The Use of Management Accounting Strategies as a Tool for Decision- Making in Higher Educational Institutions

Bartolome, Erica F., Batugal, Rochelle Anne F., Borja, Princess Diana A., Esnada, Valerie Joy A., Lagasca, Arabelle Mae C., Soriano, John Lindy R.

Saint Mary's University, Nueva Vizcaya, Philippines

DOI: https://dx.doi.org/10.47772/IJRISS.2024.805112

Received: 06 May 2024; Revised: 13 May 2024; Accepted: 17 May 2024; Published: 14 June 2024

ABSTRACT

Higher Educational Institutions (HEIs) face various challenges in decision-making that can impact their organizational performance. Overcoming these challenges requires institutions to adapt and make use of tools and strategies to not only preserve their current relevance but also foster future growth. Management accounting strategies, which involve the deliberate, planned use of accounting techniques, tools, and approaches for decision-making and organizational performance, play a crucial role in assisting higher educational institutions' decision-making by providing relevant financial and non-financial information. This study aimed to examine the extent of the use of management accounting strategies as a tool for decision-making in higher educational institutions, the extent to which management accounting strategies have helped management in decision-making, and the contingent factors that affect its use. The study employed a descriptive-comparative-correlational approach to answer the extent use of management accounting strategies (MAS) and determine if there is a significant difference among the profile variables and if there is a significant relationship among the contingent factors. Research findings indicate that HEIs in Nueva Vizcaya employ strategies; however, the extent of their utilization appears to be moderate, as some selectively use costing systems. The results of the profile variables were not significant when it comes to the use of management accounting strategies (MAS) and there was a very high extent to which management accounting strategies have helped management in decision-making**.** There aren also of management accounting strategies (MAS) and contingent factors such as market competition, qualified internal accountants, management participation, and organizational technology. The study, just like past studies,encountered a limitation in terms of the number of respondents, which may have implications for the generalizability of the findings. Overall, there is a positive result in the use of management accounting strategies (MAS) by HEIs. Nevertheless, there is still a need to enhance its use by maximizing its completeimplementation.

Keywords: Contingent factors, extent of use, organizational performance

INTRODUCTION

Higher education institutions have substantial societal roles since they manage a country's future labor force (United Nations, n.d.). This explains why decisions relevant to the institution should be given precedence when handling the future working population. Based on her research, Ria (2022) concluded that the significance of choice within an organization and the extent to which it may influence whether or not a problem can be resolved are of utmost importance. Organizations must have the ability to make judgments to ensure the success of any plan or activity since these set the way for the successful completion of significant milestones along the way. Posselt (2019) also conducted a study that discussed and examined the weight of decision-making. Both authors offer several suggestions that will address different organizational

challenges and produce a planned result based on the well-examined data obtained from the company.

Decision-making is an essential aspect of the functioning of higher educational institutions (HEIs). It involves developing and executing action plans within institutions, which typically take place across various levels of the organization (Seggie& Emil, 2020). These institutions face a wide range of complex challenges and opportunities that require effective decision-making strategies to ensure their success and improve their organizational performance. Hence, HEIs should recognize the importance of discovering tools that enable individuals to effectively analyze information and make informed decisions based on data (Philanthropy Circuit, 2022).

Moreover, decision-making can impact organizational performance. According to Waham et al. (2020), due to the intense market competition and complexity of work, particularly at the administrative level, all organizations and industries are currently facing different kinds of challenges; as a result, leaders and administrators need a specific solution to meet these challenges. More importantly, in a highly competitive environment, departments and faculties need to establish a strategic plan and define specific criteria for evaluating the productivity of units and the performance of individuals (Ngigi, 2017). To accomplish this, Liu and Zhang(2022) suggested that many decision-makers would need a comprehensive understanding of management strategies. Additionally, many institutions, despite their rapid growth, need to embrace advanced concepts such as strategic thinking, recognizing competition, and developing a market-oriented approach.

On the contrary, institutions experience negative consequences because of failure to understand critical strategic concepts, insufficient organizational arrangements, and other related factors (Bu,2022). Thus, their budget plans, performance evaluations, and decisions are affected. These difficulties can impact the operational aspects of organizations resulting in inadequate administration and a decline in student enrollment. These factors can also adversely affect the influx of revenue and profitability of educational institutions (Laylo, 2020).

Presently, higher educational institutions (HEIs) in the Philippines are encountering an increasing number of challenges. Among them are massification, diversification, integration of international perspectives, and the influence of market forces on higher education (Nat, n.d.). Thus, there is a necessity to improve the performance of Philippine higher educational institutions (HEIs) in decision-making and guide them towards increased significance and competitiveness in the modern era. Overcoming these challenges requires institutions to adapt and make use of tools and strategies to not only preserve their current relevance but also foster future growth.

According to Ojha et al. (2021) and Aggarwal (2023), management accounting strategies have played a crucial role in assisting HEI management in decision-making by providing relevant financial and non-financial information, facilitating cost analysis and control, supporting budgeting and planning processes, measuring performance, aiding in decision analysis, contributing to strategic planning, and managing risks effectively. Moreover, Krishnan (2021) stated that management accounting strategies are essential because they help the HEI generate statements, reports, and documents that assist management in enhancing their decision-making regarding their organizational performance. In addition, Chang et al. (2023) said that through MAS, the best decisions can be made, and future strategies and tactics for their operations, short-term and long-term organizational objectives, and others can be developed. Ojra et al. (2021) further suggested that the suitability and usefulness of Strategic Management Accounting (SMA) strategies may vary depending on the competitive environment and the degree of instability within the market in which the organization operates.

Management accounting strategies contribute to the organization’s competitive edge by providing it with an advantage over its rivals (Ngo, 2020). By implementing effective management accounting strategies, the

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

organization gains an advantage over its competitors which can be attributed to the valuable insights and information these strategies provide.

Management Accounting Strategies

According to Coombs et al. (2019), management accounting strategy refers to the deliberate and planned use of management accounting techniques, tools, and approaches to support decision-making, improve organizational performance, and achieve strategic objectives. It integrates financial and non-financial information to provide organizations with relevant and timely data for effective decision-making. Moreover, there are numerous management accounting strategies out there that can be applied to organizations in making decisions for long-term success, such as capital budgeting, financial budgeting, financial statement analysis, operating budgets, cash flow statement analysis, relevant costing, total quality management, and others (Client Hub Team, 2021).

Management accounting strategies are an essential tool when it comes to decision-making because they help an organization monitor its performance (IvyPanda, 2019). Hence, it is essential to recognize management accounting strategies to make sound and informed decisions for better organizational performance (Ojra et al., 2021).

Management Accounting Strategies Among HEI's

Higher educational institutions use several management accounting strategies as a tool in decision-making. These strategies provide valuable financial and non-financial information to aid in planning, controlling, and evaluating the performance of educational institutions. Some of the management accounting strategies used by higher educational institutions are costing systems, budgeting systems, decision support systems, performance evaluation systems and strategic management accounting systems.

Costing System

Costing is a method used by organizations to ascertain their production costs (Indeed Editorial Team, 2023). It involves examining both variable and fixed costs that arise during the production process. The purpose of this accounting approach is to provide organizations with valuable information for making informed decisions and ensuring financial effectiveness and efficiency across all production areas. In this sense, a costing system assists HEIs in financial management, resource allocation, performance evaluation, and strategic decision-making. It promotes transparency, accountability, and effective utilization of resources within the institution.

Costing information is crucial in various organizational and managerial contexts, enabling decision-making, cost management, inventory valuation, and performance evaluation (Labro&Cokins, 2019). Nearly all companies utilize some form of costing system to fulfill these objectives. However, it is essential to note that costing systems exhibit significant variation in their characteristics and properties, suggesting that a standardized approach to costing systems is unlikely to be effective in all situations. Moreover, the Institute of Management Accountants (IMA) stated that there is no single, superior system for calculating costs. On the contrary, diverse costing systems are used. Rana and Hoque (2019) even indicated considerable diversity among nonprofit and voluntary organizations regarding their costing systems and management accounting practices**.** IMA also emphasizes the difference between methods designed to provide decision-making information and those focused on stock valuation and financial accounting (Lawson et al., 2019).

Adopting different costing systems enables HEIs to gain a comprehensive understanding of their cost structures from various perspectives. It helps in identifying cost drivers, allocating resources efficiently, and making informed decisions about program viability, resource allocation, and pricing.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

Budgeting System

Organizations that practice good organizational management create plans that help them achieve their objectives. One of the strategic tools that universities can use to make informed decisions and enhance performance is a budgeting system.

Organizations prepare different budgets, including sales, purchase, production, cash flow, finances, and operations (Volopay, 2023). As such, implementing budgeting strategies plays a crucial role in enhancing organizational performance by assisting university management councils in following budgetary guidelines through efficient financial planning (Momanyi& Omari, 2018). Moreover, involving all stakeholders actively is essential in the process of preparing a budget. Meanwhile, the budget committee should consistently evaluate and supervise the implementation of budget-related tasks.

Budgeting, thus, plays a critical role in providing the university management and its department with the essential information for making management decisions (Yu,2021). It offers a uniform framework that makes it possible for all parties involved to understand how the school's expenditure affects the accomplishment of its objectives and other goals (Acido&Kilingkilong, 2022).

