

Knowledge management practices, competitive strategies, and the balanced scorecard: Basis for an organizational performance improvement framework

Lucasia, Nerissa O. ✉

Graduate School, Lyceum of the Philippines University - Batangas, Philippines



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Abstract

The study draws insights into the associations among the knowledge management practices, competitive strategies, and balanced scorecard dimensions among private higher educational institutions in Lipa City. The direct and indirect effects of knowledge management on the balanced scorecard were determined with competitive strategies treated as a mediating variable. Towards the end, a proposed framework for improving the overall performance of private HEIs is presented based on the interactions of the main variables. The study is pursued in light of the increasing demand for better knowledge management practices and competitive strategies among the HEIs to respond to the dynamic changes in the academic landscape. It is envisioned that the proposed combination of the main variables will aid the private HEIs in performing better in both the financial and non-financial perspectives. To accomplish the objectives of the study, a quantitative research approach was used. Descriptive and causal-explanatory research designs were utilized with an adapted questionnaire as an instrument. Primary data were collected from the faculty and staff of private higher educational institutions through a combined online survey using Google Forms and personally distributed questionnaires. Data were analyzed using descriptive statistics such as the weighted and composite means. Correlation and regression analysis were performed to explain the associations among the variables. Mediation analysis was conducted to determine whether competitive strategies mediate the effects of knowledge management practices on the balanced scorecard. The proposed framework was validated using WARP-PLS SEM. Results showed that private higher educational institutions have satisfactory knowledge management practices, competitive strategies, and balanced scorecard performance. Significant positive relationships were found among all variables studied. Positive significant effects were found between knowledge management practices and the balanced scorecard; knowledge management and competitive strategies; and competitive strategies and the balanced scorecard. It was also found that competitive strategies mediate the effects of knowledge management practices and the balanced scorecard. The structural equation model showing the mediating effects of competitive strategies between knowledge management and the balanced

scorecard is recommended as the framework for improved organizational performance.

Keywords: balanced scorecard, competitive strategies, knowledge management practices

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1. Introduction

Knowledge management practices have become increasingly important for academic institutions, particularly those in higher learning. Private colleges and universities, otherwise referred to as private higher educational institutions or HEIs, and recognized as heavy users, repositories, and distributors of knowledge, continue to realize the integral role of managing knowledge resources to remain competitive in the academic landscape. The recent COVID-19 pandemic is among the major factors for HEIs to revisit their knowledge management practices as this global phenomenon compelled them to institutionalize technological tools and mechanisms to create and transfer knowledge. With this wake up call, HEIs recognize that their overall performance, be it financial or not, depends heavily on the strategies to effectively address the need to shift to online platforms for learning. These HEIs had to face the imperative to seamlessly transfer information from faculty to students.

Consequently, HEIs have used various digital technologies and knowledge management tools to improve teaching and learning as well as administrative services, which has resulted in higher rankings and accreditation. By facilitating the acquisition, dissemination, and application of information, knowledge management fosters problem-solving capabilities, enhances research endeavors, and perpetuates continuous development within academic institutions (Mahdi et al., 2019). Knowledge management strategy, when properly executed, can enhance their overall performance in terms of their financial, customer, internal, and learning and growth perspectives. Thus, the Balanced Scorecard (BSC) framework becomes an effective tool for aligning the academic institution's strategy with its intellectual assets.

Higher education research in the fields of knowledge management, competitive strategies, and the Balanced Scorecard has made significant strides, but several significant research gaps remain. First, limited research on the application of KM practices in higher education exists (Agawin et al., 2019; Nair et al., 2019; Nawaz et al., 2020). Within the higher education context, scholars have investigated the factors influencing KM practices, engaged in theoretical analyses of KM literature, and explored its implications on organizational performance. Studies have underscored the affirmative impact of KM practices on competitive strategies across various industries, including academia, with a discernible linkage to organizational performance (Ekeagbara et al., 2019). However, it is imperative to acknowledge the divergent findings within the literature, wherein some studies have identified negative repercussions of KM practices on organizational performance. Likewise, studies on the influences of competitive strategies on organizational performance also vary. Findings are not conclusive as to the type of competitive strategies that contribute positively to organizational performance.

In consideration of the complex relationship between knowledge management, competitive strategies, and how well organizations perform, the Balanced Scorecard (BSC) stands out as a crucial tool for developing and managing strategies. The BSC framework, a strategic management tool that measures both the financial and non-financial performance of organizations from four perspectives, is considered a holistic measure of an organization's performance. Furthermore, as the higher education landscape evolves due to technological advancements and changing student demographics, research should keep up. Future research should investigate the effects of digitalization, online learning, and global competition on KM practices, as well as the implications for competitive strategies and balanced scorecard implementation in higher education.

It is in this light that this undertaking is pursued. Understanding the connections between knowledge management, competitive strategies, and the Balanced Scorecard as they are practiced in higher educational institutions, particularly in Lipa City, is viewed to address these issues. Likewise, delving into how

organizational performance through the balanced scorecard may be improved through its interactions with KM practices and competitive strategies may help private HEIs to compete better during these dynamic times. Addressing these research gaps will not only contribute to a better theoretical understanding of knowledge management in higher education institutions but will also provide actionable insights for college administrators and policymakers seeking to improve their institutions' competitive positioning and performance measurement using the Balanced Scorecard framework.

