The Association of Knowledge Management and Academic Performance in Academia

Krishna Prasad Paudel
School of Education, Kathmandu University, Lalitpur, Nepal

kpaudel.np@gmail.com
kppaudel@kusoed.edu.np

Abstract: The usage and practices of knowledge management in higher educational institutions are growing after the development of information and communication technology. Knowledge management in educational institutions is being practiced to enhance academic activities, particularly in innovative change in the research as along with teaching and learning practices. Knowledge management in academia impact on the academic performance of faculty members while conducting academic activities and promoting academic discourses is today's concern. In this background, this research adopts a quantitative methodology to collect data from the 445 academic staff employed at four universities in Nepal. The factor analysis was used to explore the variables and items associated with knowledge management and academic performance. This process has identified seven processes of knowledge management and four processes of academic performance. The relationship was carried out by using correlation analysis while the multiple regression analysis was used to measure the association of knowledge management and academic performance. The research shows the association between the processes of knowledge management and academic performance. The association and relationship of knowledge management and academic performance matter highly in academia. Furthermore, the knowledge creation process enhances the intellectual capital of every individual which has an impact on the knowledge economy of a society.

Keywords*:* Knowledge management, Academic performance, Association, Model, Academia

1. Introduction

The importance of Knowledge Management (KM) has been highly recognized in educational institutions, particularly in academia. KM in academia has been prioritized for a long time, seeking educational productivity and performance. Petrides and Nodine (2003) knowledge management practices seek to help teachers and faculty gather data and share information about which teaching approaches are most effective in specific learning environments.. Hence, the statement describes the importance of KM for stakeholders of higher educational institutions and universities to run their academic activities and enhance their academic performance. The majority of the organizations recognize knowledge as a major resource to obtain and sustain a competitive advantage. Knowledge has become an organizational asset that increases an organization's productive and adaptive capabilities (Marquardt, 2011). Knowledge management in academia is being used to enhance individual and institutional productivity. The effective KM in higher educational institutions demands how the academic activities of the university along with teachers and students are being practiced (Santosh & Panda, 2016). In this context, KM in Nepalese academia is being practiced to enhance academic activities in different areas such as research and publication, and theoretical integration in the teaching and learning process. Present research explored seven processes of knowledge management i.e., knowledge acquisition, generation, dissemination, transfer, creation, presentation, and utilization. It also explored four processes of academic performance i.e., research and publication, interactive learning, innovation, and capacity building. The study showed the association of research and publication with knowledge utilization, acquisition, and creation; innovation with knowledge utilization, acquisition, and presentation. It also confirmed interactive learning activities with knowledge utilization, generation, and dissemination; and capacity building with knowledge utilization, generation, acquisition, transfer, and creation.

2. Literature Review

The human mind can generate knowledge through reflection, interpretation, synthesis, and context of data that are available in the field. Davenport (1997, p. 9) clarified that data are "observations of states of the word, which can be easily structured, captured on the machine and later on can be transferred easily". The two dimensions of knowledge creation as identified by Nonaka, Toyama, and Hirata (2008) are epistemological and ontological. The epistemological dimension concerns the conversion of knowledge from tacit to explicit and vice-versa in any institution. The ontological dimension transforms knowledge from individuals to groups and then transfers that knowledge from groups to the organization (Nonaka, 1994) to enhance organizational efficiency and

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productivity. The combination of these two dimensions is referred to as the model of SECI (Socialization, Externalization, Combination, and Internalization).

Knowledge management includes the process of conversion of tacit knowledge into explicit knowledge. This knowledge is further accessed, shared, and transferred by individuals and groups within organizations. Based on the context and situation, either we follow a technology-focused process or a process-focused process to convert tacit knowledge into explicit one. Knowledge management needs to study three elements- people, processes, and technology (Edwards, 2011). The people or users at the different institutions use some types of technological tools either to generate or transfer to solve problems. According to Mao, Liu, and Zhang (2015), people implement organizational changes to enable a knowledge-sharing culture. Literature has revealed that knowledge management is composed of 80% people and 20% technology (Girard and Girard, 2015). Thus, people must be motivated to share what they know. People with high technical skills are very innovative and are needed in most organizations (Bassi, 1998). Parlby (1997) defines it as the discipline of capturing knowledge-based competencies for storing and disseminating them for the benefit of the organization as a whole.

2.1 Knowledge Management and Academic Performance

KM has been broadly applied not only in the business sector but also in the higher education arena. The goal of KM in academic institutions also relates to the management of knowledge to achieve an institution's advantages (Mohayidin et al., 2007; Yusoff, Mahmood, and Jaafar, 2012). These advantages cover the achievement of the higher education mission such as teaching, conducting research, and community servicing along with the improvement of organizational management that covers developing strategic plans and improving decision-making processes.

Universities are the prior place to conduct academic activities, along with research and publication. According to Steinberger (1993), academic performance is a multidimensional concept related to human growth and cognitive, emotional, social, and physical development. Academic performance is used to enhance the capacity of the individuals in HEIs. Fairweather (1996); Marsh and Hattie (2002); and Asif et al., (2017) explain academic performance as activities like teaching and research. They focus on the academic performance of the faculty members as they teach inside classrooms and conduct research outside the classrooms. After teaching, the next job would be to conduct research activities that generate new concepts and enhance the capacity of both the students and faculty members.

The main objective of the academic output is to prepare both the faculty members and students for the research and innovation activities. Besides this, another objective is to prepare them to deliver the ideas and concepts of research inside the classroom along with developing new concepts. University Grant Commission (UGC) of India (2010) has identified the academic performance indicator (API) in three categories as (1) teaching, learning, and evaluation-related activities; (2) co-curricular, extension, and professional development related activities; and (3) research and academic contributions related activities. Their framework highlights both activities of lecturing in classrooms and conducting research activities outside the classrooms. Research innovations inside as well as outside the classrooms help them to develop new knowledge. It also enhances the capacity of the individuals in the context of educational institutions.