Decision Support System

A decision support system (DSS) is an information system created to aid in organizational decision-making by providing guidelines and comprehensive information reports (Kasap et al., 2020). Decision support systems (DSSs) employ a multitasking approach, which entails the collection and analysis of extensive data to identify various choices and alternatives.

According to Shalabi (2020), DSSs are crucial for enabling higher education institutions (HEIs') daily operations and management. It facilitates decision-making in a variety of contexts, including management, academics, administrative work, and student support. DSS reduces workload, enhances efficiency and accuracy, and contributes to the institution's profitability, revenue, productivity, and overall satisfaction. Additionally, employing DSS in HEI decision-making is essential for enhancing organizational performance because it allows HEIs to make well-informed decisions based on thorough data analysis, which leads to more efficient resource allocation, better planning, and increased operational efficiency. By leveraging the capabilities of DSS, HEIs can optimize their decision-making processes and achieve better outcomes in terms of organizational performance, student success, and overall organizational effectiveness.

Performance Evaluation System

Performance evaluation systems are one of the management accounting strategies used in making good decisions (Agarwal, 2023). Moreover, a performance evaluation system, which includes financial and non-financial measures, is defined as a tool used for evaluating and assessing the performance of an organization. These kinds of performance measures are essential to an organization because they help it make sound and informed decisions, especially in higher educational institutions (O'Neil, 2018). Moreover, using performance evaluation systems regularly in HEIs helps these institutions monitor and know their organizational performance. With it, higher educational institutions can make better decisions based on facts, which are information about financial and non-financial measures.

Thus, performance measurements matter because they provide a deep insight into what makes an institution successful and organizational performance (Arun, 2021).

Strategic Management Accounting

Nguyen et al. (2021) stated that there needs to be a general agreement on the concept of a strategic management accounting system (SMA) as various authors define from their own unique personal perspective which can prove problematic. Nguyen et al. (2021) identified similar features of strategic management accounting (SMA) systems namely: almost all are driven by the external environment beyond the institution whenever determining options using monetary and non-monetary inputs, and most importantly, all emphasize long-term decisions.

Strategic management accounting (SMA) systems have emerged as a strategic tool for institutions because it is necessary for the development and implementation of a wide range of policies, practices, strategies, and tools that align with the institution's internal and external strategic objectives at every level of the organization to ensure the flow of accurate and pertinent information to achieve the organization's objectives (Shaqqour, 2020). Furthermore, Vu and Ha (2022) identified strategic management accounting system as a productive and efficient management mechanism that may assist decision-makers in effectively performing their management operations it integrates and concentrates on financial and non-monetary aspects of their decision operations. Strategic management accounting system is also significantly related to organizational performance because it assists the top management in developing competitive approaches and ensuring their effective implementation, encouraging organizations to increase interest in present issues and aid in sustainable progress through high-level evaluation and discussion (Hadid & Al-Sayed, 2021).

The primary implementation of management accounting strategies occurs in business companies, with relatively limited adoption in higher educational institutions (HEIs) (Hutaibat, 2019). Other similar studies (Ma et al., 2022; Abdullah et al., 2022; Al Madhoun, 2020) used management accounting strategies, but they were mainly focused on profit-oriented organizations. Moreover, Jovanović and Dragija (2018) found that accounting systems in higher education institutions (HEIs) have inherent flaws, hindering decision-makers' ability to make informed decisions. There is a lack of knowledge regarding management accounting, including strategic aspects within these organizational settings. Thus, this study would like to fill the gaps by determining the use of management accounting strategies for decision-making in higher educational institutions. It is also essential to consider the contingent factors that affect the use of management accounting strategies (MAS).

Furthermore, the theoretical contribution of contingency theory to HEIs as a non-profit organization is rarely conducted (Marlina et al., 2020). The contingency approach emphasizes the need for decision-makers to adapt their actions and organizational structures to specific situations (Jayasmita,2019). According to Ojra et al. (2021),it is recommended that future research focus on providing further insight into the significance of understanding the contingency aspect of strategic management accounting in promoting efficient managerial decision-making and improving organizational performance.

Subsequently, the participants in this study are the top and middle management levels of different higher educational institutions in the province of Nueva Vizcaya such as Saint Mary's University, Nueva Vizcaya State University, PLT College Inc., King's College of the Philippines and Aldersgate College. The sample size is too small since it is limited to a specific group of people, who are the top and middle officers in charge of the management accounting strategies of the institutions. Consequently, the sample size will affect the analysis of the results and limit its generalizability. Also, the respondents' answers were solely based on their knowledge and understanding.

Nonetheless, the study aimed to generate meaningful outcomes in both theoretical and practical fields. It is expected that this study will make a valuable contribution to expanding knowledge in the field of management accounting. It will determine the extent of the use of management accounting strategies for

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

decision-making in higher educational institutions and how management accounting strategies have helped management in decision-making. It will also determine a correlation between the use of management accounting strategies (MAS) and preferred contingent factors.

In practice, the study will benefit the higher educational institutions in Nueva Vizcaya to improve their organizational performance and make better decisions. The results of this study can offer valuable evidence to assist the top and middle management in different HEIs in identifying how management accounting strategies are used among institutions and the contingent factors that influence their use.

Statement of the Problem

This study aimed to examine the use of management accounting strategies as a tool for decision-making in higher educational institutions for the first semester of the school year 2023-2024. The research aims to study the profile of the decision-makers in higher educational institutions in terms of sex, age, marital status and position. The extent of use of management accounting strategies as a tool for decision-making in HEIs, along costing system, budgeting system, performance evaluation system, decision support system, strategic management accounting. Additionally, the research aims to uncover the significant difference between the use of management accounting strategies when respondents are grouped to profile variables, the extent to which management accounting strategies have helped management in decision-making, the contingent factors that affect the extent of the use of management accounting strategies by higher educational institutions in Nueva Vizcaya and the significant relationship between the use of management accounting strategies and contingent factors.

Statement of the Null Hypothesis

H_0: There is no significant difference between the use of management accounting strategies when respondents are grouped to profile variables.

H_0: There is no significant relationship between the use of management accounting strategies and contingent factors.

METHODOLOGY

Research Design

The research employed descriptive-comparative-correlational research designs. Descriptive data was used to answer the first four questions regarding the profile of the respondents, the extent of use of management accounting strategies in decision-making, the extent to which management accounting strategies (MAS) have helped the management in decision-making and factors that affected the use of management accounting strategies. A comparative method was utilized to determine if there was a significant difference between the use of management accounting strategies and the HEI's profile. It was also feasible, via the utilization of a correlational method, to determine whether or not there was a significant relationship between the use of management accounting strategies and contingent factors.

Research Locale

The study was conducted at five higher educational institutions in the province of Nueva Vizcaya. Nueva Vizcaya is located in the north-central part of Luzon in Region 2. Three of the higher educational institutions involved in this study are found in its capital town of Bayombong namely Nueva Vizcaya State University,

PLT College Inc., and Saint Mary's University. Meanwhile, King's College of the Philippines is located in Bambang while Aldersgate College is in Solano.

Research Respondents

The researchers collected responses from top and middle management levels at higher education institutions with regards to their management accounting strategies and how these influenced their decision-making. The sample size limited the number of employees participating in the study to only 22. The study used population sampling, a type of purposive sampling under the non-random sampling method, to select the study participants.

Inclusion Criteria

The study participants were the top management level of each institution that made long-term planning decisions, such as the president and vice president for finance, and the middle management level, including the chief accountant, finance officer, budget officer, and internal auditor of the institutions. Participants in the study also included individuals who were 60 years old and above.

Exclusion Criteria

The employees in top management, such as the vice president for administration, academic affairs, mission and identity, and middle management, which included deans, directors who were not part of management accounting strategies (MAS), principals, deputy registrars, and the bottom management level, were not included. Employees who were not part of the organizational planning were also not included.

Research Instrument

The researchers employed a research tool in the form of a questionnaire with a four-point Likert scale to gather relevant information in order that the objective that the study set out to achieve will be accomplished. The survey questionnaire was derived from the study of Decoro et al. (2022) titled "The Application of Management Accounting Practices (MAPS) in Multi-Purpose Cooperatives in Nueva Vizcaya." The questionnaire was adapted and modified to make it more applicable to the study so that it could be helpful to the researchers. Also, it was approved and validated by the adviser and panelists in accordance with research ethics.

Data Gathering Procedure

The data-gathering procedure in higher educational institutions in Nueva Vizcaya started on August 30, 2023. Before going to the institutions, the researchers presented their consent letter to the office of the president of each school and waited for several days for their approval. After the approval, the researchers were split in half to gather data from different institutions. Some of the researchers were assigned at Aldersgate College while some were at Saint Mary's University, PLT College Inc., and Nueva Vizcaya State University. King's College of the Philippines was the last on the list because it is the farthest institution. Following that, questionnaires were distributed personally to the respondents, who were given enough time to answer. After the questionnaires were answered, the researchers immediately collected them for data analysis. Subsequently, data gathering ended on October 04, 2023.

