic changes in the educational system (Laguador, Dotong, & De Castro, 2014). Higher education institutions must offer productive and innovative solutions to attract and retain students and establish meaningful relationships with them (Ganesh, Haslinda, & Raghavan, 2017). These institutions recruit and train highly qualified academics to ensure that graduates meet the highest competency standards across various subjects, thereby distinguishing themselves from the competition (Darling-Hammond, 2010). In a highly competitive society, higher education institutions must adopt a growth-oriented approach to thrive (Bateman & Snell, 2011). Administrators play a crucial role in integrating various performance components to ensure their effective and efficient functioning.

Higher education institutions strive to surpass the basic quality requirements to support regulatory functions and gain recognition from the government. They promote the implementation of mechanisms that meet quality requirements, with a particular emphasis on three core responsibilities, instruction, research, and extension, which serve as performance indicators (Sallis, 2014). By emphasizing these three core responsibilities—instruction, research, and extension—higher education institutions establish a framework for assessing and measuring their performance. These responsibilities serve as performance indicators that reflect an institution's commitment to quality and its impact on various stakeholders. Regulatory bodies and government agencies often use these indicators to evaluate an institution's

effectiveness, efficiency, and overall contribution to society.

Institutions employ various strategies and practices to meet the quality requirements associated with instruction, research, and extension. These may include developing and implementing rigorous accreditation processes, establishing centers of excellence, fostering collaboration and partnerships with industry and community organizations, investing in faculty development, and adopting quality assurance mechanisms (ibid).

Organizational performance is a complex and multifaceted concept influenced by various factors. Effective leaders foster a collaborative culture and skillfully manage teams to achieve desired outcomes. The measurement and assessment of performance are indispensable for effective management and continuous improvement. In educational institutions, quality plays a central role in achieving success and competitiveness. Higher education institutions must excel in instruction, research, and extension in order to meet the demands of stakeholders and regulatory bodies. By prioritizing organizational performance and striving for continuous improvement, these institutions can positively impact the educational landscape and contribute to the holistic development of individuals.

2.2. Predictors of Organizational Performance

Organizations engage in various activities to accomplish their goals. Quantified repeatable activities support the use of processes for the organization's success by enabling management to decide where, if necessary, within the procedures to take measures to improve performance (Franco-Santos et al., 2007).

An organization is a purposefully coordinated social unit comprising several individuals who regularly collaborate on shared objectives. Some examples of such organizations are local, provincial, and federal government agencies, schools, hospitals, churches, manufacturing and service companies, retail businesses, police departments, and military units (DeClerk, 2008). To comprehensively understand an organization's nature, one must be familiar with organizational theories and predictors of organizational performance, including innovation strategies and quality management practices.

2.3. Innovation Strategy

Innovation is one of the essential components of an organization's success, long-term competitive advantage, and longevity (Jiménez-Jiménez & Sanz-Valle, 2011). From an organization's perspective, innovation is a multifaceted process that includes creating, transforming, and applying a novel combination of concepts, knowledge, technologies, capabilities, and resources to evolve creative ideas or personalities. This can boost a company's profitability (Anoke, Ngozi, Uchechukwu, & Joyce, 2022), reduce production and distribution costs, and increase customers' eagerness to buy and pay for products (Karlsson & Tavassoli, 2015).

Innovation has long been a primary driver of competitive advantage and societal wellbeing (Pisano, 2015). Some academics emphasize the value of observing customers and competitors more closely in the marketplace and taking direct lessons from the surrounding environment. Others argue that placing too much attention on the external business environment would only result in the development of unimportant products and will not sustain long-term profit. For the latter, the only sources of profit and organizational sustainability are the growth of internal competence and innovation capability.