The review of the existing KM literature in higher education suggests that various KM definitions can be categorized into three distinct perspectives: economic, cognitive, and information management (Wiig, 1993; McCarthy, 2006; Lee, 2007). Each perspective leads to the underlying assumptions of each KM definition. The major objectives of the university are to teach and make active participation of the learners along with the faculty members in the research activities. They are expected to produce the new knowledge which is required to the society and nation. It enhances the individuals and organizational capacity. Hilman and Abubakar (2017) regard academic performance as the student-related academic activities and their extra-curricular achievements. The study conducted by Zwain, Lim, and Othman (2012) emphasize the collaboration of KM in higher educational institutions to enhance academic performance. Further, they explored the student-related academic attainment as students' academic status, classes of degree, and graduation rates as the indicators of assessing university performance. The extracurricular achievements consist of having competitive positions, innovation, organizational agility, sustainability, and market share.

The learning behavior, network-building capacity, and information accessing attitude of faculty members help to enhance their capacity-building processes to produce new knowledge in academia (Paudel, 2020). The existing literature shows that there exists a relationship between knowledge management and academic

performance. The present study explores which processes of knowledge management is highly correlated with academic activities in higher educational context.

2.2 Knowledge Management in Nepalese Context

After the establishment of democracy in Nepal in 1990, the use of ICT is being prioritized in all sectors. The Ministry of Information and Communication (MOIC) developed the IT Policy (2000) that emphasizes the inclusion of computer education in the curriculum from the school level. The IT Policy (MOIC, 2010) prioritized assisting educational institutions and encouraging domestic and foreign training in fulfilling the requirement of appropriate human resources of information technology. The purpose was to enhance organizational effectiveness and efficiency.

Referring to National ICT Policy (MOIC, 2015), it focuses on the ICT in education, research, and development. Likewise, the higher education policy of the Ministry of Education (2015) focuses on (i) producing human resources competent enough in the global context, (ii) prioritizing research and development, (iii) establishing higher education research council, and (iv) enhancing the impacts of higher education studies and research and make it contextually relevant, useful and globally competent. Similarly, the HE Policy by UGC (UGC Nepal, 2015) emphasized (i) to promote access to higher education by regulating, managing, and maintaining the dignity of the higher education institutions regarding its establishment, operation, regulation, and management, (ii) to develop human resource inclined to science and technology, competitive and enterprising for the overall socio-economic development having established higher education as cornerstones of original knowledge and identity considering extension and diversification of school education, and (iii) to make globally competitive citizens with due focus on relevance, usefulness, and quality, increasing the opportunities for higher education and research.

National Planning Commission (2016) recommended making higher education accessible, competitive, and researchable. Likewise, as enshrined in the National Educational Policy released by the Ministry of Education, Science, and Technology (MOEST, 2019), the goal of education is to develop human resources by making education competitive, techno-friendly, employment-oriented, and productive as per the need of the country. In this regard, universities in Nepal are getting involved in producing innovative knowledge businesses. To get innovative concepts and ideas demands support from the stakeholders of the universities.

3. Method

A survey method was used to conduct this research. The self-developed survey tools was used to collect the data. The tools was developed by the researcher through the Delphi method. The Delphi method is a popular process to achieve consensus on important issues or complex social problems with the help of subject experts and practitioners in the particular field (Linstone and Turoff, 2002). The Delphi process generally includes in-depth interviews with practitioners in the field (grounded), written interviews, open-ended questions, and panel discussions with experts. Thus, the Delphi process carries out the local knowledge, norms, and values in the social context (Paudel, 2019a). Campanelli (2008) advised three steps in tools development such as literature review, experts' consultation, and understanding of participants' cultural and language issues while developing the survey questions.

The steps of the tools' development have been defined as:

Step I: Books, journal articles, working papers, research reports, and empirical studies of knowledge management and academic performance in the contexts of higher educational institutions were reviewed.

Step II: Open interviews with knowledge management experts and practitioners to identify the contextually measurable items of knowledge management and academic performance were conducted. Guzys, Dickson-Swift, Kenny, and Kenny (2015) suggested selecting the participants on the basis of their experience and knowledge.

Step III: Guzys et al. (2015) opined that such a panel discussion was a part of Delphi. Therefore, a panel discussion consisting of a team of experienced experts and role players in the areas of knowledge management sector was conducted. Dew and Xiao (2011) also argued that the panel discussion among the experts help in assuring face and content validity.

Step IV: Collecting the items

In this study, the identified indicators from the grounded data including experts' views and insights received from panel discussion were compared with literature and categorized into different dimensions of knowledge management and academic performance. The variables/items of knowledge management were named; KM1,

KM2 and so on. For the variables/items of academic performance were named; AP1, AP2, and so on. The researcher developed 7-point Likert scales from the indicators identified from the field (grounded) expert interviews and literature to measure knowledge management practices. Croasmun and Ostrom (2011) argue that high-scale points increase reliability. On that account, the researcher followed the 7-point scale to develop a questionnaire for this study. The tool used to conduct this research is presented in Annex. The reliability and validity of the tool were tested before collecting the data. Many statistical tools are available to measure the reliability and internal consistency of the data. Among them, the split-half method and alpha coefficient of consistency are mostly used (Best and Kahn, 2006). Cronbach's alpha coefficient was then used in the study to check the consistency of the instrument. "For an instrument to be used, its internal reliability coefficient Cronbach's alpha (α) must be at least 0.7" (Santos, 1999). In this study, all of the dimensions of knowledge management had a value greater than 0.7 and satisfied this condition. Creswell (2013) explained that validity seeks whether the questionnaire measures what it intends to measure or not. Among many types of validity, construct, content, and criterion validity are three principal validities that need to be considered at the very outset of quantitative research (Cohen, Manion, and Morrison, 2018). Construct, content, and criterion validity are evaluated during the whole process of research (Babbie, 2001; Huck, 2012).