Objectives of the Study - The general purpose of this study is to examine the relationships among knowledge management practices, competitive strategies, and the balanced scorecard among private higher educational institutions. Specifically, this study sought to determine the knowledge management practices of the selected private higher educational institutions (HEIs) in terms of the stages in the knowledge management process particularly knowledge acquisition, knowledge storage, knowledge distribution or sharing, and knowledge utilization or application; describe the competitive strategies of the institutions in terms of cost-efficiency, differentiation, and focus; and assess the balanced scorecard dimensions in terms of financial performance, customer performance, internal performance, and learning and growth performance. It also seeks to test the relationship among knowledge management, competitive strategies, and the balanced scorecard. In addition, it purports to examine the effects of knowledge management practices and competitive strategies on the balanced scorecard; as well as the effects of competitive strategies on the balanced scorecard. Moreover, it seeks to determine whether competitive strategies mediate the relationship between knowledge management practices and the balanced scorecard. In the end, the study seeks to propose a framework for improving the organizational performance of HEIs.

2. Methodology

Research Design - The descriptive research design was used in this study to describe the responses of the representatives from private higher educational institutions on the knowledge management practices of the HEIs, their competitive strategies, and their organizational performance measured in terms of the balanced scorecard. This research design was chosen to give light to the practices of private HEIs in creating and managing knowledge resources; in designing and implementing strategies to help them compete with their rivals in the industry; and the organizational performance of the HEIs from the purview of the balanced scorecard dimensions. The descriptive research is deemed appropriate in presenting the views of the members on the practices of their respective HEIs with regard to the chosen variables. The causal-explanatory design was utilized in exploring the effects of the HEIs' KM practices and competitive strategies on their balanced scorecard; and the effects of the HEIs competitive strategies on their balanced scorecard. The same research design was employed to explain whether competitive strategies mediate the relationship between knowledge management and the balanced scorecard. This design was chosen to determine whether the variables of the study have significant interactions that may help in formulating or designing a framework for improving the organizational performance of the HEIs. The quantitative method was used to describe the variables as well as to present the associations among the variables of the study. This method was chosen because it allowed the gathering of a huge amount of data as well as the analysis of the collected data based on the patterns and interactions among them. The quantitative design also made possible the interpretation of data with the use of statistical tools. An instrument was developed from existing literature to realize the quantitative nature of the study.

Participants of the Study - The participants of the study were the faculty and staff of three private higher educational institutions in Lipa City. The private HEIs were chosen based on population size. The population sizes of these HEIs are as follows: HEI1= 320; HEI2= 196; and HEI3: 100. From a population of 616 respondents, the computed sample size of 237 was derived using the Raosoft sample size generator. A margin of error of 5% and a confidence level of 95% was considered in deriving the sample size. A total of 600 questionnaires were distributed among the respondents and 306 were retrieved, exceeding the required sample size. The faculty and staff respondents were randomly chosen. Due to the voluntary nature of the survey, the proportionate distribution of the collected data could not be observed. The data collected from HEI1 is 219; from

HEI2 is 27; and from HEI3 is 60. Although all 196 possible respondents from HEI2 were given a link to the questionnaire, many of them refused to participate in the survey; thus, the low turnout from this HEI.

Instruments of the Study - To gather data for the study, a survey instrument adapted from a combination of existing research questionnaires used by previous authors was utilized. The instrument was designed to gather the responses of employees, specifically the faculty and staff, on their perceptions of knowledge management, competitive strategies, and the balanced scorecard. The questionnaires were initially sent to the respondents in the form of a Google link where responses were automatically received by the proponent in Google sheet format. However, due to the slow turnout of the online link, printed copies of the instrument were physically distributed and retrieved personally by the proponent. There were three parts to the instrument used. The total number of items in the questionnaire is 55.

Part one covers the variable Knowledge Management Process with four dimensions namely, knowledge acquisition, knowledge creation, knowledge distribution, and knowledge application. Each dimension is composed of five items with a total of 20 items. This part of the questionnaire is adapted from the study of Al Ghazi (2014). Part two focuses on competitive strategies. There are three dimensions under this variable. These are low-cost leadership, differentiation, and focus strategies. Similar to knowledge management process dimensions, each competitive strategy dimension has five items in the questionnaire. These items or criteria were adapted from the study of Torres-Teves, et al. (2023). The last part involves items for measuring the perception of respondents on the dimensions of the balanced scorecard. These dimensions covered in the questionnaire include the financial, customer, internal, and learning and growth perspectives. A total of 20 items, broken down into five items per dimension, make up this part of the instrument that is adapted from the research of Al Ghazi (2014).

A Likert scale consisting of four responses that range from (1) Strongly Disagree to (4) Strongly Agree was used to measure the responses of the faculty and staff to the variables of the study. Since the instrument is a collection of the work of various authors, a test of reliability was conducted among 31 qualified respondents. A digital copy of the instrument was sent to the respondents online through a Google form link. A total of fifty possible respondents were given copies of the instrument but only 31 answered the questionnaire.

Table 1
Reliability Test Results

Indicators	Cronbach Alpha	Remarks
Knowledge Management, Competitive Strategies and the Balanced Scorecard	0.976	Excellent
Per variable		
Knowledge Management	0.964	Excellent
Knowledge Acquisition	0.873	Good
Knowledge Creation	0.894	Good
Knowledge Distribution	0.846	Good
Knowledge Utilization	0.930	Excellent
Competitive Strategies	0.902	Excellent
Cost Efficiency Strategies	0.839	Good
Differentiation Strategies	0.936	Excellent
Focus Strategies	0.897	Good
Balanced Scorecard	0.947	Excellent
Financial Performance	0.847	Good
Customer Performance	0.865	Good
Internal Performance	0.922	Excellent
Learning and Growth Performance	0.901	Excellent

George and Mallery (2003) provide the following rules of thumb: “_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable”

The reliability test was conducted using Cronbach’s Alpha. Reliability test results are presented in Table 1. The reliability test shows that the instrument developed for the study has internal consistency as reflected in an overall excellent rating of 0.976. All individual variables also showed excellent ratings with 0.964 or Knowledge Management, 0.902 for Competitive Strategies, and 0.947 for the Balanced Scorecard. These values are

supported either by Good or Excellent ratings in the individual tests conducted for each sub variable. It is noticeable that while the overall reliability of the instrument is Excellent, each variable has dimensions or sub variables that are rated as Good. For knowledge management, three out of the four dimensions have a Good rating. Only knowledge utilization has an excellent rating. For competitive strategies, cost leadership and focus are rated Good while differentiation was rated as Excellent. Finally, for the balanced scorecard dimensions, two dimensions, financial and customer performance received a Good rating while internal and learning and growth were Excellent. Nonetheless, the overall results of the reliability test indicate that the instrument is fit for conducting the survey among the faculty and staff of the private higher educational institutions.

