Knowledge Management Enablers and Its Impact on the Performance Outcomes of State Universities in the Philippines

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Abstract The main objective of this study is to investigate the relationship between knowledge management enablers and performance outcomes in higher education institutions in the Philippines particularly state universities. The population of the study was the faculty members of three selected state universities. Simple random sampling was utilized to select the samples. The sample size of the study was 150 and all the 150 questionnaires were useful for the aim of this study and making the response rate of 100%. The reliability of data was tested by Cronbach’s alpha and regression analysis was used to test the hypotheses. Results revealed that employee management has positive and significant impacts on teaching, research, citation, international outlook, and industry income. The same results are determined with organizational culture except for industry income. Information technology has positive and significant impacts on international outlook and industry income while leadership has negative and significant impacts on international outlook. This study concludes that employee motivation was a predictor of performance in teaching, research, citation, international outlook, and industry income. Organizational culture was a predictor of teaching, research, citation, and international outlook. Information technology was a predictor of international outlook and industry income and leadership was only a predictor of international outlook but negatively. The findings of this study may be utilized by higher education institutions in decision making to develop policies in achieving better performance outcomes.

Keywords Knowledge Management, Performance Outcomes, State University

1. Introduction

Knowledge Management (KM) is a strategy applied by different organizations on how to get a right knowledge from the right people to ensure that knowledge can be shared and transferred to improve the performance outcomes [1]. KM is a major source of competitiveness to achieve the vision, mission, goals and objectives of the organization [2-4]. KM is a set of latest activities aimed for knowledge improvement, knowledge-related practices, organizational behaviors and decisions, and organizational performance [5]. Likewise, KM is a tool which helps the organizations to utilize resources more smartly and efficiently in able to achieve higher productivity. Also, KM is a task of developing and exploiting tangible (research outputs, strategic plan) and intangible (competencies and knowledge of employees) knowledge resources [6]. From the development of KM, KM became popular in most advanced countries and in the third world the popularity is still limited [7], like in the Philippines.

KM was not only applicable in the business sector but also in the higher education institutions [8]. The
Universality and innovativeness of HEIs may retain through KM strategies initiatives [9]. HEIs all over the world are involved in knowledge generation, transmission, dissemination, and application for improve quality services [10] and their quality of performance outcomes can improve through KM [11-13]. Universities may apply KM to improve processes in research, curriculum development, student and alumni services, and strategic planning [14]. Application of KM in the educational organizations can lead to better decision making, better instructions, effective networking, quality research, and easy access to scientific resources [15].

HEIs KM important factors are identified as the main driving forces of success such as culture, values, organizational structures, infrastructures [16], reward systems, networks, repositories [17], human resources [18], top management, leadership [19], organizational adjustments, and employee motivation [20].

KM practices in HEIs greatly affect organizational performance in innovation, growth, and competitive advantage [21]. KM practices also improve the quality of education [22] and provide better services to their stakeholders [23]. To achieve high performance, HEIs should apply support, communication, and learning management systems [24]. KM improves decision-making, handling students and staff, addressing key educational issues, employee skills, productivity, sharing best practices, costing, working conditions, staff attraction/retention, intellectual capital, communication, innovation and creativity, learning/adaptation capability, employees’ empowerment, collaborations, and administrative processes [25].

Studies about KM and performance in the higher education institutions are few [7]. The Philippines as a country with the highest number of higher education institutions [26], KM literatures are very limited. This reality motivates the researcher to conduct study on KM and Performance Outcomes. Ramachandran et al. [27] identified strategy and leadership, organizational culture, information technology, and performance measurement as the knowledge management enablers. These popular KM enablers are adopted to guide this study. Since the performance of all universities around the world is measured through teaching, research, citation, international outlook, and industry income [28], these performance outcomes are also adopted to guide the study. This research paper aims to explore on how KM enablers (organizational culture, leadership, information technology, and employee motivation) impacts Performance Outcomes (teaching, research, citation, international outlook, and industry income) in state universities in the Philippines.