The population of this study primarily comprised all the faculty members (professors, associate professors/readers, and assistant professors/lecturers) working at the central schools/departments of the four universities of Nepal. The faculty members were taken from the general education stream, particularly the Humanities, Education, Management, and Science departments. The faculty were taken from Tribhuvan, Kathmandu, Purvanchal and Pokhara University. First of all, I managed to prepare a list of the respondents with the contact numbers and meeting were requested with them with the help of the head of department of each schools/departments. The survey was conducted in the group meeting according to the schedule provided by the respective central colleges of the university. In each survey, I requested selected participants to fill up the questionnaire. I confirmed self-enumeration of the data to reduce the non-response error, incomplete response, the cost of data collection. Also, it was to help in managing secrecy of sensitive issues (Weisberg, 2009). As I collected the data, the research has opened two options to respond to the questionnaire, either to fill up the printed copy of the questionnaire or provide the information through e-mail by using google form that I developed.

The data was collected from 445 faculty members of higher educational institutions of Nepal, working in central campuses of four universities. The data was collected through stratified sampling methods between January to July 2017. Initially, the data was coded in SPSS version 25. The factor analysis was executed to explore the dimensions of knowledge management and academic performance. Factor analysis is a multivariate statistical technique (Rummel, 1967; Shenoy and Madan, 1994), which is used to determine a large number of variables in terms of relatively few hypothetical variables called factors. The correlation analysis was executed to see the relationship between dimensions of knowledge management and academic performance. The correlation analysis explains three fundamental dimensions of data: significance, direction, and magnitude (Sekaran, 2003). To measure the associations between knowledge management and academic performance, the regression analysis was executed. The main reason for conducting a multiple regression analysis was to determine whether the regression coefficients of the given predictor set of variables were statistically different or not (Cohen, West, and Aiken, 2014). The current study determined the association between knowledge management and academic performance in a higher educational context.

4. Results

The dimensions of knowledge management and academic performance were identified by using factor analysis. Before executing factor analysis all the conditions (Field, 2005) were checked. Once the number of items under each factor was identified, the name of the factor was given based on the variables within the factors (Young & Pearce, 2013) based on the researchers' judgement. The items/variables of factors of knowledge management is presented in Table 1.

Table 1: Final Factors of Knowledge Management

Factor	Item Name	Factor Loading						
		1	2	3	4	5	6	7
1	Improve Efficiency	0.723						
	Conduct Research	0.718						

Factor	Item Name	Factor Loading						
		1	2	3	4	5	6	7
	Increase Thought	0.645						
	Daily Life Issues	0.595						
	Solving Problem	0.552						
2	Interaction		0.724					
	Discussion		0.723					
	Modern Technology		0.671					
	Conducting Training		0.46					
3	Individual Performance			0.734				
	Organizational Leadership			0.616				
	Professional Networks			0.606				
	Conference Participation			0.514				
4	Knowledge by Teaching				0.697			
	Usage of Social Media				0.682			
	Institutional Research				0.58			
5	Usage of e-Portal					0.718		
	Learning Environment					0.715		
	Training Sessions					0.571		
6	Mentoring new faculty						0.748	
	Joint Projects						0.563	
	Workshop/Conference						0.532	
	Purchase of e-Sources						0.411	
7	Individual Training							0.73
	Simulators							0.693
	Consultancy Services							0.515

Table 1 shows the keywords of the items of the variable with their respective factors of knowledge management identified by factor loading. Based on the keyword of the items/variables, the name of the factors was given. These factors were named Knowledge Utilization (KU), Knowledge Acquisition (KA), Knowledge Generation (KG), Knowledge Dissemination (KD), Knowledge Transfer (KT), Knowledge Creation (KC), and Knowledge Presentation (KP) respectively.

The items/variables of factors of academic performance is presented in Table 2.

Table 2: Final Factor of Academic Performance

Factors	Items Name	Factor Loading			
		1	2	3	4
1	Involvement in Research	0.879			
	Bringing Research Insights to Classroom	0.875			
	Mentoring through Technology	0.600			
	Conversion of Theory into Practice	0.530			
	Number of Publications	0.515			
	Interaction with Students	0.433			

Factors	Items Name	Factor Loading			
		1	2	3	4
2	Quality Information Inside Classroom		0.844		
	Classroom Environment		0.783		
	Case-based Learning		0.702		
	Focuses on Activities		0.430		
3	Preparation of Lesson Plan of Semester			0.790	
	Preparation of Lesson Plan of Topics			0.755	
	Use of e-Portal During Class			0.613	
4	Generation of New Knowledge				0.715
	Involvement of Students in Research				0.700
	Technology in Classrooms				0.673

Table 2 shows the keywords of the items of the variable with their respective factors of academic performance identified by factor loading. The factors of academic performance were termed considering the keyword of each item/variable. The first factor was named as Research and Publications (RP) while rest of other factors were termed Innovation (INNO), Interactive Learning (IL), and Capacity Building (CB) accordingly. Hence, this study identified the seven processes (factors) of knowledge management and four processes (factors) of academic performance.

To check the relationship of the dimensions of knowledge management and academic performance correlation analysis was executed. The study showed the correlations between the processes of knowledge management and the academic performance of faculty members. Each of the knowledge management processes, namely knowledge utilization, acquisition, generation, dissemination, transfer, creation, and presentation were correlated and regressed on each of the four dimensions of academic performance such as research and publication, innovation, interactive learning, and capacity building. The output of the correlation analysis is presented in Table 3.

Table 3: Correlations Between Knowledge Management and Academic Performance

	KU	KA	KG	KD	KT	KC	KP
RP	.44**	.36**	.33**	.32**	.20**	.36**	.24**
INNO	.40**	.33**	.26**	.37**	.12*	.18**	.25**
IL	.38**	.30**	.41**	.33**	.18**	.22**	.11*
CB	.52**	.37**	.53**	.38**	.38**	.18**	.24**
*Correlation is significant at the 0.01 (**.), 0.05 (*.) level (2-tailed).							

The results presented in Table 3 indicate the positive correlations between dimensions of knowledge management and academic performance at different levels. According to Bartz (1999), the relations among dimensions are from the range of very low to moderate level. However, since all the coefficients were found to range from very low to moderate correlation (Bartz, 1999), it was deemed necessary to conduct a regression analysis to determine the existence of a causal influence of knowledge management on academic performance. Multiple regression analysis was conducted to examine the contribution of the predictors of knowledge management for the dimensions of academic performance. The output of the multiple correlation analysis is presented in Table 4.