Based on Zaied, Louati, and Affes (2015), innovation can help a company build specific strategic resources, provide a competitive advantage, and promote high performance. The inventive instruction of the organization's approach to selecting goals, tactics, and means to harness and fully develop the creative potential of the business is known as an innovation strategy (Lendel & Varmus, 2011). However, Katz, Du Preez, and Schutte (2010) define innovation strategy as an incrementalist, operational, predetermined plan governing the allocation of resources to various types of innovations to achieve the overall corporate strategic goals of the company. Therefore, it is a framework for deciding when and how to selectively or entirely overhaul the corporate strategy and plans to manage the organization's future.

The primary driver of innovation is a company's desire to increase its competitive advantage and business performance. Companies increase their competitive advantage and market share depending on their importance to innovation. Building a reputation in the global market is essential for businesses to increase their market share (Tuan, Nhan, Giang, & Ngoc, 2016).

The innovation strategy then directs choices about utilizing the resources to realize the firm's goals for innovation, offer value, and gain a competitive edge (Lendel & Varmus, 2011). Additionally, it helps businesses determine the type of innovation that gradually and reasonably supports their goals. Furthermore, innovation initiatives may lead to the development of new technologies, goods, or methods to lower environmental impact costs and improve resource utilization efficiency (Mariadoss, Tansuhaj, & Mouri, 2011). Similarly, innovation can substantially impact an organization's performance by enhancing its position in the market, which helps it gain a competitive edge and deliver superior results (Antunes, Quirós, & Justino, 2017).

2.4. Quality Management Practices

In a highly variable and complex business environment, there is a competitive market and significant change in levels (Eltawy & Galleary, 2017). Globalization, rapid technical advancements, competition, disruptive business models, and emerging new markets, where things are continuously changing, are difficulties that enterprises of all sizes face (Žitkienė & Deksnys, 2018).

Organizations must be prepared to adjust to this circumstance, which demands highly demanding product or service quality, quicker delivery, and reasonable pricing. Organizations must reconsider their priorities in light of a new paradigm that emphasizes how well they satisfy consumer needs, rather than how much money they make (George & Weimerskirch, 1998). Businesses worldwide have purposefully exploited quality to obtain clients (Neyestani & Juanzon, 2016). Customers demand that each product be of the highest quality and functionality possible as their needs continue to change with lifestyle diversification (Permana, Purba, & Rizkiyah, 2021).

Quality must be maintained to satisfy the client and retain the institution. Organizations must implement a thorough strategy to help customers by offering high-quality goods and services. Hence, quality management includes all quality characteristics that are important for both the organization and the customer (Basera, Mwenje, & Ruturi, 2019). The company must develop a plan to enhance business operations to beat the competition and increase its competitive edge (Kantardjieva, 2015). Organizations must consider quality management ideas to overcome these obstacles.

Numerous organizations worldwide employ quality management, which is successfully implemented and significantly helps the organization, contributing to its ongoing development. As a result, as part of the organization's excellence goals in achieving customer satisfaction, the quality management approach focuses on improving the effectiveness of the processes and responsiveness in meeting customer requirements (Ramlawati, 2018). All organizational components must work harmoniously to enhance the effectiveness of all programs implemented for the organization's details, activities, and members to impact one another (Kantardjieva, 2015).

Additionally, practicing quality management in an organization may help increase customer satisfaction by enhancing the organization's overall quality. These include the quality of its products and services to provide customers with the finest possible products and services. However, numerous manufacturing firms understand the importance of quality. Organizations now embrace quality as a critical tool to strengthen their competitive edge (Awoku, 2012). According to Nekoueizadeh and Esmaeili (2013), justifications for total quality management deployment include improving competitive advancement, increasing profitability, and reengineering the company to become innovative.

Comprehensive quality management builds on the idea that everyone engaged in creating products or providing services is responsible for the quality of these items and processes. Management, employees, suppliers, and customers are encouraged to work together to meet or exceed consumers' expectations.