Data Gathering Procedure - The primary data for the study were collected by observing the following procedures. First, the instrument developed for the study was pilot-tested among qualified respondents from another academic institution. A sample of 31 employees were requested to answer the survey. Their responses were statistically treated to determine whether the instrument was reliable. Second, a letter was sent to the administrators of the selected HEIs to request the conduct of the survey among employees. Third, once approved, a request letter was sent to the Human Resources Department to determine the population of the employees at the time the survey was conducted. Fourth, respondents from each institution were randomly selected to answer the survey. An informed consent form was sent to guarantee that the respondent willingly participated in the survey. This is also for the purpose of complying with ethical standards and data privacy provisions. Fifth, survey questionnaires were sent to the employees to accomplish the survey. The survey was conducted in two forms. Some questionnaires were sent online via Google forms. The responses gathered were automatically sent to the proponent. Another set of questionnaires were personally distributed among respondents who preferred the printed copies of the questionnaires. These were individually handed by the proponent to the respondents and collected after completion.

Data Analysis - Several statistical tools were used to achieve the objectives of the study. These include the descriptive and inferential statistics. The weighted mean was used to describe the responses on knowledge management processes, competitive strategies, and the balanced scorecard. The weighted means for each indicator were also ranked to show which among them were given the highest or lowest ratings by the respondents. In addition, the composite mean of the indicators was presented to provide an overall impression of the variable or sub variables described. Inferential statistics were used to analyze the association of one variable with another. The result of the Shapiro-Wilk test showed that p-values of all variables were less than 0.05 which means that the data were not normally distributed. Therefore, Spearman rho correlation analysis was used as part of the non-parametric tests to determine the relationships among the variables. These analyses were performed using SPSS version 28. Simple linear regression was used to examine the effects of knowledge management practices on competitive strategies and the balanced scorecard and the effects of competitive strategies on the balanced scorecard. Mediation analysis was performed to determine the direct or indirect effects of knowledge management processes on the balanced scorecard and the possible mediating effects of competitive strategies on the relationship between knowledge management processes and the balanced scorecard. Finally, WARP PLS Structural Equation Modeling was performed to confirm the framework for improving organizational performance.

Ethical Considerations - Sensitive information may be part of the study such as the personal electronic mails requested from the respondents who answered the survey online. A consent form was included in the instrument to guarantee that the survey is voluntary and only those who agree to respond to the survey send their responses. Full disclosure of the use of the information that was gathered was also done so respondents understood the purpose of the survey. The name of the respondent or any other personal information was not required from any of the participants. For purposes of determining the number of respondents per institution, only the name of the institution where the respondent works was requested.

3. Results and discussion

Table 2
Summary Table on Knowledge Management Practices

Key Result Areas	Composite Mean	VI	Rank
Knowledge Acquisition	3.32	Agree	1
Knowledge Creation	3.18	Agree	4
Knowledge Distribution	3.22	Agree	3
Knowledge Utilization	3.23	Agree	2
Grand Composite Mean	3.24	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 2 summarizes Knowledge Management Practices among private higher educational institutions. The composite means of each component are illustrated together with the verbal interpretation for each and the rank of each component. Based on the table, all indicators are positively rated by the respondents and all have an interpretation of Agree which means that the institutions’ knowledge management practices are commendable. These results are supported by Mahdi et al. (2019) which states that private universities should generate, store, share and apply knowledge throughout their organizations to remain competitive.

Among the indicators, knowledge acquisition ranked first (3.32) which is closely followed by knowledge utilization (3.23). This indicates that private higher academic institutions acquire and utilize knowledge effectively. This also confirms that HEIs are knowledge organizations that generate huge amounts of knowledge. The knowledge acquired by the HEIs come from students and other stakeholders such as the faculty and staff. The results also reveal that whatever knowledge has been acquired by these institutions are utilized well with the resulting composite mean.

Third in ranking is knowledge distribution with a composite mean of 3.22. This is close to the score for knowledge utilization, which means that the institutions utilize knowledge that is distributed among members of the institutions. Knowledge creation received the lowest composite mean of 3.18. This implies that among the components of knowledge management practices, knowledge creation requires the greatest attention among the institutions. This may be improved through the installation of better data storage and retrieval facilities. On the whole; however, the grand composite mean shows that the institutions have exemplary knowledge management practices with a score of 3.24.

These results are contrary to the results of Agawin et al. (2019) which found that knowledge creation and knowledge utilization are the mostly widely practiced stages in the KM process. In the current study, knowledge creation is the least practiced among the four stages. Knowledge distribution, another stage found by Agawin et al. (2019) to be highly practiced among HEIs in the CALABARZON region, is the second to the least practiced among the HEIs in Lipa City. It is interesting to note that these HEIs in Lipa are also part of the CALABARZON region, which indicates that there are still variations in the practice of these KM processes among private HEIs in the country.

Table 3
Summary Table on Competitive Strategies

Key Result Areas	Composite Mean	VI	Rank
Cost Efficiency	3.00	Agree	2
Differentiation	3.43	Agree	1
Focus	2.76	Agree	3
Grand Composite Mean	3.06	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 3 summarizes the competitive strategies of the private higher educational institutions. The grand composite mean of 3.06 suggests that respondents agree that the institutions’ cost efficiency, differentiation, and focus strategies are satisfactory. While the overall result is interpreted as Agree, it is considered to be in the lower limit and may have been affected by the low rating given to focus.