Table 4: Output of Multiple Regression Analysis

Predictor of KM	RP		INNO		IL		CB	
	Beta	t-Value	*Beta*	t-Value	*Beta*	t-Value	*Beta*	t-Value
Utilization	0.255	5.012*	0.224	4.245*	0.188	3.587*	0.287	6.351*
Acquisition	0.144	2.795*	0.085	1.585	0.088	1.658	0.085	1.852

Predictor of KM	RP		INNO		IL		CB	
	Beta	t-Value	*Beta*	t-Value	*Beta*	t-Value	*Beta*	t-Value
Generation	0.072	1.426	0.060	1.139	0.296	5.667*	0.369	8.190*
Dissemination	0.041	0.798	0.205	3.824*	0.109	2.039	0.060	1.301
Transfer	-0.052	-1.128	-0.094	-1.966*	-0.053	-1.123	0.150	3.651*
Creation	0.208	4.409*	0.008	0.155	0.006	0.133	-0.175	-4.192*
Presentation	0.065	1.491	0.129	2.859*	-0.054	-1.197	0.042	1.089
R	.531[a]		.479[a]		.490[a]		.659[a]	
R^2	0.282		0.229		0.240		0.435	
Adjusted R^2	0.270		0.217		0.228		0.425	

From the data of table 4, out of seven different independent variables, only three variables viz. knowledge utilization, acquisition, and creation are found significant for research and publication at a 5% level of significance. Similarly, knowledge utilization, dissemination, and presentation are found significant for innovation at a 5% level of significance. Likewise, knowledge utilization, generation, and dissemination are found significant for interactive learning at 5% of significance. And knowledge utilization, generation, transfer, and creation are found significant for capacity building at 5% of significance.

When the coefficients are significant, it proves that the respective predictor variables are relatively important in predicting the criterion variable. The results were interpreted using non-standardized beta coefficients and the R-square. Un-standardized coefficients show a change that is observable when the variables are in raw form. They are not standardized in the sense that they have different means and different standard deviations. The higher the beta coefficients of the independent (predictor) variables are, the more predictive power they have on the dependent (criterion) variable if the coefficient is significant. The R-square, in contrast, indicates the percentage of variance in the dependent variable, which is explained jointly by the independent variables (Hair et al., 1998). To analyze the significance, the step-wise regression was conducted. The output for a maximum number of the significant independent variable is presented in Table 5.

Table 5: Model Summary of Dimensions of Academic Performance

Dimension	R	R Square	Adjusted R Square	Std. Error of the Estimate
RP	.521[a]	0.272	0.267	0.65338
INNO	.466[b]	0.217	0.212	0.83895
IL	.481[c]	0.232	0.226	0.75932
CB	.656[d]	0.431	0.425	0.90258

- Predictors: (Constant), Knowledge Utilization, Knowledge Construction, Knowledge Acquisition
- Predictors: (Constant), Knowledge Utilization, Knowledge Dissemination, Knowledge Presentation
- Predictors: (Constant), Knowledge Utilization, Knowledge Generation, Knowledge Dissemination
- Predictors: (Constant), Knowledge Generation, Knowledge Utilization, Knowledge Transfer, Knowledge Construction, and Knowledge Acquisition

Table 5 shows that the model for research and publication; R=0.521 and R^2 =0.272 and Adjusted R^2 = 0.267. Taking the value of adjusted R^2, we can say that knowledge utilization, creation, and acquisition combine to explain the research and publication variable by 26.7%. That means, still 73.3% explanation of the research and publication is undefined. However, 26.7% is the pretty larger value to define a faculty's research and publication status due to different dimensions of knowledge management. Table 3 also shows the model of innovation; R = 0.466 and R^2 = 0.217 and Adjusted R^2 = 0.212. Taking the value of adjusted R^2, we can say that knowledge utilization, dissemination, and presentation combine to explain the innovative variable by 21.2%. That means, still 78.8% explanation of the innovation is undefined. However, 21.2% is the pretty larger value to define a faculty's innovation status due to different dimensions of knowledge management.

Table 5 shows the model of interactive learning; R = 0.481 and R^2 = 0.232 and Adjusted R^2 = 0.226. Taking the value of adjusted R^2, we can say that knowledge utilization, generation, and dissemination combine to explain the interactive learning variable by 22.6%. That means, still 77.4% explanation of the interactive learning is

undefined. However, 22.6% is the pretty larger value to define a faculty's interactive learning status due to different dimensions of knowledge management. Table 5 shows the model for capacity building; R = 0.656 and R^2 = 0.431 and Adjusted R^2 = 0.425. Taking the value of adjusted R^2, we can say that knowledge utilization, generation, acquisition, transfer, and creation combine to explain the capacity building Variable by 42.5%. That means, still 57.5% explanation of the capacity building is undefined. However, 42.5% is the pretty larger value to define a faculty's capacity-building status due to different dimensions of knowledge management. It is required to test the regression value based on the residual values after identifying the model of each dimension of academic performance. It is presented in Table 6.

Table 6: Regression and Residual Values of Dimensions of AP

Dimension		Sum of Squares	df	Mean Square	F	Sig.
RP	Regression	70.222	3	23.407	54.83	0.000[a]
	Residual	188.265	441	0.427		
	Total	258.487	444			
INNO	Regression	86.263	3	28.754	40.854	0.000[b]
	Residual	310.392	441	0.704		
	Total	396.655	444			
IL	Regression	76.615	3	25.538	44.295	0.000[c]
	Residual	254.263	441	0.577		
	Total	330.878	444			
CB	Regression	270.879	5	54.176	66.502	0.000[d]
	Residual	357.632	439	0.815		
	Total	628.511	444			

- Predictors: (Constant), Knowledge Utilization, Knowledge Construction, Knowledge Acquisition
- Predictors: (Constant), Knowledge Utilization, Knowledge Dissemination, Knowledge Presentation
- Predictors: (Constant), Knowledge Utilization, Knowledge Generation, Knowledge Dissemination
- Predictors: (Constant), Knowledge Utilization, Knowledge Generation, Knowledge Acquisition, Knowledge Transfer, and Knowledge Construction

In Table 6, the F test for research and publication was found significant (F = 54.83 and p-value = 0.000 ($<\alpha = 5\%$)). This means, the best-fit regression model with explanatory variables like knowledge utilization, creation and acquisition, and output variable research and publication can be developed. Likewise, the F test for innovation was found significant (F = 40.86 and p-value = 0.000 ($<\alpha = 5\%$)). This means, the best-fit regression model with explanatory variables knowledge utilization, and presentation and output variable innovation can be developed.