Treatment of Data

Statistical measures of frequency and percentage distribution were employed to ascertain the profile variables of decision-makers of higher educational institutions. The study employed mean distribution and

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

standard deviation as descriptive statistics to characterize the extent of use of management accounting strategies. Man-Whitney were employed to ascertain the significance of the disparities in management accounting strategies used based on their profile variables. Also, mean and standard deviation were used to determine the extent to which management accounting strategies (MAS) have helped management in decision-making. The contingent factors that affect the extent of use of management accounting strategies (MAS) were determined using frequency and percentage distribution. Lastly, the study used Spearman Rho Test to determine the relationship between the use of management accounting strategies and the different contingent factors.

RESULTS AND DISCUSSIONS

Section 1. Profile of Decision-Makers

Table 1 displays the profile of the 20 respondents who are decision-makers from different higher educational institutions who participated in our study.

Table 1 Decision-Maker's Profile in Higher Educational Institutions

Profile	Categories	Frequency	Percent
Sex	Male	7	35.0
	Female	13	65.0
Age	45 years old and below	8	40.0
	46 years old and above	12	60.0
Marital Status	Single	2	10.0
	Married	18	90.0
Position	Top	10	50.0
	Middle	10	50.0

Based on Table 1, there are more females than males, with a percentage of 65%. Following that, when it comes to their age, there are more 46 years old and above (60%) than 45 years old and below (40%). For marital status, more respondents are married (90%) than single (10%). Lastly, regarding their position in higher educational institutions, the top (president and vice-president for finance) and middle management levels (chief accountant, budget officer, internal auditor, director for finance) have the same percentage of 50%.

It has been reported that sex is one of the significant factors when it comes to decision-making, especially in management accounting and the accounting profession. Grant Thornton Philippines 2018 "Women in Business" survey report emphasized that women occupied 46.5 percent of senior management positions involved in decision-making in the Philippines, nearly double the worldwide average of 24 percent.

Section 2. Extent of Use of Management Accounting Strategies as a Tool for Decision-Making

Table 2-7 presents the management accounting strategies of higher educational institutions which are costing system, budgeting system, performance evaluation system, decision support system and strategic management accounting. The number of respondents in each strategy was different from one another, as they answered based on their knowledge. For example, only 15 or 75% used costing system, and only 5 or 25% did not use it. It implies that the majority of the decision-makers in higher educational institutions use costing systems through their management strategies.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

Table 2 Mean and Standard Deviation of Management Accounting Strategies in Terms of Costing Systems in Higher Educational Institutions

Management Accounting Strategies	N	Mean	Std. Deviation	Qualitative Description
Job order costing	15	3.27	.799	Moderately used
Batch costing	15	3.47	.516	Moderately used
Contract costing	15	3.60	.507	Highly used
Process costing	15	3.60	.507	Highly used
Absorption costing	15	3.20	.775	Moderately used
Variable costing	15	3.60	.737	Highly used
Activity-based costing (ABC)	15	3.40	.632	Moderately used
Costing System	**20**	**2.58**	**1.570**	**Moderately used**

Legend: 3.50-4.00 Highly used *1.50-2.49 Rarely used*

2.50-3.49 Moderately used *1.00-1.49 Not used*

As Table 2 presents, when it comes to the extent of use of management accounting strategies under the costing system, the highest mean range is found in process costing ($\bar{x}$ =3.60, SD=.507), contract costing ($\bar{x}$ =3.60, SD=.507), and variable costing ($\bar{x}$ =3.60, SD= .737) while the lowest mean range is seen in absorption costing ($\bar{x}$ =3.20, SD= .775). This indicates that the three costing accounting strategies are highly used by the decision-makers in HEIs in Nueva Vizcaya, while absorption costing was only used moderately.

Similarly, the study of Sanches et al. (2022) showed that variable costing is frequently used in higher educational institutions. However, it is ineffective in all situations (Labro & Cokins, 2019). However, it was revealed that absorption costing is only sometimes used in making decisions in higher educational institutions (De Oliveira et al., 2019). To support this, many argue that variable costing is more effective than absorption costing for organizational decision-making (Scott, 2017).

Institutions may have varying preferences when it comes to costing accounting strategies used but the use of an accurate costing system enables organizations to know and control their costs and resources and, with that, can make the best decisions (De Oliveira et al., 2019). In addition, the correct choice of the most appropriate method will allow the educational institution to know and control its actions, as well as improve its performance. Hence, variable costing, process costing, and contract costing all help institutions make good decisions.

Table 3

Management Accounting Strategies	N	Mean	Std. Deviation	Qualitative Description
Flexible budget	20	3.05	.605	Moderately used
Incremental budget	20	3.10	.718	Moderately used
Zero-based budget	20	3.00	.973	Moderately used
Budgeting system	**20**	**3.05**	**.585**	**Moderately used**

Mean and Standard Deviation of Management Accounting Strategies in Terms of Budgeting Systems in Higher Educational Institutions

Legend: 3.50-4.00 Highly used *1.50-2.49 Rarely used*

2.50-3.49 Moderately used *1.00-1.49 Not used*

The table shows that the incremental budget has the highest mean of 3.10 (SD= .718), and the lowest mean is the zero-based budget ($\bar{x}$ =3.00, SD= .973). All the other items are moderately used by higher educational institutions.

The incremental budgeting method is one of the most frequently used techniques due to its efficiency such that 60% of higher education institutions employ this particular budgeting approach (Johnson, 2019). Meanwhile, only 30% of institutions reported using zero-based budgeting (Johnson, 2019) because it was described as a difficult model due to the need to reconstruct the budget entirely in each budget cycle (Schmidt, 2023). Thus, incremental budgeting is one of the used budget models in higher educational institutions because it is easy to implement and helps organizations make better decisions by providing consistent information.

Furthermore, the respondents were also asked to indicate which budgets were prepared by their institution and how frequently were the budgets prepared. There were five budgets prepared by each higher educational institution, 25% prepared a sales budget, 50% prepared a purchases budget, 30% a production budget, followed by 75% prepared a cash flow budget, and lastly 70% prepared a financial position budget. This implies that the majority of the budgets that higher educational institutions prepared were cash-flow budgets. As for the preparation of budgets, 75% made a budget annually, 15% prepared a continuous/rolling budget, and 10% prepared their budget semi-annually. Thus, the majority of the HEIs prepared their budget annually.

Table 4 Mean and Standard Deviation of Management Accounting Strategies in Terms of Performance Evaluation System in Higher Educational Institutions

Management Accounting Strategies	**N**	**Mean**	**Std. Deviation**	**Qualitative Description**
Operating income	20	3.60	.681	Highly used
Return on investment	20	3.35	.813	Moderately used
Variance analysis	19	3.63	.496	Highly used
Revenue growth	19	3.58	.692	Highly used
Cash flows	20	3.60	.503	Highly used
Financial Measures	**20**	**3.54**	**.577**	**Highly used**
Number of student's complaints	20	3.15	1.089	Moderately used
Student's satisfaction	20	3.60	.598	Highly used
Employee turnover	20	3.15	.745	Moderately used
Absentee rates	20	3.15	.813	Moderately used
Non-Financial Measures	**20**	**3.26**	**.681**	**Moderately used**
Performance Evaluation System	**20**	**3.40**	**.572**	**Moderately used**

Legend: 3.50-4.00 Highly used *1.50-2.49 Rarely used*

2.50-3.49 Moderately used *1.00-1.49 Not used*

As shown in Table 4, in terms of the performance evaluation system using financial measures, variance analysis has the highest mean of 3.63 (SD= .496). In contrast, the return on investment has the lowest mean

of 3.35 (SD = .813). It was revealed that financial measures have a mean of 3.54 (SD=.577) and described as highly used by the institutions. Under financial measures, operating income, variance analysis, sales growth, and cash flows are also highly used by the HEIs. However, the return on investment was only used moderately. Regarding non-financial measures, it has a mean of 3.26 (SD= .681) and described is moderately used. Under this measure, it shows that the highest mean is student satisfaction ($\bar{x}$ =3.60, SD= .598), while the lowest mean is the number of student complaints ($\bar{x}$ =3.15, SD= 1.089), employee turnover($\bar{x}$ =3.15, SD= .745), and absentee rates ($\bar{x}$ =3.15, SD= .813). This could mean that student satisfactionwas highly used in the institution as a measure of the performance evaluation system, while the remaining three non-financial measures were used moderately.

Financial measures are widely used in higher educational institutions, including revenue growth, expenditures, assets, liabilities, and others as stated by Key Performance Indicators Higher Education – Most Common KPIs in 2022. Meanwhile, Yaakub and Mohamed (2019) also found that return on investment is rarely used because it is hard to measure; moreover, ROI is only applicable to some HEIs.

According to Jereb et al. (2018), there is no surprise considering that student satisfaction is now often used as a measure of HEI's performance. However, this does not imply that HEI has no other considerations when measuring its performance because there are still a lot of non-financial measures that can be used to measure HEI's performance such as employee turnover, employee satisfaction, and others. Therefore, as non-financial performance measures offer a comprehensive picture of a HEI's operations, it is imperative to monitor them as well(11 Non-Financial Measures of Performance to Boost Success, 2022).

Therefore, adopting financial and non-financial measures will help higher educational institutions to measure their performance and to know if they are doing well. However, it is advisable to utilize performance measures that are relevant to the institution.