Among the three strategies, differentiation ranks first with a composite mean of 3.43. This reveals that the HEIs' generic strategies tend to be broad differentiation where the HEIs attempt to be competitive by offering unique products and services, instead of trying to be the cost leader or to focus on a narrow market segment. This also means that among the strategies, institutions are more successful in differentiating their image and offering to their target markets.

Cost efficiency is second in rank at a composite score of 3.00. This shows that the HEIs exert efforts to achieve cost leadership in their industry, although they may not be very successful in pursuing this as shown by a low composite score. The last strategy, focus ranks third and received a composite mean of 2.76. This suggests that the institutions lack focus in terms of their offering to their market. The low composite mean for focus may be attributed to the commitment of the HEIs to provide a wide variety of products or services that would match a wider market. This may be explained by the higher rating given to differentiation.

While the three generic strategies are ranked in this study as to how they are viewed by the respondents, the overall results still show that they are all practiced by the private HEIs. Thus, these results are supported by the study of Ekeagbara et al. (2019) which states that private educational institutions should adopt competitive strategies to attract new students and maintain existing ones. Since private HEIs operate in a dynamic and competitive environment, their administrators should develop strategies that would enable them to compete better and stay relevant.

Table 4

Summary Table on Balanced Scorecard Dimensions

Key Result Areas	Composite Mean	VI	Rank
Financial Performance	2.94	Agree	4
Customer Performance	3.23	Agree	2
Internal Performance	3.28	Agree	1
Learning and Growth Performance	3.20	Agree	3
Grand Composite Mean	3.06	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 4 summarizes the Balanced Scorecard Dimensions, their ratings, verbal interpretations, and ranks. The grand composite mean of 3.16 indicates an overall agreement among respondents on the performance of the private HEIs on the four dimensions of BSC. The table reveals that Internal performance ranks first at a composite mean of 3.28. This shows that among the four dimensions, respondents view that internal operations of the HEIs, particularly focusing on providing quality and innovative services to their customers or students, are the strongest or most important dimension of the balanced scorecard of the HEIs.

Customer performance ranks second among the dimensions. Respondents gave it a rating of 3.23 based on its composite mean. This shows that the HEIs seek ways to serve customers or students well to satisfy their needs. It also indicates that the HEIs gather feedback from the students and find ways to improve their service quality. Learning and Growth Performance ranks third among the dimensions. The composite mean of 3.20 falls close to the score of customer performance which means that the satisfaction of customers and the growth of employees are both satisfactory. In addition, the composite mean of higher than 3.0 indicates that respondents recognize the support of the HEIs' administration to the development of their employees. Financial performance ranks fourth with verbal interpretation of Agree, it did not reach the 3.0 mark. Thus, it may be considered as a point for improvement among the HEIs. They may look into improving enrollment, funding sources, profitability, and return on investment.

The overall results of the balanced scorecard are supported by the studies of De Jesus et al. (2022) and Lee et al. (2023). Both literature emphasize the versatility of the BSC in measuring the performance of companies as it covers both the financial and non-financial perspectives. De Jesus et al. (2022) emphasized the diversity of the BSC in the education sector but considers the BSC as an important measure in evaluating the performance of educational institutions. They also highlight that the BSC provides a balanced view of business performance in the education sector. Lee et al. (2023), on the other hand, underscored the importance of clarifying the

organization's visions and strategy by translating them into measurable objectives and targets observed in the BSC dimensions.

Table 5
Relationship Between Knowledge Management Practices and Competitive Strategies

Variables	Rho	p-value	Interpretation
Knowledge Acquisition			
Cost Efficiency	0.657**	<.001	Highly Significant
Differentiation	0.690**	<.001	Highly Significant
Focus	0.205**	<.001	Highly Significant
Knowledge Creation			
Cost Efficiency	0.637**	<.001	Highly Significant
Differentiation	0.660**	<.001	Highly Significant
Focus	0.317**	<.001	Highly Significant
Knowledge Distribution			
Cost Efficiency	0.697**	<.001	Highly Significant
Differentiation	0.725**	<.001	Highly Significant
Focus	0.276**	<.001	Highly Significant
Knowledge Utilization			
Cost Efficiency	0.729**	<.001	Highly Significant
Differentiation	0.726**	<.001	Highly Significant
Focus	0.318**	<.001	Highly Significant

*. Correlation is significant at the 0.01 level

Table 5 provides an analysis of the relationship between the knowledge management practices and the competitive strategies of the private HEIs. Each sub variable of knowledge management practices was correlated with each of the competitive strategies. Overall results point to a weak to strong direct relationship among the sub variables. This means that as HEIs improve their knowledge management practices, their competitive strategies also improve. All relationships were considered highly significant as shown by p-values lower than 0.01. Knowledge acquisition, knowledge creation, and knowledge distribution had the strongest relationship with differentiation strategy and the weakest with focus. For knowledge acquisition, cost efficiency had the strongest relationship and focus had the weakest as well, which is similar to the findings for the other sub variables of knowledge management practices.