Table 6 shows that the F test for interactive learning wassignificant (F = 44.30 and p-value = 0.000 ($<\alpha = 5\%$)). This means, the best fit regression model with explanatory variables knowledge utilization, generation and presentation and output variable interactive learning can be developed. And, the F test for capacity building was found significant (F = 66.5 and p-value = 0.000 ($<\alpha = 5\%$)). This means, the best-fit regression model with explanatory variables knowledge generation, utilization, transfer, creation and acquisition, and output variable capacity building can be developed. Now, the result of the regression analysis for the t-test has been presented in table 7.

Table 7: Coefficients of Dimensions of Academic Performance

Coefficient		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig
RP	Constant (a)	1.843	0.311		5.931	.000

Coefficient		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig
	Knowledge Utilization	0.298	0.05	0.284	5.995	.000
	Knowledge Creation	0.241	0.044	0.234	5.453	.000
	Knowledge Acquisition	0.158	0.043	0.172	3.707	.000
INNO	Constant (b)	1.674	0.403		4.153	.000
	Knowledge Utilization	0.314	0.063	0.242	5.008	.000
	Knowledge Dissemination	0.221	0.043	0.24	5.088	.000
	Knowledge Presentation	0.19	0.061	0.138	3.128	0.002
IL	Constant ©	2.737	0.298		9.175	.000
	Knowledge Utilization	0.229	0.058	0.194	3.938	.000
	Knowledge Generation	0.224	0.039	0.274	5.752	.000
	Knowledge Dissemination	0.118	0.04	0.14	2.919	0.004
CB	Constant (d)	-0.557	0.443		-1.258	0.209
	Knowledge Utilization	0.491	0.072	0.301	6.786	.000
	Knowledge Generation	0.43	0.05	0.382	8.62	.000
	Knowledge Acquisition	0.165	0.059	0.115	2.788	0.006
	Knowledge Transfer	0.206	0.054	0.156	3.815	.000
	Knowledge Creation	-0.27	0.067	-0.168	-4.041	.000

- Dependent Variable: Research and Publication
- Dependent Variable: Innovation
- Dependent Variable: Interactive Learning
- Dependent Variable: Capacity Building

The data presented in Table 7 produces the four different models of academic performance concerning knowledge management. The multiple regression equation can be presented in the form of:

$$Y = \beta_0 + \beta 1x1 + \beta 2x2 + \beta 3x3 + ... + \varepsilon$$

Now, according to the value of Table 5, we can develop the following models of academic performance;

$$RP = \beta_0 + \beta 1KU + \beta 2KC + \beta 3KA + \varepsilon \text{.....i}$$

$$INNO = \beta_0 + \beta 1KU + \beta 2KD + \beta 3KP + \varepsilon \text{..... ii}$$

$$IL = \beta_0 + \beta 1KU + \beta 2KG + \beta 3KD + \varepsilon \text{..... iii}$$

$$CB = \beta_0 + \beta 1KU + \beta 2KG + \beta 3KA + \beta 4KT + \beta 5KC + \varepsilon \text{ .....iv}$$

After developing the model, Field (2005) suggests fulfilling the following conditions to confirm the models for their best fit: (1) No existence of autocorrelation, (2) No multi-collinearity, (3) No heteroscedasticity, (4) Normality of residuals.

To check the autocorrelation test, the Durbin-Watson Test was performed. The result of Durbin-Watson Test is presented in table 8.

Table 8: Durbin-Watson Test Statistics of Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.521[a]	0.272	0.267	0.65338	1.827

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
2	.466[b]	0.217	0.212	0.83895	1.539
3	.481[c]	0.232	0.226	0.75932	1.962
4	.656[d]	0.431	0.425	0.90258	1.878

- Predictors: (Constant), Knowledge Creation, Knowledge Acquisition, and Knowledge Utilization; Dependent Variable: Research and Publication
- Predictors: (Constant), Knowledge Utilization, Knowledge Dissemination, and Knowledge Presentation; Dependent Variable: Innovation
- Predictors: (Constant), Knowledge Generation, Knowledge Utilization, and Knowledge Dissemination; Dependent Variable: Interactive learning
- Predictors: (Constant), Knowledge Utilization, Knowledge Generation, Knowledge Acquisition, Knowledge Transfer, and Knowledge Creation; Dependent Variable: Capacity Building

Since the value of Durbin-Watson presented in table 8 is 1.827 (model 1), 1.539 (model 2), 1.962 (model 3), and 1.878 (model 4) lying between the range of 1.5 to 2.5 (Field, 2005), it represented that there was no autocorrelation issue in the dataset. After measuring the value of Durbin-Watson it further tested the collinearity of Variance Inflation Factor (VIF), which is presented in Table 9.

Table 9: Collinearity of VIF Test Statistics of Academic Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig	Tolerance	VIF
		B	Std. Error	Beta				
1	Constant (a)	1.84	0.31		5.93	.000		
	KU	0.30	0.05	0.28	6.00	.000	0.73	1.36
	KA	0.16	0.04	0.17	3.71	.000	0.77	1.31
	KC	0.24	0.04	0.23	5.45	.000	0.90	1.12
2	Constant (b)	1.67	0.40		4.15	.000		
	KU	0.31	0.06	0.24	5.01	.000	0.76	1.32
	KD	0.22	0.04	0.24	5.09	.000	0.80	1.25
	KP	0.19	0.06	0.14	3.13	.002	0.92	1.09
3	Constant (c)	2.74	0.30		9.18	.000		
	KU	0.23	0.06	0.19	3.94	.000	0.72	1.39
	KG	0.22	0.04	0.27	5.75	.000	0.77	1.30
	KD	0.12	0.04	0.14	2.92	.004	0.76	1.32
4	Constant (d)	-0.56	0.44		-1.26	.209		
	KU	0.49	0.07	0.30	6.79	.000	0.66	1.52
	KA	0.17	0.06	0.12	2.79	.006	0.76	1.32
	KG	0.43	0.05	0.38	8.62	.000	0.66	1.52
	KT	0.21	0.05	0.16	3.82	.000	0.78	1.29
	KC	-0.27	0.07	-0.17	-4.04	.000	0.75	1.34