2. Research Model
3. Methodology

The research instrument or survey questionnaire used in this study was developed and adopted from Ramachandran et al. [17] which contain forty-six questions on KM enablers (15 from organizational culture, 11 from leadership, 10 from information technology, and 10 from employee motivation) which are measured on seven-point Likert scale. Tool to measure organizational performance was developed and adopted from Times Higher Education [18] which contains twenty-one questions on organizational performance (5 from teaching, 4 from research, 3 from citation, 3 from international outlook, and 6 from industry income) which are also measured on seven-point Likert scale. The instrument was composed of three parts: first part entails questions regarding demographic characteristics of the respondents, the second and third parts consists of questions about KM enablers and performance outcomes. The research instrument or survey questionnaire was distributed to thirty samples in one state university in the Philippines for the pilot study before the questionnaire delivered to the targeted respondents. This pilot study gathered comments and feedbacks that help improved the quality of questionnaire.

This research was cross-sectional in nature that allows data collection at one point in time. Descriptive survey is the research design and the quantitative technique was applied in the conduct of this research. The data were collected from three Philippine state universities in three major groups of islands (Luzon, Visayas, and Mindanao) for about four months. The sample size of the study was one hundred fifty. The questionnaires were personally distributed to the faculty members of each selected state university through simple random sampling technique with the help of Office of the University President, Vice President for Research, Director for Research, and Office of the Deans. One hundred fifty questionnaires were returned and no questionnaires discarded making the response rate of one hundred percent. Analysis of the test was performed by using SPSS version 23. The validity of the questionnaire was validated by the experts and reliability was computed by Cronbach’s alpha.

4. Results

Reliability is presented in Table 1 and indicates that the internal consistency was reliable because the Cronbach’s Alpha value for all the items exceeded the minimum 0.7 cut-off point [29].

| Variables             | Cronbach’s Alpha | Interpretation   |
|-----------------------|------------------|------------------|
| Organizational Culture| 0.968            | High Reliable    |
| Leadership            | 0.980            | High Reliable    |
| Information Technology| 0.983            | High Reliable    |
| Employee Motivation   | 0.978            | High Reliable    |
| Teaching              | 0.962            | High Reliable    |
| Research              | 0.974            | High Reliable    |
| Citation              | 0.987            | High Reliable    |
| International Outlook | 0.951            | High Reliable    |
| Industry Income       | 0.975            | High Reliable    |

Correlation is shown in Table 2. The result indicates that all KM enablers have positive correlation with performance outcomes (PO). Employee motivation (OM) has strong correlation with PO (r = 0.755), OC has second strong correlation with PO (r = 0.651), IT have third strong correlation with PO (r = 0.646), and LD has the fourth strong correlation with PO (r = 0.612) respectively.

The findings indicate that among the four KM enablers, EM (57.0%) has the greatest contribution on teaching, research, citations, international outlook, and industry income followed by OC (42.4%), IT (41.7%), and LD (37.5%) respectively. On the average, 55.8% of performance outcomes are related to KM enablers.

| Performance Outcomes | Organizational Culture | Leadership |
|----------------------|------------------------|------------|
| Pearson-r            | .678                   | .611       |
| P-value              | .000                   | .000       |

| Performance Outcomes | Information Technology | Employee Motivation |
|----------------------|------------------------|---------------------|
| Pearson-r            | .591                   | .715                |
| P-value              | .000                   | .000                |
Table 3. Regression Analysis

| Predictors | Dependent Variable | R    | R Square | Adjusted R Square | Std. Error of the Estimate |
|------------|--------------------|------|----------|-------------------|---------------------------|
| Organizational Culture (OC), Leadership (LD), Information Technology (IT), Employee Motivation (EM) | Teaching | .753  | .568  | .556  | .70603 |
| | Research | .745  | .555  | .542  | .74556 |
| | Citation | .685  | .469  | .455  | .81708 |
| | International Outlook | .673  | .453  | .438  | .94610 |
| | Industry Income | .736  | .542  | .529  | .72347 |

Table 4. ANOVA Models

| Model | Sum of Squares | Df | Mean Square | F  | Sig.  |
|-------|----------------|----|-------------|----|-------|
| OC, LD, IT, EM | Teaching | 94.897 | 4  | 23.724 | .498 | 47.594 | .000 |
| | Research | 100.401 | 4  | 25.100 | .556 | 45.156 | .000 |
| | Citation | 85.578 | 4  | 21.395 | .668 | 32.046 | .000 |
| | International Outlook | 107.387 | 4  | 26.847 | .895 | 29.993 | .000 |
| | Industry Income | 89.798 | 4  | 22.449 | .523 | 42.890 | .000 |