Table 6
Relationship Between Knowledge Management Practices and Balanced Scorecard Dimensions

Variables	Rho	p-value	Interpretation
Knowledge Acquisition			
Financial Performance	0.534**	<.001	Highly Significant
Customer Performance	0.725**	<.001	Highly Significant
Internal Performance	0.709**	<.001	Highly Significant
Learning and Growth Performance	0.686**	<.001	Highly Significant
Knowledge Creation			
Financial Performance	0.590**	<.001	Highly Significant
Customer Performance	0.637**	<.001	Highly Significant
Internal Performance	0.696**	<.001	Highly Significant
Learning and Growth Performance	0.675**	<.001	Highly Significant
Knowledge Distribution			
Financial Performance	0.599**	<.001	Highly Significant
Customer Performance	0.726**	<.001	Highly Significant
Internal Performance	0.753**	<.001	Highly Significant
Learning and Growth Performance	0.790**	<.001	Highly Significant
Knowledge Utilization			
Financial Performance	0.599**	<.001	Highly Significant
Customer Performance	0.739**	<.001	Highly Significant
Internal Performance	0.795**	<.001	Highly Significant
Learning and Growth Performance	0.788**	<.001	Highly Significant

*. Correlation is significant at the 0.01 level

The relationship of knowledge management practices with the balanced scorecard dimensions are presented and analyzed in Table 6. As seen on the table, a moderate to strong direct relationship exists between the sub

variables as indicated by the positive computed rho-values that range from 0.534 to 0.795. The table also reveals that each sub variable of knowledge management practices is statistically significantly related with each sub variable of the balanced scorecard. This may be seen through the p-values that all fall below the 0.01 level. The consistently high correlation coefficients (rho) and highly significant p-values across all dimensions suggest a robust and positive association between the KM practices and organizational performance.

Knowledge Acquisition is the first set of correlations. The significant positive correlations between financial performance (0.534), customer performance (0.725), internal performance (0.709), and learning and growth performance (0.686) highlight the importance of knowledge acquisition in driving overall organizational success. This is consistent with the literature, which emphasizes the importance of capturing and leveraging knowledge in order to improve performance and competitiveness. Probing further into the table, knowledge acquisition has the strongest positive correlation to customer performance. This means that as the HEIs collect knowledge from students and employees, there is also a corresponding improvement in customer performance. This may mean that customers, both the students and employees, recognize that the acquisition of knowledge is an indicator of the intent of the HEIs to deliver better services. This translates into better customer performance as the HEIs are able to understand the needs and wants of their customers, and consequently learn to serve them better through the knowledge acquisition process.

Moving on to Knowledge Creation, the high correlation coefficients (ranging from 0.590 to 0.696) confirm that organizations that excel at knowledge creation perform well in financial, customer, internal, and learning and growth dimensions. It is notable that knowledge creation had the strongest correlation with internal performance which means that as HEIs organize and store knowledge with the use of various technologies, their internal performance also improves. This is because the process of knowledge creation contributes to improvement in internal operations and processes. The third set of correlations, Knowledge Distribution, shows similar patterns, indicating that organizations that effectively disseminate knowledge perform better across all BSC dimensions. This finding supports the notion that knowledge sharing and dissemination within an organization contribute to better decision-making and efficiency.

Another significant finding between knowledge distribution and the balanced scorecard dimensions is that the strongest correlation exists between knowledge distribution and learning and growth performance. This may be expected as dissemination of information among internal stakeholders or members of the organization contributes positively to the development of the competencies of the employees. This is essentially what the learning and growth performance is all about. Knowledge distribution, also known as knowledge sharing, helps employees gain better understanding of the organization's processes, practices, and even values. Such shared knowledge, both explicit and tacit in nature, translates into learning among employees, and consequently lead to the growth of both individuals and organizations.

The final set of correlations involves Knowledge Utilization, which indicates that organizations that use knowledge effectively perform exceptionally well across all BSC dimensions. This lends credence to the notion that applying knowledge strategically is critical for achieving organizational goals. Similar to knowledge creation, knowledge utilization has the strongest correlation with the internal performance dimension of the BSC. This emphasizes the importance of using stored knowledge to improve the operations within the organization.

It can also be noted that financial performance had the weakest correlation with the knowledge management dimensions. This reveals that while knowledge management practices contribute positively to all BSC dimensions, they do not seem to have the best contributions to the capacity of the organization to earn. Thus, HEIs should look into how they may strengthen knowledge management practices that may lead to better financial performance. These results contradict the study of Niyi et. al.,(2022) where KM practices were found to reduce the organizational performance using the BSC, but it is supported by the study of Valmohammadi et. al.,(2015).

Table 7
Relationship Between Competitive Strategies and Balanced Scorecard Dimensions

Variables	Rho	p-value	Interpretation
Cost Efficiency			
Financial Performance	0.659**	<.001	Highly Significant
Customer Performance	0.707**	<.001	Highly Significant
Internal Performance	0.706**	<.001	Highly Significant
Learning and Growth Performance	0.746**	<.001	Highly Significant
Differentiation			
Financial Performance	0.617**	<.001	Highly Significant
Customer Performance	0.698**	<.001	Highly Significant
Internal Performance	0.730**	<.001	Highly Significant
Learning and Growth Performance	0.739**	<.001	Highly Significant
Focus			
Financial Performance	0.498**	<.001	Highly Significant
Customer Performance	0.288**	<.001	Highly Significant
Internal Performance	0.342**	<.001	Highly Significant
Learning and Growth Performance	0.325**	<.001	Highly Significant

*. Correlation is significant at the 0.01 level

Table 7 examines the relationship between competitive strategies and Balanced Scorecard (BSC) dimensions, revealing strong positive correlations in financial, customer, internal, and learning and growth performance. The correlation coefficients (rho) ranging from 0.288 to 0.746 reveal a weak to strong direct relationship among the sub variables of competitive strategies and the balanced scorecard dimensions. The p-values (p 0.001), which show a highly significant correlation among all sub variables, indicate that organizations that use specific competitive strategies perform excellently in all dimensions of the BSC.

Cost efficiency as a competitive strategy is mentioned in the first set of correlations. The significant positive correlations between cost efficiency and financial performance (0.659), customer performance (0.707), internal performance (0.706), and learning and growth performance (0.746) highlight the effectiveness of cost efficiency in driving overall organizational success. This finding supports recent literature emphasizing the strategic importance of cost management in achieving financial performance and customer satisfaction (Porter, 2019).