- Dependent Variable: Research and Publication
- Dependent Variable: Innovation
- Dependent Variable: Interactive Learning
- Dependent Variable: Capacity Building

Table 9 showed that the VIF for each of the independent variables was between 1- 10 (Field, 2005). This means there is no issue of multi-collinearity. Further, to test the best fit of the model, the effect of the independent variables on the residual was checked to understand the issue of heteroscedasticity. After testing VIF, it further tested Heteroscedasticity which is presented in Table 10.

Table 10: Heteroscedasticity Test Statistics of Academic Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	-3.1E-15	0.311		.000	1.000
	KU	.000	0.05	.000	.000	1.000
	KA	.000	0.043	.000	.000	1.000
	KC	.000	0.044	.000	.000	1.000
2	(Constant)	1.768	0.403	.000	.000	1.000
	KU	.000	0.063	.000	.000	1.000
	KD	.000	0.043	.000	.000	1.000
	KP	.000	0.061	.000	.000	1.000
3	(Constant)	2.479	0.298	.000	.000	1.000
	KU	.000	0.058	.000	.000	1.000
	KG	.000	0.039	.000	.000	1.000
	KD	.000	0.04	.000	.000	1.000
4	(Constant)	1.37E-15	0.443		.000	1.000
	KU	.000	0.072	.000	.000	1.000
	KA	.000	0.059	.000	.000	1.000
	KG	.000	0.05	.000	.000	1.000
	KT	.000	0.054	.000	.000	1.000
	KC	.000	0.067	.000	.000	1.000

As observed in Table 10, none of the independent variables significantly contributed to the unstandardized residual. So, it can be claimed that the model does not have the issue of heteroscedasticity. After this, the normality of distribution was tested. The histogram was produced and it showed that there were no issues of normality. Thus, the model presented in the model summary in table 5 has (a) no issue of autocorrelation, (b) no issue of multicollinearity, (c) no issue of heteroscedasticity, and (d) residuals are normally distributed. It showed that there was an association between knowledge management and academic performance, particularly the linear relationship among the research and publication with knowledge utilization, acquisition, and creation; innovation with knowledge utilization, dissemination, and presentation; interactive learning with knowledge utilization, generation, and dissemination; and capacity building with knowledge utilization, acquisition, generation, transfer, and creation. The association is presented below.

If we put the value of Table 5 to equations (i), (ii), (iii), and (iv), then we get;

RP = 5.931 + 5.931KU + 5.995KC + 3.307KA …….. (1)

INNO = 4.153 + 5.008KU + 5.088KD + 3.128KP …….. (2)

IL = 9.175 + 3.938KU + 5.752KG + 2.919KD …….. (3)

CB = 1.258 + 6.786KU + 8.620KG + 2.788KA + 3.815KT + 4.041KC ……..…..(4)

The model of academic performance in higher educational institutions explains the relations of different academic activities through knowledge management to enhance academic discourses. The research and

publication demand some six activities of knowledge utilization, six activities of knowledge creation, and three activities of knowledge acquisition to perform the research and publication activities in higher educational institutions if other things remain constant. The model further demands five activities of knowledge utilization, five activities of knowledge dissemination, and three activities of knowledge presentation to make innovative academic works.

The model further explained that interactive learning can be done through the integration of four activities of knowledge utilization, six activities of knowledge generation, and three activities of knowledge dissemination. The last model explained the capacity building of the faculty members in HEIs. It demands the integration of six activities of knowledge utilization, eight activities of knowledge generation, two activities of knowledge acquisition, three activities of knowledge transfer, and four activities of knowledge creation in the context of higher educational institutions. Hence, an association exists between knowledge management and academic performance. The association of research and publication was determined by knowledge utilization, creation and acquisition; innovation by knowledge utilization, dissemination, and presentation; interactive learning in knowledge utilization, generation, and dissemination; and capacity building on knowledge utilization, generation, acquisition, transfer, and creation in the context of higher educational institutions.

5. Discussion

The previous researches were views form the concepts of the KM and collaboration of KM in academia. But this research focuses how the academic activities and discourses is demanded to practice knowledge management in academia to enhance intellectual capital and knowledge economy of a country. The study also indicates that the faculty members of HEIs can empower with high academic excellence which impact on the effectiveness of transferring the new knowledge to students. In this regard, the regression analysis identified the linear relationship of research and publication only with three dimensions of KM, namely knowledge utilization, knowledge acquisition, and knowledge creation. Mainly the interaction, group discussion, conduction of training activities, usage of modern technology, mentorship to the new faculty, conduction of joint projects, accessing of e-sources, participation in the workshop and conferences help to enhance the personal efficiency to conduct research activities in the educational context. KM enhances research collaboration across a university, increasing the number of research projects and publications (Chumjit, 2012; Cranfield, 2011; Tan and Noor, 2013). New methods for research are created that facilitate researchers to develop research proposals that are matched with private sector needs, including receiving extra funding from the private sector (Chumjit, 2012). For this, technology allows employees to access, collect, and assimilate existing internal knowledge within an organization and/or external knowledge from outside (Dalkir, 2005; Watcharadamrongkun, 2012) and helps to generate new knowledge. The systems/facilities such as the internet, e-mail, intranet, groupware, telecommunication, memorandum, weblogs, mobile technology, online/web-based learning system, and CD/DVD/VCD facilitate KM at the universities for research activities. The knowledge management behavior of individuals enhances the research activities within educational institutions.