Table 5 Mean and Standard Deviation of Management Accounting Strategies in Terms of Decision Support Systems in Higher Educational Institutions

Management Accounting Strategies	**N**	**Mean**	**Std. Deviation**	**Qualitative Description**
Break-even analysis	17	3.59	.712	Highly used
Cost control analysis	18	3.56	.705	Highly used
Service profitability Analysis	18	3.50	.786	Highly used
Student profitability	18	3.17	.924	Moderately used
Short-run Analysis	**18**	**3.44**	**.684**	**Moderately used**
Payback Period	15	3.07	.884	Moderately used
Accounting rate of return	15	3.40	.828	Moderately used
Net present value	15	3.07	.884	Moderately used
Internal rate of return	16	3.06	.929	Moderately used
Long-run Analysis	**16**	**3,14**	**.758**	**Moderately used**
Decision Support System	**20**	**2.97**	**1.173**	**Moderately used**

Legend: 3.50-4.00 Highly used *1.50-2.49 Rarely used*

2.50-3.49 Moderately used *1.00-1.49 Not used*

Based on Table 5, short-run analysis has an overall mean of 3.44 (SD=.684) and described is moderately used. Under short-run analysis, the break-even analysis got the highest mean ($\bar{x}$ =3.59, SD=.712) while student's profitability got the lowest mean ($\bar{x}$ =3.17, SD= .924). Accordingly, break-even analysis, cost-

control analysis, and service profitability analysis were described as highly used by the institution while student profitability was moderately used in making decisions. For long-run analysis it has a mean of 3.14 (SD=.758) and it is moderately used. Under the long-run analysis, the accounting rate of return was rated with the highest mean of 3.40 (SD= .828) while the internal rate of return was rated with the lowest mean of 3.06 (SD= .929). Moreover, the payback period, accounting rate of return, net present value, and internal rate of return were all used moderately.

Established organizations utilize various management accounting tools for decision-making, and one of these essential tools is break-even point analysis (Gubio et al., 2022). Furthermore, research suggests that organizations should prioritize using the break-even point as a primary tool for decision-making and strategic planning due to its significant impact, effectiveness, and precision in decision rationalization and control. Consequently, break-even analysis can enhance the efficiency and effectiveness of higher educational institutions.

In contrast, Mubashar and Tariq (2018) found that non-financial firms commonly employ methods such as net present value (NPV), internal rate of return (IRR), and payback for financial analysis. Among these methods, NPV is the most frequently utilized, with 61.4% of organizations consistently relying on it. On the other hand, Baker et al. (2017) revealed that 63% of respondents favored the accounting rate of return (ARR), making it a widely used method, while net present value (NPV) was less commonly employed. Nevertheless, the payback period and the accounting rate of return are valuable analytical tools in specific scenarios, mainly when applied alongside other evaluation techniques (Franklin, 2019).

Therefore, it can be deduced from the survey findings that using the accounting rate of return as a long-term analytical tool for decision-making can benefit higher educational institutions. Moreover, as can be seen in the table above, the internal rate of return has the lowest mean rank. The internal rate of return (IRR) analysis received the lowest mean rank primarily because it is a widely employed method in business analysis (Hofstrand, 2023).

Overall, results suggest that utilizing the accounting rate of return for long-term decision support can be advantageous for higher educational institutions. This approach aids in the creation of informed decisions, risk assessment, and the development of sound financial plans. Even though the internal rate of return is less frequently used, it remains a viable strategy for decision-making, offering accurate results when needed.

Table 6 Mean and Standard Deviation of Management Accounting Strategies in Terms of Strategic Management Accounting in Higher Educational Institutions

Management Accounting Strategies	**N**	**Mean**	**Std. Deviation**	**Qualitative Description**
Target costing for new programs or courses	20	3.10	.788	Moderately used
Strategic costing in determining the institution's strategy	19	3.53	.513	Highly used
An analysis of the costs incurred in each of the activities in the institution's value chain	20	3.60	.503	Highly used
Monitoring the costs that occur across stages of offering new courses or programs	20	3.10	.852	Moderately used
The systematic collection of data on competitors 'price reaction, demand reaction, and market position	20	2.90	.912	Moderately used
Strategic Management Accounting	**20**	**3.24**	**.522**	**Moderately used**

Legend: 3.50-4.00 Highly used *1.50-2.49 Rarely used*

2.50-3.49 Moderately used *1.00-1.49 Not used*

Table 6 reveals the various financial measures of strategic management accounting, indicating that the analysis of costs incurred in each activity of the institution's value chain has the highest mean ($\bar{x}$ =3.60, SD=.503), and it is described as highly used by the HEIs. In contrast, the lowest mean was the systematic collection of data ($\bar{x}$ =2.90, SD=.912) which is used moderately.

With a specific focus on higher education institutions, analysis of costs in the institution's value chain is a tool that allows organizations to determine their internal environment. It facilitates the presentation and examination of all aspects associated with the services offered in a systematic manner (ZehraOncer, 2018). Meanwhile, value chain analysis is a vital tool used by universities to identify their strengths and competitive advantages (Minggu et al.,2020). Once universities have identified their competitive edge, they can establish strategies for executing their various functions by employing strategic management accounting. Therefore, the design of strategic management accounting enables universities to analyze competitor's costs, strategies, and quantities, providing valuable insights into their comparative position against their competitors.

Table 7 Mean and Standard Deviation of Management Accounting Strategies in Terms of Costing System, Budgeting System, Decision Support System, Performance Evaluation System and Strategic Management Accounting in Higher Educational Institutions

Management Accounting Strategies	N	Mean	Std. Deviation	Qualitative Description
Costing System	20	2.58	1.570	Moderately used
Budgeting system	20	3.05	.585	Moderately used
Performance Evaluation System	20	3.40	.572	Moderately used
Decision Support System	20	2.97	1.173	Moderately used
Strategic Management Accounting	20	3.24	.522	Moderately used

Legend: 3.50-4.00 Highly used *1.50-2.49 Rarely used*

2.50-3.49 Moderately used *1.00-1.49 Not used*

In general, the respondents rated each of the management accounting strategies in terms of costing system, budgeting system, decision support system, performance evaluation system and strategic management accounting from 2.50-3.49 described as moderately used by higher educational institutions.

Subsequently, when it comes to the extent of the use of management accounting strategies, the performance evaluation system got the highest mean of 3.40 (SD=.572) In contrast, the costing system got the lowest mean of 2.58 (SD= 1.570). However, all five management accounting strategies (MAS)regarding decision-making were moderately used in higher educational institutions in Nueva Vizcaya.

The performance evaluation system is essential for HEIs to enhance and calibrate their organizational performance (Jardali et al., 2020). Thus, performance measurements matter because they help institutions make good decisions and provide a deep insight into what makes an institution successful (Arun, 2021). Regarding the costing system, Brandt-Siemers(2019) found that it is only sometimes used to communicate financial information. Also, it was stated in his study that the ongoing use of the costing system to make daily decisions could have been at the desired level. However, HEI can still adopt different costing systems

that are only applicable to their institution for them to gain a comprehensive understanding of their cost structures from various perspectives. With that, it can help them identify cost drivers, allocate resources efficiently, and make informed decisions about program viability, resource allocation, and pricing (Lawson et al.,2019).

The research of Sanches et al. (2022) further indicated that for HEIs to effectively meet decision-makers information needs, they need various informative structures. In management accounting, this indicates that there is no one best way to value goods or services, make decisions, monitor procedures, or plan and oversee operations. In essence, focusing exclusively on more than a single system is required. That is why various management accounting strategies are available for organizations to apply in their decision-making processes for long-term success (Client Hub Team, 2021).

Higher educational institutions do need to implement a performance evaluation system in making decisions to improve their overall organizational performance and achieve its intended end. However, when it comes to costing systems, it is not usually used in HEI because they are more common in business industries.

Section 3. Difference Between the Use of Management Accounting Strategies When Grouped by Profile Variables

Table 8 presents the significant difference in the use of management accounting strategies according to sex, age and position.

Table 8 The Significant Difference of the Use of Management Accounting Strategies According to Profile Variables in Higher Educational Institutions

Profile		**N**	**Mean Rank**	**Test Statistic**
Sex	Male	7	7.64	U=25.5, p=.115
	Female	13	12.04	
Age	45 years old and below	8	11.06	U= 43.5, p=.734
	46 years old and above	12	10.13	
Position	Top	10	11.15	U=43.5, p=.631
	Middle	10	9.85	

*significant at 0.05

As the table shows, there is no significant difference in the respondents' management accounting strategies when grouped according to sex, age, and position based on the overall computed p-value of 0.115, p-value of 0.734, and p-value of 0.631, respectively. However, marital status was not included in the data since it is not normally distributed.

Moreover, when it comes to sex, the study of Stern and Madison (2022) stated that there is no indication that one group is superior to the other or more valuable than the other overall based on differences between the groups. However, one group will have an advantage or be more likely to succeed than the other in specific situations.

In contrast with the findings, a study revealed that age was associated with a higher level of expertise derived from both financial and non-financial experiences (Eberhardt et al.,2018). This connection between age and improved financial knowledge remained statistically significant even after considering the impact of financial literacy. As highlighted in their study, when older individuals face a novel financial decision or

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

management strategy for the first time, they may face comparable challenges to younger individuals.