Moving on to the Differentiation strategy, the strong positive correlations (ranging from 0.617 to 0.739) confirm that organizations that prioritize differentiation outperform in financial, customer, internal, and learning and growth dimensions.

The Focus strategy is associated with positive associations with financial performance (0.498), customer performance (0.288), internal performance (0.342), and learning and growth performance (0.325). While the correlations are lower than for the other strategies, they still show a significant relationship between focus strategies and BSC dimensions. The importance of focus strategies in targeting specific market segments and achieving competitive advantage has been discussed in recent literature (Porter, 2019).

In summary, the table shows empirical evidence supporting the positive relationship between Cost Efficiency, Differentiation, and Focus and the Balanced Scorecard dimensions. These findings are consistent with recent literature, which emphasizes the strategic significance of cost management, product differentiation, and market focus in achieving organizational success across multiple performance dimensions.

Specifically, these results are consistent with the results of the study of Islami et al. (2020) which found that all generic competitive strategies are positively related to organizational performance. According to Islami et al. (2020), European companies deal with highly competitive and unstable markets. Managers tend to focus on new ways of competing, through these generic strategies, to adapt to technological changes and industrial challenges.

Regression Analysis

Regression analysis was performed to examine the effects of knowledge management practices on competitive strategies; the effects of competitive strategies on the balanced scorecard; and the effects of

knowledge management practices on the balanced scorecard.

Table 8
Regression Analysis for Variables

	Unstandardized B Coefficients	Standardized B Coefficients	R ²	F-Value	Sig	Interpretation
KM→CS	0.649	0.738	0.544	362.57	0.000	Significant
CS→BSC	0.857	0.809	0.655	577.19	0.000	Significant
KM→BSC	0.821	0.880	0.775	1047.65	0.000	Significant

Knowledge Management (KM), b. Competitive Strategies (CS), c. Balanced Scorecard (BSC)

Table 8 presents three models for the regression analysis conducted. Model 1 shows how KM practices affect the competitive strategies of the HEIs. The 0.649 unstandardized beta coefficient indicates that KM practices have a positive effect on competitive strategies. This positive effect is considered significant as shown by the p-value of 0.000. Further, 54.9% of the change in competitive strategies may be predicted by knowledge management practices. This means that the more the HEIs practice knowledge management, the better their competitive strategies are. Knowledge creation or acquisition; however, did not have a significant effect on business strategies. This is where the current study differs as all knowledge management practices are found to have significant positive effects on competitive strategies.

The second model shows the regression analysis to determine the effect of competitive strategies on the balanced scorecard. With the unstandardized beta coefficient of 0.857 and a p-value of .000, competitive strategies are found to have a significant positive effect on the balanced scorecard. In addition, 65.5% of the change in the balanced scorecard may be attributed to a change in competitive strategies. This is shown by the R² of .655. This reveals that when HEIs utilize more competitive strategies, the balanced scorecard also improves. It means that when HEIs are more competitive in terms of cost efficiency, differentiation and focus, their overall organizational performance is more satisfactory. This emphasizes the importance of utilizing competitive strategies in educational institutions to achieve better organizational performance whether in financial or non-financial terms.

The third model in the regression matrix presents the effects of KM practices on the BSC. Using the unstandardized beta coefficient of .821, the model reveals that the KM practices of HEIs have a positive effect on their balanced scorecard. In addition, the p-value of 0.000 indicates that the positive effect is significant. Moreover, the R² value of .755 means that 75.5% of the change in the balanced scorecard may be attributed to changes in the knowledge management practices of the HEIs. This reveals that KM practices of HEIs help improve their organizational performance. Thus, for schools to have better financial and non-financial performance as measured by the balance scorecard, private HEIs should find ways to better manage the knowledge or information existing in the company. This further means that their practices in the creation, storage, sharing, and use of knowledge lead to improvements in their financial, customer, internal, and learning and growth performances.

This result is supported by the study of Rezaei et al. (2021) and Abubakar et al. (2019). Both studies emphasized that knowledge management practices positively and significantly influences the performance of the studied organizations. Although the current study focuses on practices of private higher educational institutions, the two other pieces of evidence were found in other types of organizations. In addition, the study of Rezaei et al. (2021), included human capital as a mediating variable between knowledge management practices and organizational performance. Abubakar et al. (2019), on the other hand, used decision-making styles as a mediating variable. Nonetheless, even when both mediating variables were added, knowledge management practices still positively affected organizational performance which indicates the importance of managing knowledge resources in improving the overall performance of organizations.

These findings are also supported by the study of Valmohammadi et al. (2015). Their study on the impact of knowledge management on organizational performance based on the dimensions of the balanced scorecard also

revealed that knowledge management practices positively and significantly affected overall organizational performance. However, the difference is when probing into the results of Valmohammadi et al. (2015), the effect of knowledge management practices is significant only in terms of learning and growth and not for financial, internal and customer dimensions.

Mediation Analysis

Regression analysis was conducted to determine whether competitive strategies mediate the effects of KM practices on the BSC. In the previous discussions, it was presented that both knowledge management practices and competitive strategies have strong positive relationships with the balanced scorecard. Additionally, it was found that both variables also have significant positive effects on the balanced scorecard. The following table then presents the changes in the variables when competitive strategies are used as a mediating variable between knowledge management practices and the balanced scorecard.