To emphasize a systematic approach to quality, Jaafreh and Al-abadallat (2013) noted that total quality management requires complete and progressive integration among people, machines, and information. Additionally, it entails the participation of all staff in the following areas: business management and operating philosophy, customer satisfaction, market generation, human resources and professional skill management, information strategy, application and management, and procedural management (Ngambi & Nkemkiafu, 2015).

According to earlier studies, organizational networking can attest to its formation through favorable consequences when adopting quality management methods. Executing quality management initiatives is essential for firms to attain competitive strength, both within and outside (ibid). Performance indicators, including lower costs, more efficiency, improved product quality, increased market share, motivated motivation, and satisfaction, are ushered in whenever a business successfully implements quality management.

Furthermore, according to Satish and Srinivasan (2010), quality management is the cornerstone of boosting productivity, profitability, and customer satisfaction. Additionally, Nyaga and Gakobo (2017) highlighted the importance of senior management support for quality efforts in organizational performance. Their findings also revealed open communication, staff involvement, and encouragement in the production process.

Moreover, committees must oversee the execution of quality initiatives. Motwani (2001) compared total quality management with home construction. The same author asserted that senior management support for comprehensive quality management is the cornerstone of the house and can only survive with a solid foundation.

According to Bagshaw (2017), the goal of product or service design is to attract customers by meeting their wants and expectations without sacrificing quality, which is another indicator of quality management methods. This could increase the organization's efficiency and competitive environment. Therefore, businesses, organizations, and institutions should carefully consider their product design to improve organizational performance and effectiveness of their organization.

Every organization should embrace many components of total quality management. However, this study focused only on continuous improvement and management support as variables of quality management practices.

2.5. Structural Equation Modeling (SEM) in Social Sciences Research

Analyzing datasets with numerous variables is a common step in modern social science research. The methodology used to handle these datasets is known as the multivariate analysis. Furthermore, more mathematics is needed to create multivariate statistical approaches for inference compared to a univariate environment.

Structural Equation Modeling (SEM) is a set of statistical models that aims to explain the connections between numerous variables. This procedure examines the structure of interactions described in a set of equations that resemble a set of multiple regression equations. These equations show the connections between various constructs of the analysis. Constructs are latent or unobservable factors represented by several variables (Bag, 2015).

Path modeling, latent variable analysis, and covariance structure analysis are other names used for SEM. Structural equation models (SEM) can be tested in various ways. However, they can all be characterized by three features (ibid.): calculation of several interconnected dependent relationships, an understanding of how to describe observable ideas in these connections and measure account, creating a model to explain all of the relationships, the model's estimation, and, if necessary, model re-specification.

The field of social sciences has seen extensive use of structural equation modeling. Structural equation modeling was used by Jayakumar and Sulthan (2014) to uncover how employees felt about the

industry's training and development initiatives. Saxena and Khanna (2013) formulated a model for quantifying advertising value through structural equation modeling. To shed light on various forms of stress variables, stress symptoms, and the effects of stress on college students, Jayakumar and Sulthan (2014) used structural equation modeling.

Tsai and Chai (2012) used SEM, a thorough statistical analysis, to illustrate it in the context of educational technology. Investigate the impact of interventions on learning and examine the collateral effects of the related psychological dimensions. Thomas and Bhasi (2011) used SEM for software project risk management in information technology.

3. Research Methodology

3.1. Design of the Study

The study employed a descriptive-correlative design to facilitate a comprehensive explanation of organizational performance among SUCs in Region XII. Through its descriptive nature, this study provides a detailed exploration of various aspects of the organization, while the correlative aspect allows for the examination of relationships that predict organizational performance. This design choice ensures a thorough and nuanced understanding of organizational performance and contributes valuable insights for future improvements and decision-making in the SUCs of the region.

3.2. Locale of the Study

The study was conducted in six (6) state universities: Mindanao State University (MSU), South Cotabato State University (SCSU), Sultan Kudarat State University (SKSU), University of Southern Mindanao (USM), and Cotabato Foundation College of Science and Technology (CFCST).