In comparison to the result, for organizations of significant size with multiple staff members in a particular department, roles serve a vital purpose in ensuring that everyone has distinct responsibilities that avoid redundant tasks, as outlined by Feigenbaum(2018). Additionally, these professionals exert considerable influence on businesses by molding the decision-making process and actively participating in developing business strategies (Franklin,2019).

The results of the profile variables, sex, age and position in the organization are not significant when it comes to decision-making in management accounting strategies. This implies that sex, age and position in the organization do not a have substantial impact, stating that there is a level of consistency or similarity in how the respondents make decisions in the context of management accounting.

Section 4. Extent to Which Management Accounting Strategies Have Helped Management in Decision-Making

Table 9 presents the extent to which management accounting strategies have helped management in decision-making

Table 9 Mean and Standard Deviation to Which Management Accounting Strategies Have Helped Management in Decision-Making in Higher Educational Institutions

	N	Mean	Std. Deviation	Qualitative Description
Planningfuture strategies, tactics and operations	20	3.55	.686	Very high extent
Controlling current activities	20	3.65	.489	Very high extent
Measuring and evaluating performance	20	3.55	.686	Very high extent
Optimizing the use of the institution's resources	20	3.70	.470	Very high extent
Reducing subjectivity in decision-making	20	3.50	.513	Very high extent
Improving internal and external communication	20	3.60	.503	Very high extent
Total	**20**	**3.59**	**.431**	**Very high extent**

Legend: 3.50-4.00 Very High Extent *1.50-2.49 Low Extent*

2.50-3.49 High Extent *1.00-1.49 No Extent*

Table 9 shows that all the items indicated have a very high extent to which management accounting strategies have helped management in decision-making. Based on the results, the highest mean was optimizing the use of the institution's resources ($\bar{x}$ =3.70, SD=.470), while the lowest mean was reducing subjectivity in decision-making ($\bar{x}$ =3.50, SD=.513).

As per Lin and Bai (2019), optimization is extensively utilized because it encompasses various variables and equations to model diverse management outcomes and assess potential trade-offs accordingly. Moreover, optimization can account for uncertainties involving fuzzy variables, aiding in estimating uncertainties and risk control throughout the management phase. Additionally, according to Gupta (2023), optimizing resources within an organization or institution is the preferred technique and strategy for various reasons.

Furthermore, this strategy is widely adopted because resource optimization encompasses different

dimensions, such as capability, cost, utilization, location, and season, making it adaptable and applicable to various types of organizations, all to ensure profitability and successful project delivery.

An individual's decision-making style can have a significant impact on the development and utilization of a management accounting system, ultimately influencing the effectiveness of management accounting strategies (Chang et al.,2023). When managers have a deep understanding of their decision-making styles, including their shortcomings and limitations, they are better equipped to address any subjective biases, thereby enhancing the overall effectiveness of management accounting strategies (MAS).

The result implies that there is a very high extent to which management accounting strategies have helped management in decision-making**.** Because these activities can have an impact on the overall performance of the organization, hence, the use of management accounting strategies (MAS) in all the activities is necessary to enhance the performance of the institution and enable it to achieve its goals.

Section 5. Contingent Factors Affect the Extent of Use of Management Accounting Strategies in Higher Educational Institutions

Table 10 displays the contingent factors which are market competition, qualified internal accountants, management participation and organizational technology that affect the use of management accounting strategies.

Table 10 Frequency and Percentage Distribution of Contingent Factors in Higher Educational Institutions

Factors	**Categories**	**Frequency**	**Percent**
A. Market Competition	Not at all	1	5.0
	High	10	50.0
	Very High	8	40.0
	No answer	1	5.0
Factors	**Categories**	**Frequency**	**Percent**
B. Qualified Internal Accountant			
Highest qualification	CPA	19	95.0
	Master's	1	5.0
C. Management Participation	Low	1	5.0
	High	6	30.0
	Very High	13	65.0
D. Organizational Technology			
Digital Information	Very Frequently	12	60.0
	Frequently	7	35.0
	No Answer	1	5.0
Computer Controlled Machines	Very Frequently	9	45.0

Frequently	8	40.0
Rarely	2	10.0
No Answer	1	5.0

A. Market Competition

Based on the result, half (50%) of the decision-makers answered that there is high market competition. This indicates that market competition is a significant determinant of management accounting strategies.

Due to intense market competition and the complexity of work, particularly at the administrative level, all organizations and industries are currently facing a variety of challenges. As a result, leaders and administrators need a specific solution to meet these challenges (Waham et al., 2020). In a highly competitive environment, departments and faculties need to establish a strategic plan and define specific criteria for evaluating the productivity of units and the performance of individuals (Ngigi, 2017).

This implies that the implementation of contingent factors such as having a high market competition does not only provide valuable insights but also empower organizations to gain a competitive edge over their rivals. This refers to their considerations on how extensively they are using the management accounting strategies (MAS). For example, if there is high competition in the number of enrollees, higher educational institutions should use specific management accounting strategies to make a better decision on how they can increase their expected number of enrollees. Hence, by implementing effective management accounting strategies, the organization may be able to adopt unique approaches, specialized programs, and partnerships with industries, fostering diversity within the education sector.

B. Qualified Internal Accountant

Table 10 shows that the majority of the accounting staff are certified public accountants (CPA), which is 95%. Moreover, only 5% of the accounting staff hold a master's degree as their highest qualification.

Qualified accounting staff is important as it would affect the organization's ability to succeed, grow and sustain itself (Nair&Nian, 2017). As stated in the study of Ishola et al. (2018), the performance of accounting staff members continues to be the key factor that gives most organizations an advantage over rival organizations when faced with difficult challenges.

One of the elements that could influence the organization's adoption of management accounting strategies (MAS) is the qualification level of the accounting staff (Nair &Nian, 2017). To about this, when it comes to implementing modern management accounting techniques, the lack of competent accountants might be a significant factor. This is because an accounting qualification may help HEIs maintain and improve financial management, including better budgeting, financial analysis, and resource allocation.

As most of the respondents are CPAs or those with masters since, they are assumed to be more knowledgeable in the usage of management accounting strategies. So, if they have better technical knowledge, then the use of management accounting strategies is more extensive.

Accounting professionals are indeed vital in maintaining fiscal responsibility, ensuring compliance with financial regulations, and promoting transparency. Their expertise is not only limited to traditional areas of accounting but also many other areas such as budgeting, financial planning, internal and external audit, and other related functions.

C. Management Participation

The majority of respondents (65%) perceive the level of management participation as very high, signifying

an active involvement of management in the management accounting strategies. However, 5% of respondents perceive the level of management participation in the study to be low.

According to Rashid et al. (2020), management is seen as less involved in implementing management accounting strategies. It may prioritize other factors over these strategies, potentially resulting in less alignment between financial and strategic goals in the organization. However, lately, top management is taking a proactive role in implementing management accounting strategies aimed at improving the overall function of the organization. This involvement of top management is crucial for aligning financial and strategic goals and ensuring that resources are distributed in a way that supports the strategic objectives of the organization (Rashid et al., 2020).

Given that top management participation is very high and the management accounting strategies of the respondents in this study are moderately high, it may be assumed that the more actively top management participates in strategy development, the more widely the management accounting strategies are used. As a result, management involvement encourages improved coordination and communication among management team members at HEIs. This cooperative strategy ensures the long-term viability of HEIs by striking a balance between financial responsibility and the accomplishment of the institution's academic and strategic objectives.

D. Organizational Technology

A significant majority 60%, reported that digital information was used very frequently. However, 10% rarely used digital information, and 45% of the respondents reported using computer-controlled machines very frequently.

To the study of Kaithavalappil (2023), technology is reshaping the landscape of management accounting presenting both opportunities and challenges for professionals in the field. Embracing innovations like data analytics, automation, and cloud computing has revolutionized management accounting strategies. Moreover, it enables the management to make more informed decision-making improve efficiency, enhance collaboration, and increased transparency.

Prior studies have also demonstrated the impact of accounting digitization on digital competitiveness (e.g. Ponomarenko et al., 2021). Universities need to implement information systems to handle high levels of volatility, uncertainty, complexity, and ambiguity in a competitive market. Furthermore, the advancement of digitization in higher education has an impact on raising digital competitiveness and enhancing universities' reputations, increasing the number of students, educational quality, and cost structures (Ponomarenko et al., 2021).

This indicates that digital information is highly used in management accounting strategies which helps management in enhancing the data reports, data accuracy, and data efficiency of higher educational institutions. Technology integration in Higher Education Institutions (HEIs) has enabled digital tools, electronic databases, and automation technologies for academic productivity and record-keeping. These innovations have revolutionized the HEI landscape, making administrative tasks more efficient and providing a more streamlined and dynamic educational experience.

Moreover, computer-controlled machines assist the organization, particularly the decision-makers, in arranging and assessing data and information to deliver information quickly and effectively (Management Information Systems and Accounting Information Systems, 2019). This aids in the decision-maker's ability to base their choices on the data and analysis that the computer-controlled machine offers.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

Thus, it can be said that computer-controlled machine is highly used in management accounting strategy as tool to produce information that is useful for management in planning, control, and decision-making. Incorporating computer-controlled machines into management accounting strategies in HEIs enhances efficiency, data accuracy, and overall financial management effectiveness, ultimately contributing to better decision-making and financial sustainability within educational institutions.