Table 5. Coefficients of Regression Analysis

| Model | Unstandardized Coefficients | Standardized Coefficients | t  | Sig.  |
|-------|-------------------------------|---------------------------|----|-------|
| (Constant) | Teaching | .123  | .040  | .295  | .594  | .762 |
| OC | .378  | .115  | .090  | 3.298 | .001 |
| LD | .101  | .101  | .090  | .894  | .373 |
| IT | .033  | .033  | .033  | .375  | .708 |
| EM | .430  | .430  | .430  | 3.819 | .000 |
| (Constant) | Research | .383  | .122  | .186  | 5.051 | .042 |
| OC | .249  | .121  | .078  | .765  | .446 |
| LD | -.092 | .120  | -.078 | -.765 | .446 |
| IT | .078  | .092  | .075  | .848  | .398 |
| EM | .667  | .119  | .602  | 5.060 | .000 |
| (Constant) | Citation | .855  | .133  | .207  | 2.089 | .038 |
| OC | .277  | .133  | .207  | 2.089 | .038 |
| LD | -.258 | .131  | -.219 | -.1963 | .052 |
| IT | .049  | .101  | .047  | .488  | .626 |
| EM | .728  | .130  | .655  | 5.585 | .000 |
| (Constant) | International Outlook | -.515 | .154  | .346  | 3.442 | .001 |
| OC | .529  | .154  | .346  | 3.442 | .001 |
| LD | -.319 | .152  | -.237 | -.2095 | .038 |
| IT | .276  | .117  | .232  | 2.367 | .019 |
| EM | .474  | .151  | .374  | 3.144 | .002 |
| (Constant) | Industry Income | .833  | .415  | .031  | 2.007 | .047 |
| OC | .040  | .118  | .031  | .341  | .734 |
| LD | -.009 | .116  | -.008 | -.081 | .935 |
| IT | .229  | .089  | .231  | 2.568 | .011 |
| EM | .559  | .115  | .527  | 4.839 | .000 |
Table 3 perceived that 56.8% of teaching, 55.5% of research, 54.2% of industry income, 46.9% of citation, and 45.3% of international outlook are due to KM enablers (organizational culture, leadership, information technology, and employee motivation).

Table 4 demonstrates that teaching, research, citation, international outlook, and industry income are all significant equal to 0.000 which are less than the value of alpha 0.05, and therefore the models are fit and valid.

Linear regression in Table 5 reveals that positive and significant relationship exists between employee motivation and performance outcomes in terms of teaching, research, citation, international outlook, and industry income. As a result, employee motivation has positive and significant impacts on teaching, research, citation, international outlook, and industry income. Another positive and significant relationship exists between organizational culture and performance outcomes in terms of teaching, research, citation, and international outlook. As a result, organizational culture has positive and significant impacts on teaching, research, citation, and international outlook. Also, positive and significant relationship exists between information technology and international outlook and industry income; therefore IT has positive and significant impacts on international outlook and industry income. However, negative and significant relationship exists between leadership and international outlook; therefore leadership has negative and significant impacts on international outlook.

The coefficients of OC are 0.378 and EM is 0.430 which means that for every unit progress in OC and EM the teaching performance would be accelerated by 0.378 and 0.430. Likewise, for every one unit progress in OC and EM the research performance would be accelerated by 0.249 and 0.667. Also, for every one unit progress in OC and EM the performance in citation would be accelerated by 0.277 and 0.728. In addition, for every one unit progress in OC, LD, IT, and EM the performance in international outlook would be accelerated by 0.529, -0.319, 0.276, and 0.474 respectively. Lastly, for every one unit progress in IT and EM the industry income performance would be accelerated by 0.229 and 0.559.