3.3. Methods and Materials

This study uses a descriptive-correlational research design to examine organizational performance in Region XII's state universities and colleges (SUCs). The descriptive design allowed for a comprehensive exploration and explanation of the topic. The research methodology focuses on identifying significant correlations between the variables of interest. The hypothesis was evaluated using statistical measures, such as mean and latent variable analysis (LAVAAN), implemented through the r-studio package.

3.4. Respondents of the Study

The study's respondents were the faculty and staff members with administrative functions from various state universities and colleges, namely Mindanao State University (MSU), South Cotabato State College (SCSC), Sultan Kudarat State University (SKSU), University of Southern Mindanao (USM), and Cotabato Foundation College of Science and Technology (CFCST). A stratified random sampling technique was employed to select 219 respondents from the total population of 504 state university and college administrators in Region XII.

3.5. Sampling Technique

In this study, stratified random sampling using the lottery technique was employed. This technique involves randomly selecting numbers using a lottery technique, with each number corresponding to the respondent's name. The researcher ensured that all respondents' names were evenly distributed across the strata before selecting the sample population, thus ensuring that every member of the entire population had an equal chance of being selected.

3.6. Research Instrument

This study used a researcher-developed instrument that underwent rigorous validation and reliability testing. First, the instrument was subjected to a validity test by experts, which resulted in high validity. Second, pilot testing was conducted to assess reliability. The Cronbach's alpha coefficient was 0.932, indicating a high level of instrument reliability.

3.7. Data Gathering Procedure

The researcher implemented the following data collection procedure.

1. After obtaining permission from school administrators, the researcher administered a survey questionnaire to the participants. The questionnaires were personally provided by the researcher along with clear instructions on how to complete them. The researcher also explained the nature and purpose of this study. Once the respondents completed the questionnaires, they were immediately collected by the researcher.
2. The respondents were randomly selected to ensure an equal and independent probability of inclusion. They were distributed proportionally across the five schools based on the school population. The researcher personally drew the desired number of samples while maintaining a proportional representation.

3.8. Statistical Treatment

Various statistical tests were used to assess and interpret the quantitative data collected in this study. A survey questionnaire was used to generate the responses. All tests were performed at a significance level of 0.05.

1. The mean was used to assess the level of organizational performance among the SUCs relative to instruction, research, and extension.
2. The Mean was also used to determine the level of innovation strategy and quality management practices among the SUCs in Region XII.
3. Latent variable analysis (*LAVAA*N) through the r-studio package was used to develop a model fit for organizational performance among state universities and colleges.

4. Results and Discussions

4.1. Research Question 1: What is the organizational performance level of state universities and colleges in Region XII in terms of instruction, research, and extension?

The table below shows the overall performance of state universities and colleges in Region XII, with an overall mean of 3.99, indicating that HEIs in Region XII have Very Satisfactory Performance in their mandated functions, instruction, research, and extension. Therefore, the performance of higher education institutions exceeded expectations in their tri-functions because they performed satisfactorily.

In the evaluation conducted by SUCs administrators, it was found that organizational performance in instruction ($M=4.17$) had the highest mean compared to research ($\text{Mean}=3.95$) and extension (3.87). This finding aligns with Cabaron's (2018) study, which also highlights a greater emphasis on instruction over research and extension among higher education institutions.

Table 1. Organizational Performance of SUCs in Region XII

Organizational Performance of HEIs in Region XII	Mean	SD	Qualitative Description
Instruction	4.17	0.57	Very Satisfactory
Research	3.95	0.68	Very Satisfactory
Extension	3.87	0.73	Very Satisfactory
Overall Mean	3.99	0.61	Very Satisfactory

As emphasized by Godbout-Kinney and Watson (2022), higher education instructors continuously strive to enhance students' thinking, behavior, and approach to their fields of study and practice. Therefore, instructional methods should focus primarily on achieving these goals. Consequently, instruction takes precedence among the mandated functions of higher education institutions, as it is the primary responsibility of faculty members in universities and colleges. Instruction is considered to be the most critical aspect of higher education and serves as the foundation for learning and knowledge acquisition. It equips students with the necessary skills and knowledge to succeed both academically and professionally.