Section 6. Relationship Between the Use of Management Accounting Strategies and Contingent Factors

Table 11 presents the relationship between the use of management accounting strategies and contingent factors.

Table 11 Correlation Between the Use of Management Accounting Strategies (MAS) and Contingent Factors in Higher Educational Institutions

			A	B	C	D	E	F
Spearman's rho	strategies	Correlation Coefficient	.308	.	-.287	.363	.226	.335
		Sig. (2-tailed)	.199	.	.220	.116	.351	.161
		N	19	19	20	20	19	19

*significant at 0.05

A– *Market competition, B- Qualified Internal Accountant (Institution's Accounting Staff), C- Qualified Internal Accountant (Highest Qualifications), D-Management Participation, E- Digital Information, F-Computer Controlled Machine*

The result indicates that there is no significant relationship between the use of management accounting strategies and contingent factors.

There was a positive correlation (r=0.308) between market competition and management accounting strategies (MAS). However, the p-value (sig=0.199) suggested that the relationship observed was not statistically significant. Also, there was no correlation (r=-0.287) between the qualification level of the institution's accounting staff and the use of management accounting strategies (MAS). The p-value (sig=0.220) indicated that this relationship was not statistically significant. In management participation, there was a positive correlation (r=0.363) between the management's participation and the extent of using management accounting strategies (MAS). However, the p-value (sig=0.116) suggested that the relationship observed was not statistically significant. There is also a positive correlation (r=0.226) between the availability of digital information and the use of management accounting strategies (MAS). However, it showed that there was no significant relationship (sig=.351). In computer-controlled machines, there was a positive correlation (r=0.335) between the presence of computer-controlled machines and the use of management accounting strategies (MAS). The p-value (sig=0.161) suggests that this correlation was not statistically significant.

According to Prihastiwi and Sholihin (2018), the use of management accounting strategies (MAS) is minimally affected by market competition and uncertainties. Hence, increasing competition among companies or uncertain economic conditions does not significantly alter the usage of management accounting strategies (MAS), implying that these strategies are perceived as necessary and relevant regardless of external market pressures.

In contrast to earlier research studies, the qualifications and expertise of internal accountants are generally seen as a positive contributor to the successful adoption of management accounting strategies. Although internal accountants do not necessarily influence adoption of management accounting strategies, they have more contribution towards implementing management accounting strategies (Hadid & Al-Sayed, 2021).

In addition, top management is seen as less involved in implementing management accounting strategies as they may focus on other factors over these strategies, perhaps leading to a lack of congruence in the organization's financial and strategic aims. However, according to Rashid et al. (2020), senior management is proactively putting management accounting concepts into practice enhancing the organization's overall performance. Top management's involvement is essential for coordinating financial and strategic objectives and making sure that resources are allocated in a way that promotes the strategic goals of the company.

In terms of technology, computer-controlled machines and digital information do not consistently associate positively with adopting management accounting strategies; the relationship is not universally positive across all scenarios. Additionally, technological advancements might sometimes lead to cost-cutting measures that do not involve management accounting strategies; however, from the findings of Rashid et al. (2020), the adoption of management accounting strategies is positively correlated with factors such as company size, product quality, technology, digital information, and the degree of interdependence.

The data suggests a positive correlation between market competition and management accounting strategies (MAS) implying that elevated market competition tends to align with more advanced management accounting strategies. However, the relationship is not statistically significant. Moreover, the qualification level of the internal accountant does not present a statistically significant correlation with MAS, indicating that the skill level of internal accountants may not be a decisive factor in shaping management accounting strategies (MAS). When it comes to management participation, it is also positively correlated to management accounting strategies (MAS) suggesting that active managerial involvement aligns with refined strategies, yet, there is a statistically insignificant relationship. Similarly, there is a positive correlation between organizational technology and management accounting strategies (MAS) suggesting that as the institution uses computer-controlled machines and obtains digital information more frequently, it positively influences the strategies. However, the relationship is not statistically significant.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. There is a higher percentage of females since women occupy a higher percentage of senior management positions involved in decision-making in the Philippines. Also, there is a higher percentage of older individuals, and married individuals. Top and middle management levels also have the same percentage of respondents.

2. The majority of management accounting strategies regarding decision-making. were moderately used in higher educational institutions in Nueva Vizcaya These include costing systems, budgeting systems, performance evaluation systems, decision support system, and strategic management accounting.

3. There were no significant differences in management accounting strategies based on sex, age, or position.

4. The results indicate that management accounting strategies had a very high extent when it comes to management decision-making. The findings indicated that optimizing the use of the institution's resources has a very high extent when it comes to management decision-making, which suggests that

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue V May 2024

optimization is a widely favored strategy due to its ability to consider various variables and equations to model different management outcomes and assess trade-offs effectively. Moreover, reducing subjectivity in decision-making is unexpected, as it is often challenging to eliminate subjectivity in decision-making, but management accounting strategies can certainly help mitigate it.

5. The successful utilization of management accounting strategies is collectively influenced by various contingent factors. These factors include market competition, qualified internal accountants, management participation, and organizational technology. These factors play a significant role in conveying a meaningful message to individuals within HEIs, promoting continuous improvement in these areas due to their positive impact on overall performance through management accounting strategies (MAS).
6. There is a positive correlation between the contingent factors (market competition, management participation and organizational technology) and the management accounting strategies but not statistically significant. However, in terms of qualified internal accountants, there is a negative correlation although not statistically significant. Thus, due to the limited sample size and the need for statistical significance, the relationships between the contingent factors and management accounting strategies (MAS) cannot be considered significant in the broader population.

Recommendations

For Higher Educational Institutions (HEIs), there is a pressing need to evaluate which management accounting strategies (MAS) are effective and helpful in reaching their goals and improving their overall performance taking into consideration the variables enclosed in the different management accounting strategies (MAS) that are moderately used and further improve these. These management accounting strategies are categorized into costing system, budgeting system, performance evaluation system, decision support system and strategic management accounting. Under the first management accounting strategy (MAS) which is the costing system, HEIs need to improve their use of job order costing, batch costing, absorption costing and activity-based costing which were moderately used, while the rest of the costing systems which are highly used must be sustained. Secondly, all the items that were moderately used which are included under the budgeting system require further improvements. Thirdly, under a performance evaluation system that has both financial measures and non-financial measures, there is also a need to improve those items of separate measures that were moderately used such as return on investment under the former measure and the number of student complaints, employee turnover and absentee rates under the latter one. The rest of both measures which were highly used should also be sustained. Fourth, HEIs require improvements for those items that were evaluated as moderately used under the decision support system which are classified as short-run analysis (student profitability) and long-run analysis. Lastly, under strategic management accounting, HEIs need to improve target costing for new programs or courses, monitor costs that occur across stages of offering new courses or programs and systematically collection of data on competitor's price reaction, demand reaction and market position, as they are moderately used. Strategies under strategic costing and analysis of the costs can be sustained as they were highly used. Also, HEI can incorporate additional management accounting strategies into their decision-making processes to further enhance their ability to make informed and strategic choices. Furthermore, it is necessary to equip accountants with extensive knowledge about management accounting strategies (MAS). Moreover, it is also suggested that accountants should undergo several trainings within areas of MAS that are moderately explored and also have team-building activities to gain valuable insights that will enable institutions to optimize resource allocation, assess performance, and adapt to dynamic market conditions.

For the School of Accountancy and Business, incorporating management accounting into the current curriculum is highly advantageous for students. By studying and focusing on the subjects on management accounting, such as cost accounting, strategic cost management, strategic business analysis, financial management, performance management systems, and strategic audit, students can gain valuable insights into

cost analysis, budgeting, performance evaluation, and strategic decision-making. Additionally, the school may conduct seminars, activities, and training about these subject matters to provide more opportunities for students to prepare them for real-world scenarios and enhance their employability as businesses highly value individuals who can contribute to their financial success and sustainability, particularly if they find themselves working in an institution like HEIs. Furthermore, integrating management accounting into the curriculum fosters a holistic understanding of business operations, making graduates more well-rounded and effective in various roles they may undertake in their careers.

For future researchers, to enhance the validity and reliability of findings, it is advisable to employ an extensive sample size rather than focusing on a few selected HEIs in Nueva Vizcaya, enabling a more comprehensive and accurate understanding of management accounting strategies (MAS) in various organizational contexts. Furthermore, merging quantitative and qualitative research methods, through including open-ended questions can offer a more comprehensive insight into management accounting strategies (MAS), revealing the underlying reasons for management accounting practices. Researchers should also aim to expand the range of contingent factors considered, acknowledging the multifaceted nature of management accounting in today's dynamic business environment. Additionally, it is recommendable to better use HEI as their profile. Lastly, simplified questionnaires can facilitate data collection, ensuring a more efficient research process. By incorporating these elements into their research, future researchers can contribute to a deeper understanding of management accounting strategies.