Similarly, the test statistics presented in table 3 show that there exists a linear relationship between knowledge management and innovation. In the same chapter, the regression analysis identified the linear relationship of innovation only with three dimensions of KM, namely knowledge utilization, knowledge dissemination, and knowledge presentation. It is found that consultancy services, development of simulators, conduction of training sessions, usage of social media, problem-solving capacity are in good position. Problem seeking and solving in higher education (Mohamad, 2012) is enhancing innovation within the educational context mainly in the higher education institution of Nepal. The knowledge disseminating and presenting behavior of faculty members enhance the innovative process of the faculty member and help to generate new knowledge. Involvement and participation affect knowledge sharing in higher education (Mohamad, 2012).

Knowledge management supports innovation in two ways (Maqsood and Finegan, 2009). First, it helps organizations locate innovative knowledge in the outside world, brings that knowledge inside the organization, and effectively incorporates it into work practices. Second, knowledge management supports innovation by helping organizations to perform more productively. The KM processes help organizations to obtain, assimilate and use external innovative knowledge. The innovation is guided by the theory of SECI (Socialization, Externalization, Combination, and Internalization) developed by Nonaka and Takeuchi. According to Petrides and Nodine (2003), the entire objective of KM in education is to augment and ensure that students get the right knowledge through the quality of material or instructions. Bhusry and Ranjan (2011) state that KM can enhance the quality of teaching and learning in tertiary educational institutions. It implies that the knowledge management behavior of individuals impacts the innovative process of the individuals.

Likewise, the test statistics presented in table 3 show that there exists a linear relationship between knowledge management and interactive learning. In the same chapter, the regression analysis identified the linear relationship of interactive learning only with three dimensions of KM, namely knowledge utilization, knowledge generation, and knowledge dissemination. Gopal and Shobha (2012) recommended integrating the KM in university for the teaching and learning process. The study conducted by Zwain, et al., (2012) followed literature to identify the dimensions of knowledge management and academic performance, then tested the significant relationship between knowledge management and academic performance in Iraqi HEIs. For this research, the researcher followed factor analysis to identify the dimensions of knowledge management and academic performance of Nepalese HEIs after developing the tools from the Delphi method. The study of Zwain, et al., (2012) focuses on the leadership role while testing the hypothesis in Iraqi HEIs but the researcher highlighted the academic activities and discourses of the academic staff of Nepalese HEIs to test the association between knowledge management and academic performance. The current study examined the association of academic performance, particularly research and publication, innovation interactive learning, and capacity building along with the knowledge management practices in higher educational institutions of Nepal. Chumjit (2012) explored the application of knowledge management (KM) in the higher education institutions of Thailand for new methods for improving teaching, research, administration, and strategic planning within various sections and departments. These days, interactive learning is impacting technology. The modern tools of IT and ICT are playing a vital role to enhance the interactive learning process in the educational context. University obtains new methods for teaching which will encourage students to pay more attention to their studies (Chumjit, 2012). Higher education intended to promote learning at the institutional level should implement practices related to the generation of knowledge employing research, training, and documentation (Turyasingura, 2011). Thus, knowledge management impacts the interactive learning process in the context of higher education institutions.

Similarly, the test statistics presented in table 3 examine that there exists a linear relationship between knowledge management and capacity building. In the same chapter, the regression analysis identified the linear relationship of capacity building with five dimensions of KM, namely knowledge utilization, knowledge acquisition, knowledge generation, knowledge transfer, and knowledge creation. The ultimate goal of a university is to build up the capacity of the faculty member. They can enhance the capacity of the faculty member through conducting training activities, conducting seminars and workshops, engaging in research activities, etc. The ICT Policy of Nepal (2015) emphasizes the ICT in education, research, and development. Hence, the influence of knowledge management in academic performance is in the same line as the previous finding of Chumjit (2012) that the universities can identify their core competencies and improve their abilities in teaching, research, and administrative systems. Turyasingura (2011) indicates that higher education institutions intending to promote learning at the institutional level should implement practices related to the generation of knowledge through research, training, and documentation, as well as by rendering easily accessible such knowledge for others to use. The study of Paudel, Bhattarai, and Chalise (2021) shows that knowledge management is helping to enhance academic activities and discourses in academia. Hence, the knowledge management processes mostly focus on how the knowledge is acquired in an organizational context, how the knowledge is disseminated and transferred to the seekers of knowledge, and how individuals, groups, and organizations manage and utilize such types of knowledge to enhance the organizational efficiency and productivity. Likewise, academic performance, particularly, academic activities are concerned with the faculty member to enhance their capability of conduction of research and dig out the knowledge from such research. It also focuses on how the students can be engaged in such activities and work to enhance their conceptual and practical knowledge. Moreover, it focuses on how the interactive learning process can enhance in an educational context, and how the capacity of both faculty members and students can enhance academic discourses in academia. The SECI model helps to internalize the concepts and ideas to enhance the capacity building process along with innovative process of faculty members and students in higher educational context.

The model of academic performance in academia digs out the concepts of the model drawn by regression analysis. It shows that it demands some activities of knowledge utilization, acquisition, and creation to enhance the capabilities of the research and publication in academia. In the same line, it demands some activities of knowledge utilization, dissemination, and presentation to make faculty members more innovative and productive. Likewise, interactive learning seeks some activities of knowledge utilization, generation, and dissemination to make the classroom activities and the learning effective and student-centric. In the same line, enhancing the capacity of faculty members demands the practices of knowledge management such as knowledge utilization, acquisition, generation, transfer, and presentation in the academic context. As universities are the center of knowledge production and creation, the knowledge creation process of individual, group, and institution impact to enhance the intellectual capital of individual (Paudel, 2019b). Hence, in the era

of the knowledge economy, society is always driven by the concept and knowledge of the intellectual, so-called teachers of the university.

6. Limitations and Future Research

The findings of the current study were drawn from four different universities, particularly Tribhuvan, Kathmandu, Purvanchal, and Pokhara University of Nepal. Respondents were taken from the four different departments/schools, i.e., Arts/Humanities, Education, Management, and Science. The research provides a reference to potential future researchers who would like to explore the association of knowledge management and academic performance in academia, particularly in HEIs. This research has mostly focused on the individual characteristics of the faculty members; other researchers can explore in wider context either in experimental or case-based study from the different universities of Nepal.