4.2. Research Question 2: What are the innovation strategies and quality management practices of state universities and colleges in Region XII?

Overall, when considering both predictors together, as reflected in the table below, the mean score is

3.82, further indicating a highly practical level. This suggests that state universities and colleges in a given region place significant emphasis on innovation strategy and leaders' quality management practices as important drivers of organizational performance.

Table 2. Level of Predictors of Organizational Performance Among SUCs in Region XII

Predictors of Organizational Performance	Mean	SD	Qualitative Description
Innovation Strategy	3.78	0.67	Highly Practiced
Leaders' Quality Management Practices	3.86	0.67	Highly Practiced
Overall Mean	3.82	0.65	Highly Practiced

Based on the provided table, the highest mean score for Leaders' Quality Management Practices (M= 3.86) compared to the mean score for Innovation Strategy (M= 3.78) suggests that SUCs place a relatively higher emphasis on quality management practices than on creating innovative strategies.

This indicates that SUCs prioritize the implementation of effective quality management practices to ensure the delivery of high-quality education and services. These practices may include processes such as quality assurance, continuous improvement, staff development, stakeholder engagement (Baregheh, Rowley, & Sambrook, 2009), and conducting strategic programs (Khan, 2020). By focusing on quality management, SUCs aim to maintain and enhance the overall quality of their educational offerings, student experiences, and organizational performance.

While the mean score for Innovation Strategy is still relatively high, the slightly lower mean compared to Quality Management Practices suggests that SUCs may place greater emphasis on ensuring quality standards and processes are in place rather than focusing solely on creating innovative strategies. However, this does not necessarily imply that SUCs do not value or pursue innovation. This suggests that in the context of the study, quality management practices may be deemed more crucial for achieving organizational success and meeting the needs of stakeholders.

Finally, the higher mean for Quality Management Practices in this study suggests that within a given sample of SUCs, quality management is perceived as a critical factor for organizational performance. However, when organizations combine innovation strategies and quality management practices, they can develop programs and services that effectively meet customer needs and surpass clients' expectations in terms of quality. Baregheh et al. (2009) emphasize that organizations integrating these two components are more likely to attain long-term success and gain a competitive edge in the market. Hence, organizations must prioritize both innovation strategies and quality management practices to remain competitive in today's dynamic and evolving organizational landscape.

Therefore, the upcoming tables demonstrate the correlation between innovation strategy and leaders' quality management practices with the organizational performance of SUCs, specifically in Region XII.

4.3. Research Question 3: What model best fits the organizational performance of state universities and colleges in Region XII?

This section presents a thorough analysis of the variables that best predict the organizational performance model among state universities and colleges in Region XII. Adequacy of fit was employed as a criterion for accepting or rejecting the model. As a standard practice, the researcher established causal relationships between latent variables and various exogenous variables.

Interdependence between endogenous and exogenous variables was also introduced. Achieving a suitable fit for the structured model signifies the reliability of the empirical relationships among the inferred variables in the model. The model parameter estimates revealed the magnitude and direction of the relationships among the variables.

The study employed structural equation modeling (SEM) as a statistical technique to assess model fit. The analysis was conducted using the Lavaan (latent variable analysis) package, which is based on the covariance matrix of the observed variables and assumes multivariate normality. SEM allows for the modeling of relationships between latent and observed variables, providing a comprehensive framework for testing the fit of a structural model to the observed data.

In terms of fit indices for evaluating the model fit for parametric structural equation modeling, the commonly used fit indices include the Chi-square (χ^2), Degrees of freedom (df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR).