5. Discussion

The findings of the study demonstrate that employee motivation have positive and significant impacts on performance outcomes in terms of teaching, research, citation, international outlook and industry income. This signifies that if the state university provides reward systems it produces enhanced employee outcomes which in turn leads to better performance outcomes (teaching, research, citation, international outlook, and industry income). The study is in line with previous studies like Kwapong et al. [30] which investigated the effect of motivation on the performance of teaching staff in Ghanaian Polytechnics and found positive significant relationship between motivation and performance. Alfagira [31] investigated the role of motivation in teaching, research and publication in one university in Libya and established positive significant relationship between motivation (job satisfaction, work stress, salary, reward, promotion, and organizational policy) and the performance (teaching, research and publication). In addition, Aljaf and Saq [32] studied the impact of employee motivation on organizational performance at one university in Iraq and found that promotional opportunities and rewards led to increase the performance of the organization. Likewise, Mwabu and Were [33] concluded positive and significant influence of reward management, training and development, work environment, and career growth as employee motivation on the performance of research institutes in Kenya.

This research also revealed that organizational culture has positive and significant impacts on the four performance outcomes (teaching, research, citation, and international outlook). This means that if the state university practices the culture of creating, sharing, and applying knowledge the faculty and staff perform better in teaching, research, citation, and international outlook. The results are similar to the reports of Alshery [34] that organizational culture contributes significant positive impacts on employee performance of higher education sector of the Kingdom of Saudi Arabia. In the study of Raimi [35] found that organizational culture influences sustainability performance in higher education institutions in Nigeria. Idris [36] found that in higher education of Indonesia, organizational culture positively and significantly influences organizational performance such as level of absorption of the budget, level of income from research grants, level of accreditation, number of student admissions, number of lecturers’ research, and community service. In the case of Indonesians Islamic Higher Education Institutions, Hambali and Idris [37] also found that organizational culture highly influences organizational performance. Also, Taye et al. [38] confirmed that in one state university in Beijing, organizational culture (environment, mission, leadership, information, strategy, and socialization) strongly influences the individual performance and overall performance of the university. In Iraq, organizational culture (teamwork and innovation capability) plays significant role to the performance (job performance and education quality) of higher education institutions [39]. Results of the studies conducted in Saudi Arabia, Nigeria, Indonesia, China, and Iraq are contrasted in the findings in Palestine where organizational culture is not significantly related to the performance of higher education institutions [40].

In accordance with the results of this study, information technology has positive and significant impacts on international outlook and industry income. This signifies
that state university may establish information technology infrastructure to achieve better performance in international outlook (increase foreign students, foreign staff, and international collaboration) and industry income (increase innovations and inventions). The competitive advantage of an organization can be improved through IT [41]. Maria et al. [41] suggested that IT process requires measurements to indicate the IT performance in order to achieve the vision, mission, goals, and objectives of the organization.

However, leadership as a key factor of KM has negative and significant impacts on international outlook. This signifies that hiring people, supporting different programs, utilizing knowledge created by the faculty members, and implementing strategic plan in able to increase the numbers of foreign students and employees and international collaborations were affected by four years of leadership of the University President. This means that as the leadership changes, the strategies in internationalization were also changed. Leadership is one of the most important factors that affect high performance of universities and intermediate colleges in Palestine [42]. Leaders as suggested by Mastrangelo et al. [43] should focus on enhancing professional and personal leadership in order to positively impact organizational success. This research was conducted in the two school districts in New York and found that leadership has an impact on the intentions of the employees to cooperate which in turn resulted in high performance outcomes. Another research conducted in public universities in Ghana found that leadership supports improvement in the organizational performance [44].

6. Conclusion

This research concludes that among the four KM enablers only employee motivation is found to be a positive and significant predictor of the five measures of performance outcomes: (1) teaching, (2) research, (3) citation, (4) international outlook, and (5) industry income. Organizational culture as KM enabler is found to be a positive and significant predictor of teaching, research, citation, and international outlook. The KM enabler information technology is found to be a positive and significant predictor of international outlook and industry income while the KM enabler leadership is found to be a negative and significant predictor of international outlook.

7. Limitation and Future Research

The sample size of the study is relatively small to generalize the results. Future research can be conducted by replicating this study in a large sample size. The numbers of higher education institutions involved in the study are only three state universities. Future research can be conducted in all state universities and colleges. Other types of higher education institutions such as private and local universities and colleges may also consider in the future research. This research studied only the five measures in determining the best universities in the world while further studies may include accreditation and licensure examinations to detect organizational performance. This study employed quantitative method and in the future studies can adopt mixed method research (qualitative and quantitative).

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