REFERENCES

1. *11 non-financial measures of performance to boost success*. (2022, October 18). Indeed, Editorial Team. https://www.indeed.com/career-advice/career-development/non-financial-measures-of-performance?fbclid=IwAR0ne1dbObiQazsnWyf0hIwUkpCAmcRriZ9RqFJ4YIamY-aceBNsJYEQhkE
2. Abba, M., Lawan, Y., & Suleiman, N. (2018). Explored and critique of contingency theory for management accounting research. *Journal of Accounting and Financial Management*,4, 40– 50. https://scholar.google.com/scholar_lookup?title=Explored+and+Critique+of+Contingency+Theory+for+Mana
3. Abdullah, N., Krishnan, S., Zakaria, A., & Morris, G. (2022). *Strategic management accounting practices in business*: *A systematic review of the literature and future research directions*. https://doi.org/10.1080/23311975.2022.2093488
4. Acido, J., &Kilingkilong, DA. (2022). *Resource management practices of a Public higher institution in the Philippines* (ED620430).ERIC. https://files.eric.ed.gov/fulltext/ED620430
5. Agarwal, (2023). *Management accounting -performance Evaluation*. www.linkedin.com. https://www.linkedin.com/pulse/manageme nt-accounting-performance-evaluation-ashish-agarwal?
6. Aggarwal, C. (2023). *Top 10 functions of management accounting*. Shiksha Online. https://www.shiksha.com/online-courses/articles/what-are-management-accounting-functions/amp
7. *Aldersgate College Inc. : Creating a brighter future*. (2023). https://aldersgate.edu.ph/
8. Al Madhoun, K. (2020, May 14). Effects of modern strategic management accounting techniques on performance of commercial banks in Palestine: an empirical study. *Journal of Economics, Finance, and Accounting Studies, 2*(1),35-48.https://alkindipublisher.com/index.php/jefas/article/download/1420
9. Arun, G. (2021, December 16). *Importance of measuring and managing employee performance at work*. Synergita https://www.synergita.com/blog/importance-of-measuring-and-Managing-employee-performance-at-work/
10. Baker, HK., Jabbouri, I., &Dyaz, C. (2017). Corporate finance practices in Morocco. *Managerial Finance, 43*(8), 865–880. https://doi.org/10.1108/mf 12- 2016-0359
11. Brandt-Siemers, JB. (2019). *Activity-based costing in higher education: A case study of three implementations*. ProQuest, 22618756.

https://www.proquest.com/openview/6656c8859138225b89f5c3e5b0afb0a8/1?pq-origsite=gscholar&cbl=18750&diss=y

12. Bu, J. (2022). *Research on the strategic management of local universities under the background of comprehensive reform of universities*. Higher Education Studies. https://doi.org/10.5539/hes.v12n3p97
13. CFI Team. (2023). *Managerial* Corporate Finance Institute.https://corporatefinanceinstitute.com/resources/accounting/man gerialaccounting/
14. Chang, K., Lasyoud, A., & Osman, D. (2023). Management accounting system: Insights from the decision-making theories. *Social Sciences & Humanities Open, 8*(1), 100529. https://doi.org/10.1016/j.ssaho.2023.100529
15. Client Hub Team. (2021, September 6*). Here are 7 tried-and-true management accounting* Client Hub Blog. https://clienthub.app/blog/management-accounting-methods/
16. Coombs, H., Hobbs, D., & Jenkins, DE. (2019). *Management accounting: Principles and applications*. Sage Publications.https://www.pearson.com/en-au/media/1950308/9781442549074.pdf
17. Decoro, J.C., Liao, C.M., & Soriano, J.L. (2022). *The application of management accounting practice (MAPs)in multi-purpose cooperatives in Nueva Vizcaya*. Saint Mary's University. Nueva Vizcaya, Philippines.
18. De Oliveira, M., Arrais, M., Reis, D., Vieira, R., &Veroneze, G. (2019). Cost management in educational services.*International Journal for Innovation Education and Research, 7*(10), 883–893. https://doi.org/10.31686/ijier.vol7.iss10.1837
19. Eberhardt, W., Bruin, W., &Strough, J. (2018). Age differences in financial decision making: The benefits of more experience and less negative emotions. *Journal of Behavioral Decision Making,* 1-https://doi.org/10.1002/bdm.209
20. Franklin, M. (2019, February 14). *2 evaluate the payback and accounting rate of return in capital investment decisions* .https://openstax.org/books/principles- managerial-accounting/pages/112-evaluate-the-payback-and-accounting- rate-of-return-in-capital investmentdecisions?fbclid=IwAR2lOv_kZNZRgrNQ0bEHAHXcELSA6dPirclbucQrToMSxZYg6zPoOp_Lv
21. Feigenbaum, E. (2018, October 29). *The role of organizational structure in an organization*. Small Business – Chron.com. https://smallbusiness.chron.com/role-organizational-structure-organization-3794.html
22. Grant Thornton Philippines. (2018) *Women in business survey*. https://www.grantthornton.com.ph/news-centre/philippines-tops-2018-women-in-business-survey/
23. Gubio, Z., Mustapha, LO., &Agbi, SE. (2022). The effect of break-even-point analysis in decision making in some selected block industries within Kaduna *Journal of Research in Business and Management, 10*(5), 22-32.
24. Gupta, O. (2023, August 18). *What is resource optimization, and why is it important?* Resources Library. https://www.saviom.com/blog/resource-optimization-and-its-importance/#:~:text=Resource%20optimization%20allows%20organizations%20to, and%20increase%20engagement%20and%20productivity.
25. Hadid, W., & Al-Sayed, M. (2021). Management accountants and strategic management accounting: The role of organizational culture and information systems. *Management Accounting Research,* 50, https://doi.org/10.1016/j.mar.2020.100725
26. Higher Education. (2018). *National Center for Education Statistics, U.S. Department ofEducation* https://nces.ed.gov/ipeds/glossary/index.asp?id=720
27. Hofstrand, D. (2023). *Capital budgeting basics*. IOWA State University-AG decision https://www.extension.iastate.edu/agdm/wholefarm/html/c5-240.html
28. Hutaibat, K. (2019). Accounting for strategic management, strategizing and power structures in the Jordanian higher education sector. *Journal of Accounting & Organizational Change, 15*(3), 430-452. https://doi.org/10.1108/JAOC-062018-0054
29. Indeed Editorial Team. (2023). *The types of costing in cost accounting*. Indeed Career Guide. https://www.indeed.com/career-advice/careerdevelopment/types-of-costing

30. Ishola, A.A., Toyin, A.S., &Tanimola, F.A. (2018). Impact of educational, professional qualification and years of experience on accountants' job performance. *Impact of Educational, Professional Qualification and Years of Experience on Accountant Job Performance, 4*(1), 32–44. https://doi.org/10.5281/zenodo.1210796
31. IvyPanda. (2019, June 24). *Decision-making with managerial* accounting. https://ivypanda.com/essays/decision-making-withmanagerial-accounting/
32. Jardali, HA., Khaddage-Soboh, N., Abbas, M., &Mawed, NA. (2020*). Performance management systems in Lebanese private higher education institutions: Design and implementation challenges*. Higher Education, Skills and Work-based Learning, 11(2), 297–316. https://doi.org/10.1108/heswbl-01-2020-0009
33. Jayasmita, D. (2019). *Contingency approach to managemen* In Economics Discussion. https://www.economicsdiscussion.net/management/contingenc y-approach-to-management/31841
34. Jereb, E., Jerebic, J., &Urh, M. (2018). Revising the importance of factors pertaining to student satisfaction in higher education. *Organizacija, 51*(4), 271–https://doi.org/10.2478/orga-2018-0020
35. Johnson, M. (2019). *The alignment of the budget allocation process to the strategic Plan at a Liberal Arts University: A case study*. Digital Commons @ East Tennessee State University. https://dc.etsu.edu/etd/3530/?fbclid=IwAR0UiXm9EnYKg1QCKnYtIUewljKfwaMnSb24y_t3TZNvEKQIsDf
36. Jovanovic, T., &Dragija, M. (2018). Application of the accounting information at higher education institutions in Slovenia and Croatia – preparation of public policy framework. *International Journal of Public Sector Performance Management, 4*(4), 452. https://doi.org/10.1504/ijpspm.2018.095238
37. Kaithavalappil, U. (2023, July 11). *Embracing technology: The future of management accounting.* https://www.linkedin.com/pulse/embracing-technology-future-management-accounting-kaithavalappil?trk=article-ssr-frontend-pulse_more-articles_related-content-card
38. Kasap, S., Abbas, D., Khajah, M., &Ashknan, M. (2020). Developing a knowledge driven decision support system for university/college selection problem in Kuwait. *International Journal of Information and Education Technology, 10*(1), 20–25. https://doi.org/10.18178/ijiet.2020.10.1.1333
39. *Key performance indicators higher education – Most common KPIs in 2022*. (n.d.). https://www.cascade.app/blog/higher-education-kpis
40. *King's College of the Philippines – Bambang*. (n.d.). https://www.edukasyon.ph/schools/king-s-college-of-the-philippines-bambang
41. Krishnan, V. (2021, August 23). *Managerial accounting – Definition, objectives & techniques*. Zoho Books. Essential Business Guides. https://www.zoho.com/books/guides/management-accounting.html
42. Labro, E., &Cokins, G., (2019). *Costing systems*. ResearchGate. https://www.researchgate.net/publication/331024975_Costing_Systems
43. Lawson, R., Cokins, G., Hicks, D.,Krumwiede, K., Swain, M., & White, C. (2019). *Costing system attributes that support good decision making.* Institute of Management Accountants. https://asiapac.imanet.org/researchpublications/statements-on-management-accounting/costing-systemattributes-that-support-good-decision-making
44. Laylo, L. (2020). Technological management efficiency on higher educational institutions towards organizational performance. *Asia Pacific Journal of Academic Research in Social Sciences, 5*(2), 35-51. https://www.apjarss.org
45. Lin, C., & Bai, Q. (2019, April 1). *Optimization in decision making in infrastructure asset management: A review.*Applied Sciences. Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/app9071380
46. Liu, W., & Zhang, C. (2022). Research on the development strategy of universities. *Future and Development*, 3,56-60.
47. Ma, L., Chen, X., Zhou, J., &Aldieri, L. (2022). Strategic management accounting in small and medium-sized enterprises in emerging countries and markets: A case study from China. *Economies, 10(4), 74*. https://doi.org/10.3390/economies10040074