The fit indices and criteria for evaluating the goodness-of-fit of the model are presented in Table 28. The criteria used to evaluate the model fit were as follows: chi-square (χ^2) less than 0.05, comparative fit index (CFI) greater than 0.95, Tucker-Lewis index (TLI) greater than 0.95, root mean square error of approximation (RMSEA) less than 0.05, and standardized root mean square residual (SRMR) less than 0.08.

Table 4 presents the fit indices and corresponding criteria used to evaluate the goodness of fit of the model.

Table 4. Goodness Fit Measure of Structural Model

FIT INDEX	CRITERION	MODEL FIT VALUE
χ^2	< .05	0.000
Df		1114
CFI	> 0.95	0.983
TLI	> 0.95	0.982
RMSEA	< 0.05	0.017
SRMR	< .08	0.059

4.4. Best Fit Model for Organizational Performance

This section identifies the variables that are most effective in predicting organizational performance within state universities and colleges. A model was developed and evaluated to determine the best-fit pattern, and its indices consistently indicated a perfect fit. As such, the model of the structural equation was identified as an ideal fit model, as shown in Figure 1, as all presented indices met the required criteria. Consequently, there was no need to consider any other model for testing, as this model had already been determined to be the best fit for predicting the organizational performance of state universities and colleges in the region. Consequently, the null hypothesis that there was no best-fit model was rejected, and it can be concluded that there is a best-fit model for predicting the organizational performance of SUCs in Region XII.