7. Conclusion

The faculty members' knowledge management practices and their academic performance are highly associated in higher educational context. The organizational leadership, culture, environment, distinct academic culture, notion of knowledge creation activities and readiness to accept and adopt technology in academic institutions rely on the practicing behaviour of faculty member to enhance the academic discoursed in universities. This study emphasizes the aspects of teaching, learning, research, and publication activities of a faculty member to enhance academic discourses with the support of knowledge management in academia. In the era of the knowledge economy, knowledge utilization, dissemination, and presentation maximize the innovation behavior of faculty members which further impacts the knowledge economy of the Nation. The existing knowledge and created knowledge of the faculty member play a vital role in enhancing the overall intellectual capital of individuals along with institutional. Thus, the research concludes that knowledge management is the key component to enhance academic excellences of the universities with positive impacts on knowledge economy.

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Appendix: Tool for Data Collection

SECTION ONE

1. Name of your working Institution: …….
2. What is your academic position (Tick in one)?
   A. Professors
   B. Associate Professors/Readers
   C. Assistant Professors/Lecturers

SECTION TWO: KNOWLEDGE MANAGEMENT PRACTICES

For the questions in section two**,** please complete the following questionnaire by assigning numerical value to each of the statements where the meaning of the value is as follows:
1 = Very untrue for me 2 = Untrue for me 3 = Somewhat untrue for me 4 = Neutral
5 = Somewhat true for me 6 = True for me 7 = Very true for me

Very untrue for me **Very true for me**
|_____|_____|_____|_____|_____|_____|
1 2 3 4 5 6 7

1	I acquire knowledge from self-learning.	
2	The source of my knowledge is my experience.	
3	Interaction helps me acquire knowledge easily.	
4	I acquire knowledge through discussions.	
5	Modern technology is not much helping me to acquire knowledge.	
6	I acquire knowledge through external professional networks, e.g. Professors' Associations, Experts Forum and PhD associations, etc.	
7	Participating in the training sessions helps me acquire knowledge effectively.	

8	Inputs from external experts such as foreign educational expert, academicians, etc. play a vital role to acquire knowledge within institutions.	
9	Learning environment plays less role compared to individual's tendency in influencing the acquiring process of knowledge.	
10	Organizational leadership quality helps me to acquire knowledge easily.	
11	If the important sources of knowledge e.g. Journals, Research Report, Books etc. are not available, my institution buys them.	
12	By mentoring new faculty members, I transfer ideas and knowledge.	
13	Individual work performance is assessed regularly to increase the knowledge level of individual.	
14	Informal discussion plays a vital role to share my knowledge.	
15	Workshop and conferences help me to disseminate the knowledge.	
16	Social media like Viber, Skype, Twitter and Facebook, etc. help me to transfer information.	
17	Teaching is the best way to distribute knowledge to the seekers of knowledge.	
18	I disseminate knowledge through publishing in professional journals.	
19	Joint projects help me share the idea and concept among peers.	
20	I frequently use IT and ICT devices to share and disseminate knowledge.	
21	I have not shared knowledge among peers by conducting training sessions by myself.	
22	I generate knowledge by involving in the research work.	
23	I have not been successful in developing simulators to transfer knowledge.	
24	I share knowledge by presenting the paper at the conferences.	
25	Interaction with peers helps me to disseminate the knowledge and ideas easily.	
26	I apply knowledge while conducting trainings.	
27	Knowledge helps me to face the issues, problems that I face in my daily life.	
28	I use knowledge to improve my efficiency.	
29	I conduct research activities to produce knowledge that helps me address the issues of everyday life.	
30	I apply acquired knowledge to conduct research activities that enhance my capability to perform my work better.	
31	Knowledge application helps me to increase the level of my thought.	
32	Knowledge application helps me conduct market research before developing the courses.	
33	I prefer research conducted through institutions rather than the research conducted by individuals because institutions provide wider platform for dissemination/sharing.	
34	Publishing in professional journals enables individuals to reach the professional communities.	
35	Selling knowledge through consultancy doesn't increase the value of individuals and institutions.	
36	I encourage colleagues to use different types of e-portals to get valuable information.	

SECTION THREE: ACADEMIC PERFORMANCE

For the questions in section three**,** please complete the following questionnaire by assigning numerical value to each of the statements where the meaning of the value is as follows:

1 = Very untrue for me 2 = Untrue for me 3 = Somewhat untrue for me 4 = Neutral
5 = Somewhat true for me 6 = True for me 7 = Very true for me

Very untrue for me **Very true for me**

|_____|_____|_____|_____|_____|_____|

1 2 3 4 5 6 7

1	I prepare lesson plans for each Semester/Year before the commencement of academic calendar.	
2	I prepare my lessons before entering the classroom.	
3	I encourage students to use different e-portals to familiarize them with global trends of teaching and learning.	
4	During the class time, I manage interaction sessions among students.	
5	I use different types of information technology to make my lessons effective.	
6	I convert theoretical knowledge into the practical by designing activities.	
7	All my publications are based on my research studies.	
8	The classroom environment doesn't play a vital role in sharing knowledge among learners.	
9	I maintain quality information inside the classroom.	
10	I frequently use case-based learning method rather than lecturing.	
11	Market research is essential before developing the courses for students.	
12	Modern technology helps to mentor students easily.	
13	Interaction in the classroom helps me disseminate knowledge and ideas easily.	
14	Classroom without technology cannot make active participation of learners.	
15	Research helps me to generate new knowledge.	
16	I convert theoretical knowledge into practical through research.	
17	I involve my students in my research activities.	
18	I am involved in industry-based research.	
19	Involving in research activities helps me increase my problem-solving capacity.	
20	My classroom activities are student centric.	
21	Number of publications doesn't matter much for the academic excellence of an academician.	
22	Through research I generate knowledge, bring that knowledge to classroom.	
23	I transfer knowledge to the community by publishing articles in the journals and newspapers.	

SECTION FOUR: WRITE YOUR OPINION

How can knowledge management be enhanced in Higher Educational Institutions?

Thank you for your time and information!