48. *Management information systems (MIS) & Accounting information system*. (2019, December 2). Toppr-guides. https://www.toppr.com/guides/accountancy/application-of-computers-in-accounting/management-information-systems-and-accounting-information-system/?fbclid=IwAR15EjmVAA3MWAC4ysUuPYxbAO5zRgi57bC_2aC3Nf5oNQhCItcvG6l_pG8
49. Marlina, E., Ardi, H., Samsiah, S., Ritonga, K., &Tanjung, A. (2020). Strategic costing models as strategic management accounting techniques at private universities in Riau, Indonesia. *International Journal of Financial Research, 11*(1), 274-283.https://doi.org/10.5430/ijfr.v11n1p274
50. MericiMinggu, A., Chariri, A., &JatmikoWahyu, T. (2020). Value chain analysis for strategic management accounting: Case studies of three private universities inKupang – East Nusa Tenggara.*International Conference on Economics, Business and Economic Education 2019*, 229–246. DOI 18502/kss. v4i6.6601
51. Momanyi, C., & Omari, SM. (2018). Does budgeting strategy influence organizational performance of public universities in Kenya? *International Journal of Novel Research in Humanity and Social Sciences,5*(4). https://www.noveltyjournals.com/upload/paper/Does%20B udgeting%20Strategy-1408.pdf
52. Mubashar, A., & Tariq, Y.B. (2018). Capital budgeting decision-making practices: evidence from Pakistan. *Journal of Advances in Management Research, 16*(2), 142-167.ideas.repec.org. https://ideas.repec.org/a/eme/jamrpp/jamr-07-2018-html
53. Nair, S., &Nian, YS. (2017). Factors affecting management accounting practices in *International Journal of Business and Management, 12*(10), 177. https://doi.org/10.5539/ijbm.v12n10p177
54. Nat. (n.d.). About the Program – *3rd leadership development program for higher education institutions inthe Philippines*. https://www.searca.org/3rd-ldphei/about
55. Ngigi, SK. (2017). *Challenges encountered by university administrators in performance management and job satisfaction*. ResearchGate. https://www.researchgate.net/publication/315383882_Challenges_Encountered_by_University_Administrators_in_Performance_Management_and_Job_Satisfaction_of_Academic_Staff_in_Kenyan_Universities
56. Ngo, Q. (2020*)*. Effectiveness of management accounting system in public healthcare sector: An empirical investigation in Vietnam. *Asian Journal of Business and Accounting, 13*(2), 147–180. https://doi.org/10.22452/ajba.vol13no2.6
57. Nguyen,T.M., & Nguyen, T.T. (2021). *The application of strategic management accounting: evidence from the consumer goods industry in Vietnam*. koreascience.kr. https://doi.org/10.13106/jafeb.2021.vol8.no10.0139
58. *NVSU – About*. (2023). https://nvsu.edu.ph/about
59. Ojra, J., Opute, AP., &Alsolmi, M. (2021). Strategic management accounting and performance implications: A literature review and research agenda. *Future Business Journal, 7*(1). https://doi.org/10.1186/s43093-021-00109-1
60. O'Neil, M. (2018, November 19). *Performance measurement: simplify your process with the right tools.* https://www.samewave.com/posts/performancemeasurement-simplify-your-process-with-the-right-tools
61. Oxford Reference (n.d.). *Contingency theory of management Accounting* .https://www.oxfordreference.com/display/10.1093/oi/authority.
62. Philanthropy Circuit. (2022). *Top challenges for nonprofit organizations* .https://philanthropycircuit.org/insights/top-challenges-for-nonprofitorganizations/
63. *PLT College, Inc.* (2019). https://www.edukasyon.ph/schools/plt-college-inc
64. Ponomarenko, V., Rayevnyeva, O., Aksonova, V., &Brovko, O. (2021). Digitization as a development factor of the innovative- active university. *Problems and Perspectives in Management, 19*(4), 213- https://doi.org/10.21511/ppm.19(4).2021.18
65. Posselt, J. (2019). Evaluation and decision making in higher education. In *Higher education* (pp.1–63). Springer Nature. https://doi.org/10.1007/978-3-030-11743-6_8-1

66. Prihastiwi, D.A., & Sholihin, M. (2018). Factors affecting the use of management accounting practices in small and medium enterprises: Evidence from *JurnalDinamikaAkuntansi*, *10*(2), 158-176. p. 5. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3424632
67. Rana T.,& Hoque Z. (2019). *Cost management for nonprofit and voluntary organisations*. 4324/9780429059056. https://www.researchgate.net/publication/335685434_Cost_Management_for_Nonprofit_and_Voluntary_Organisations
68. Rashid, MM., Ali, MM., & Hossain, DM. (2020). Strategic management accounting practices: a literature review and opportunity for future research. *AJAR (Asian Journal of Accounting Research)*, *6* (1), 109–132. https://doi.org/10.1108/ajar-06-2019-0051
69. Ria, T. (2022). Decision making in a higher educational organization: A literature *Majalah Inspiratif*, *8*(15). https://jurnal.unpand.ac.id/index.php/INSPI/article/download/1899/1833
70. Sanches, P., Souto, B.,& Rodríguez, S. (2022).Information needs in higher education institutions: Stock valuation or decision-making? *High Educ Policy*, 36, 497–509. https://doi.org/10.1057/s41307-022-00269-x
71. Schmidt, J. (2023, October 4). *Types of budgets*. Corporate Finance Institute. https://corporatefinanceinstitute.com/resources/fpa/types-of-budgets-budgeting-methods/?fbclid=IwAR3GfKWdCZQvCTDQdnz5aQWYxdN3TOlqSkaySwaQlGYnCZ1zIN3Piu3LIpI
72. Scott, S. (2017, November 21). *Arguments for variable costing in managerial decision making*. Chron Site Logo. https://smallbusiness.chron.com/arguments-variable-costing-managerial-decision-making-35925.html
73. Seggie, F.N., & Emil, S. (2020). *The SAGE encyclopedia of higher education.* SAGE Publications, Inc. eBooks. https://doi.org/10.4135/9781529714395
74. Shalabi, R. (2020). *The importance and applications of decision support systems (DSS) in higher education*. https://doi.org/10.6084/m9.figshare.12465599.v1
75. Shaqqour, O. (2020). Impact of vertical and horizontal integration between strategic management accounting and decision making on reducing financial failures case of Jordan. *Academy of Accounting and Financial Studies Journal*, *24*(5). https://www.abacademies.org/articles/Impact-of-Vertical-and-HorizontalIntegration-Between-Strategic-Management-1528-2635-24-4-581
76. SMU Official Site. (2023, November 28). *Vision-mission: SMU Bayombong*. https://smu.edu.ph/home/vision-mission/
77. Stern,C., & Madison, G. (2022). Sex Differences and occupational choice theorizing for policy informed by behavioral science. *Journal Economic Behavior and Organization.* https://doi.org/10.1016/j.jebo.2022.08.032
78. Tuovila, A. (2023, August 23). *Managing accounting meaning, pillars, and types* https://www.investopedia.com/terms/m/managerialaccounting.asp
79. United Nations. (n.d.). *The role of higher education institutions in the transformation of future-fit education.* https://www.un.org/en/academicimpact/role-higher-education-institutions-transformation-future-fiteducation
80. Volopay. (2023, May 17).*8 different types of budgets in business* Volopay. Volopay. https://www.volopay.com/blog/different-types-ofbusiness-budgets/
81. Vu, T., Dam,B., & Ha, T.(2022). *Factors affecting the application of strategy management accounting in Vietnamese logistics enterprises.*or.kr. https://doi.org/10.15722/jds.20.01.202201.27
82. Waham, MA., Rahman, R., &Mustaffa. W. (2020). The effect of transformational leadership on organizational performance through the mediating role of organizational culture in higher education institutions in Iraq.*International Journal of Psychosocial Rehabilitation*, *24*(8). https://www.researchgate.net/publication/343513714_The_Effect_of_Transformational_Leadership_on_Organ
83. Yaakub, MH., & Mohamed, ZA. (2019). Measuring the performance of private higher education institutions in Malaysia. *Journal of Applied Research in Higher Education*, *12*(3), 425–443. https://doi.org/10.1108/jarhe-10-2018-0208

84. Yu, P. (2021). *The new approach to budgeting in modern universities*. КиберЛенинка. https://cyberleninka.ru/article/n/the-new-approach-tobudgeting-in-modern-universities
85. ZehraOncer, A. (2018). Redesigning value chain for higher education and a proposal for analysis process. *Impact Journals*, 6(4).