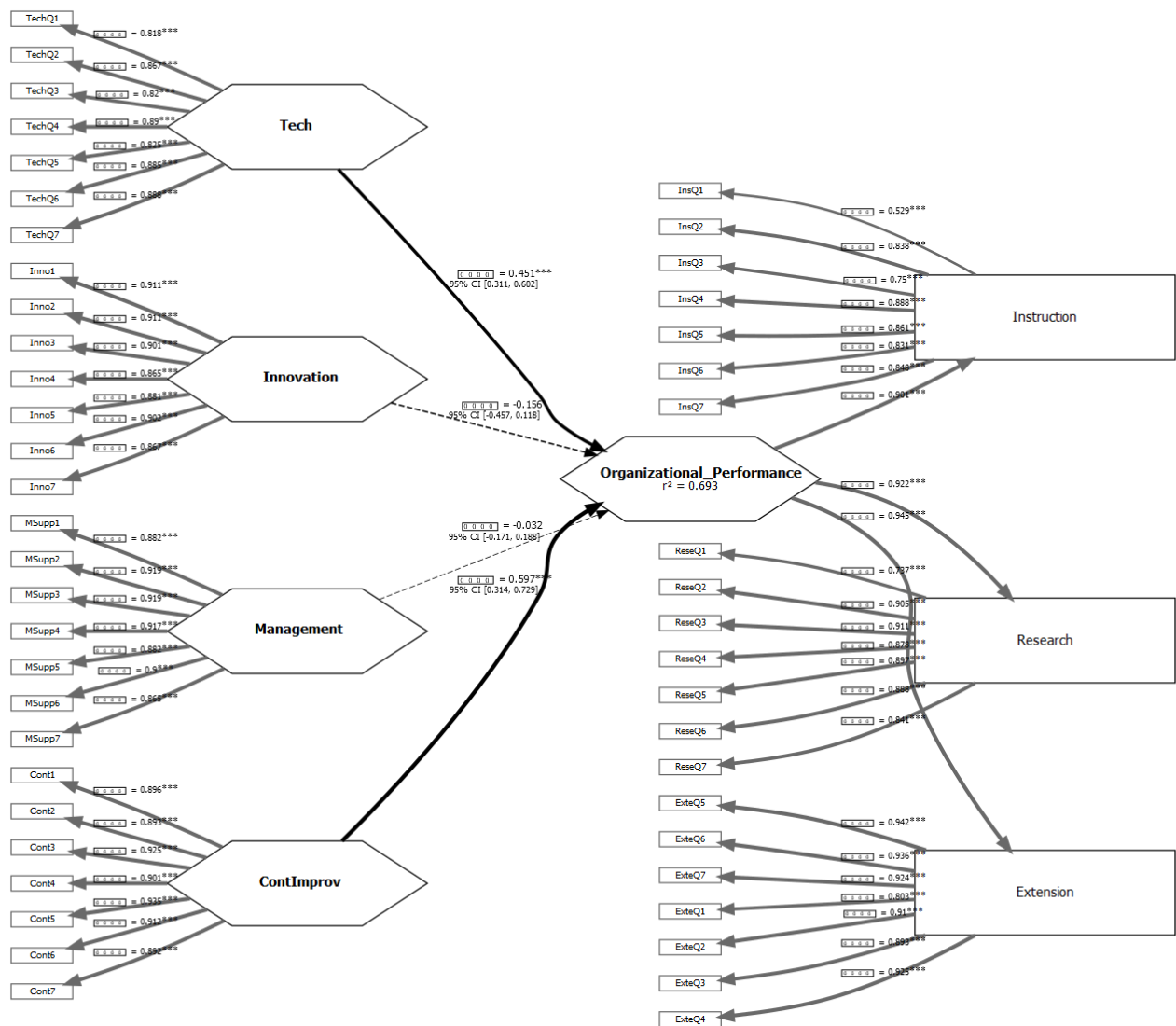


Figure 1. Best Fit Model of Organizational Performance Among State Universities and Colleges in Region XII

Legend:

Tech	-Technological Innovation
ContImprov	-Continuous Improvement
Innovation	-Management Innovation
Management	-Management Support

5. Conclusion

5.1.Conclusion

Based on the findings of this study on the organizational performance of state universities and colleges (SUCs) in Region XII, it is evident that SUCs in the region satisfactorily perform their mandated functions of instruction, research, and extension. The results of this study indicate that the SUCs in Region XII are on the right path to continuously improve themselves, as they heavily utilize innovation strategies and quality management. According to this study, there is a significant link between the aforementioned variables and SUCs' organizational performance. Specifically, technological innovation and continuous improvement, which represent innovation strategy and quality management practices, respectively, significantly impact organizational performance. In conclusion, this study suggests that SUCs in Region XII should focus on improving their technological innovation and continuous improvement practices to enhance their organizational performance. These variables predict organizational performance, and thus the SUCs in the region can use this information to inform their

strategies and practices to improve their organizational performance by fulfilling their mandate of providing quality instruction, research, and extension services to the community.

5.2. Limitation

The study involved state universities and colleges in the Philippines and was limited to Region XII. The study's variables for organizational performance were limited to performance in instruction, research, and extension, while predictors of their performance revolved only in innovation strategy and quality management.

5.3. Suggestion

Based on the conclusion of the study on organizational performance among state universities and colleges in Region XII, it is suggested that SUCs in the region prioritize improving their innovation strategy and quality management practices to enhance their organizational performance. To achieve this goal, the following suggestions are proposed.

It is highly recommended to implement a structural equation model designed to enhance the organizational performance of SUCs in the tri-functions of instruction, research, and extension. Ensure that the Commission on Higher Education supports (implementation). This collaboration will effectively enhance the organizational performance of SUCs and enable them to excel in the core areas of instruction, research, and extension.

A more comprehensive and extensive study of the relationship between innovation strategy, quality management practices, and organizational performance of state universities and colleges (SUCs) is recommended. This study should explore specific strategies and practices that can effectively enhance innovation and quality management in these institutions and should include additional variables and cover a wider scope. This will provide a deeper understanding of how SUCs can improve their organizational performance through innovation and quality management practices, and guide future policies and interventions to enhance the educational management of these institutions.

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