Table 9
Mediating Effect of Competitive Strategies Between Knowledge Management and the Balance Scorecard

	Unstandardized B Coefficients	Standardized B Coefficients	R ²	F-Value	Sig	Interpretation
Model 1 Knowledge Management	0.821	0.880	0.775	1047.65	0.000	Significant
Model 2 Knowledge Management	0.579	0.622	0.831	17.79	0.000	Significant
Competitive Strategies	0.371	0.351		746.21	0.000	Significant

Dependent Variable: Balanced Scorecard
**Partial Mediation*

Table 9 shows the regression matrix where initially, KM practices significantly affects the balanced scorecard. This is shown by the unstandardized beta coefficient of 0.821 and a p value of 0.000. This indicates that as the HEIs improve their knowledge management practices, the balanced scorecard performance also improves. When competitive strategies were added to the model, the effects of knowledge management on the balanced scorecard remained significant at p value of 0.000. The indirect effects between knowledge management practices and the balanced scorecard via mediator competitive strategies is statistically significant at p value of 0.0000. Results revealed that competitive strategies partially mediate the effects of knowledge management practices and the balanced scorecard.

Additionally, the R-square of 0.831 shows that 83% of the variation in the influence of knowledge management practices on the balanced scorecard may be explained by competitive strategies which means that one unit increase in competitive strategies leads to an increase in the effect of knowledge management practices on the balanced scorecard by 83%. This also indicates that as the HEIs utilize more effective competitive strategies, the effect of knowledge management practices on the balanced scorecard is enhanced. This underscores the importance of competitive strategies for HEIs to improve their performance in terms of the dimensions of the balanced scorecard. To confirm the results of the mediation analysis, the Sobel Test was performed and shown on table below. As seen on the table, the total effects of KM practices on the BSC is indicated by the value of .821. When the mediating variable of competitive strategies was added to the model, the effect of KM practices to the BSC is reduced to 0.579 which is the direct effect on Column 3 on Table 10. The indirect effect is indicated by the value 0.242 which is found to be significant with a p-value of 0.00. This confirms that competitive strategies partially mediate the relationship between KM practices and the BSC of private HEIs.

Table 10
Indirect Effects, Direct Effects and Total Effects

	Total Effects	Direct Effects	Indirect Effects	Percent Mediation	Sobel Test (t statistics)	P Value	Interpretation
KM→CS→ BSC	0.821	0.579	0.242	29.48	8.877	0.000	Significant

These results are similar to the results of the study conducted by Niyi et. al.,(2022) where competitive strategy significantly affected the relationship between knowledge management practices and organizational performance among small and medium enterprises in Nigeria. However, the current study shows that KM practices significantly and positively affects organizational performance in terms of the BSC dimensions while Niyi et. al.,(2022) found that KM practices among SMEs affect organizational performance negatively.

Proposed Framework for an Improved Organizational Performance

Figure 1 shows a model that resulted from the structural equation modeling performed to show the associations among KM practices, competitive strategies, and organizational performance.

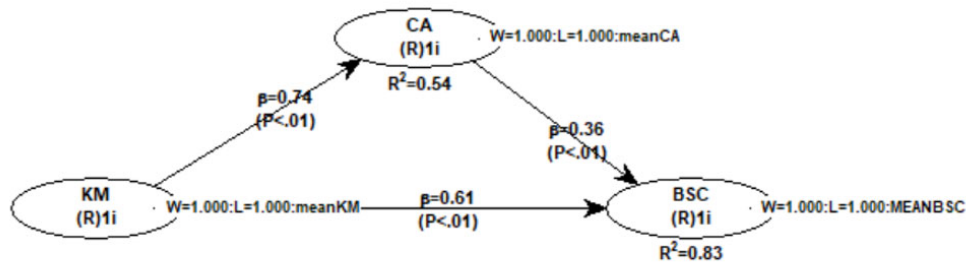


Fig.1. SEM Model for KM Practices, Competitive Strategies, and Balanced Scorecard among Private HEIs in Lipa City

Figure 1 shows a path diagram of the causal relationships among these variables of the study. Competitive strategies and organizational variables are endogenous variables while KM practices are exogenous variables. The three main variables are treated as latent variables.

The single straight arrow from knowledge management practices to competitive strategies indicate a one-way direct causal relationship between knowledge management and competitive strategies. The direction of the relationship is from knowledge management practices to competitive strategies indicating that knowledge management affects competitive strategies or that changes KM practices also cause changes in the competitive strategies of the private higher educational institutions.

The relationship between knowledge management and the balanced scorecard is presented in the path of the arrow from knowledge management to the balanced scorecard. The single straight arrow with its head pointing toward the balanced scorecard indicates that knowledge management practices cause changes in the balanced scorecard. The changes caused by KM practices are positive, which means that their improvement leads to positive outcomes in the balanced scorecard.

The causal relationship between competitive strategies and the balanced scorecard is shown by the single straight one-bladed arrow from competitive strategies to the balanced scorecard indicating that competitive strategies cause positive changes in the balanced scorecard. This also means that when the private HEIs improve or have successful competitive strategies, the overall performance in terms of the balanced scorecard also improves.

The model depicted in Figure 1 shows that competitive strategies mediate the effects of KM practices on the BSC. This confirms the mediation analysis shown on the previous tables. The model suggests that for organizational performance to be improved, the private HEIs should enhance KM practices through competitive strategies.

The evaluation of the model may be done using the Goodness of Fit values under the WARP-PLS which are presented in table below. The computed values for the current model is shown in Column 4 and the

corresponding interpretation in Column 5.

Table 11
Goodness of Fit Values and Interpretation

Model fit and quality indices		Criteria Fit	Computed Value	Interpretation
1	Average Path Coefficient (APC)	Accepted if $p < 0.05$	0.569, $p < 0.001$	Acceptable
2	Average R-squared (ARS)	Accepted if $p < 0.05$	0.688, $p < 0.001$	Acceptable
3	Average adjusted R-squared	Accepted if $p < 0.05$	0.686, $p < 0.001$	Acceptable
4	Average block VIF (AVIF)	Accepted if ≤ 5	2.300	Acceptable
5	Average full collinearity (VIF)	Accepted if ≤ 5	4.443	Acceptable
6	Tenenhaus GoF (GoF)	Small > 0.1 , Medium > 0.25 Large > 0.36	0.829, Large	Acceptable
7	Symphson's paradox ratio	Accepted if ≥ 0.7	1.000	Acceptable
8	R squared contribution ratio	Accepted if ≥ 0.9	1.000	Acceptable
9	Statistical suppression ratio	Accepted if ≥ 0.7	1.000	Acceptable
10	Non-linear bivariate causality direction ratio (NLBCDR)	Accepted if ≥ 0.7	1.000	Acceptable

Source: WarpPLS 8.0

Based on the Goodness of Fit measures, the structural model represents the framework for improving organizational performance using KM practices, competitive strategies, and the BSC meets all the model fit and quality indices. Thus, the proposed model may be used by HEIs to improve their organizational performance.

From the preceding model, the framework for improving Organizational Performance through the balanced scorecard is proposed. Figure 2 shows the framework developed for improving organizational performance. This framework is anchored on the model derived from the SEM performed where it was found that KM practices and competitive strategies have significant positive effects on the balanced scorecard; KM practices have significant positive effects on competitive strategies; and competitive strategies mediate the effects of KM practices on the balanced scorecard.

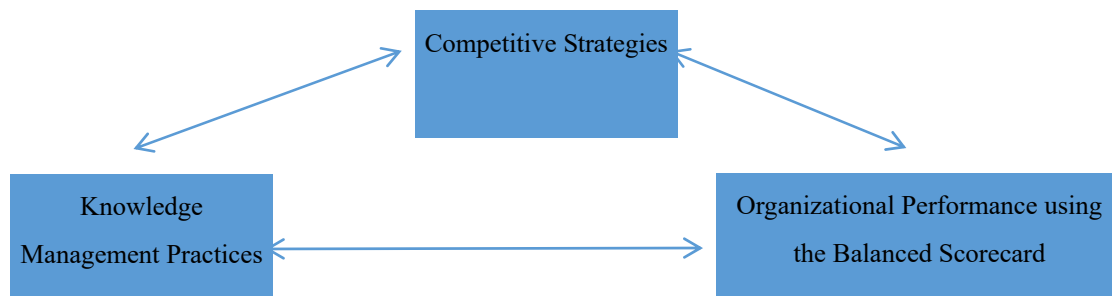


Figure 2. Proposed Framework for Improved Organizational Performance

Thus, since organizational performance in this context is measured by the balanced scorecard, it may be improved by enhancing the KM practices of the HEIs which in turn may lead to the improvement in competitive strategies. Excellent competitive strategies may then lead to better organizational performance through indicators of the balanced scorecard.

This means the private HEIs may consider establishing effective knowledge management practices to improve their competitiveness. This further means that private HEIs may enhance the acquisition of knowledge, its creation, distribution and utilization to improve their competitive strategies as well. This also implies that the HEIs may carefully assess how they practice knowledge management and improve the areas where they are considered weak.

The private HEIs may also look into their competitive strategies as these affect their performance. When translated into the dimensions of the two variables, this would mean that the more cost efficient, the more highly differentiated, and the better focused HEIs become, the more possible it is for these institutions to perform better on both financial and non-financial terms. This suggests that private HEIs should continue to find ways to

achieve cost efficiency in their operations to offer their programs and services cheaper than competitors; to improve their program features and offerings so that their customers would be able to identify their competitive advantages over rivals; and focus on the needs of their target customers or students in order for the latter to continue to choose them over their competitors. In doing so, the private HEIs would find better financial gains and margins; increase customer satisfaction and loyalty; achieve operational efficiency; and increase opportunities for learning and growth.

Organizational performance of private HEIs may be improved by ensuring that they practice knowledge management effectively as these practices lead to enhanced competitive strategies and eventually an improved balanced scorecard performance. Likewise, strengthening the competitive strategies of the private HEIs leads to improvement in the balanced scorecard. Thus, the overall performance in terms of the four dimensions may all be improved when both knowledge management practices and competitive strategies are enhanced.

4. Conclusions and recommendations

The following conclusions may be drawn from the foregoing discussions: Knowledge management practices among private HEIs are performed effectively as to acquisition, creation, distribution and utilization. The respondents generally agreed on the competitive strategies being adopted by HEIs as to cost efficiency, differentiation and focus. The balance scorecard performance among private HEIs is satisfactory in terms of financial, customer, internal, and learning and growth. There is a high significant relationship among knowledge management practices, competitive strategies and balanced scorecard. The effects between knowledge management practices and competitive strategies; knowledge management practices and the balanced scorecard; and competitive strategies and the balanced scorecard are all considered positive and significant. Competitive strategies mediate the relationship between knowledge management practices and the balanced scorecard. An improved organizational performance framework was developed for HEIs to enhance the overall effectiveness and efficiency of these institutions.

Based on the foregoing conclusions, the following recommendations are formulated: For private HEIs, they may adopt the framework developed in this study to improve their organizational performance. As knowledge organizations, they may revisit their knowledge management practices, competitive strategies and balanced scorecard dimensions. They may intensify their knowledge management practices and competitive strategies. Since competitive strategies mediate the effects of knowledge management practices on organizational performance, these HEIs may reinforce their acquisition, creation, distribution, and utilization of knowledge that would amplify their competitive strategies, which may then lead to overall establishment of a better organizational performance, as measured by the balanced scorecard. For the faculty members of the private HEIs, they may help the HEIs improve their KM practices, competitive strategies, and balanced scorecard by continuously providing feedback to their respective HEIs particularly on the weak areas of their practices. In addition, they may collaborate with their HEIs in the delivery of better services through the adoption of the proposed framework. For future researchers, this study did not dwell on the effects of the sub-variables of KM practices, competitive strategies, and the balanced scorecard; consequently, future researchers may explore this area to establish the associations among these sub-variables. Likewise, they may also examine other strategies as mediating variables between KM practices and the balanced scorecard.

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