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Knowledge Management Practices Amongst the Education Colleges in Bhutan and its Relation with Organizational Performance

Tshering Lhamo[a], Rajnish Ratna[b*]

a,Lecturer, Gedu College of Business Studies, Royal University of Bhutan, Bhutan

b Associate Professor, Gedu College of Business Studies, Royal University of Bhutan, Bhutan

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**Corresponding Author:*
rajnish.gcbs@rub.edu.bt;
rajnish.ratna@gmail.com

ABSTR ACT

Purpose *– This study investigated the knowledge management practices adopted by the Education colleges in Bhutan and assessed their relation with the organizational performance.*

Design/methodology/approach *– Hypothesis testing research design adopted for this study. Data was collected from 189 respondents from all the nine RUB colleges using a well-designed questionnaire.*

Findings *– Analysis of the data indicates that the RUB colleges are mostly practicing explicit methods of knowledge management. Further, there is more prevalence of knowledge storage, knowledge transfer, and a better attitude towards knowledge management amongst the RUB Colleges' staff. However, motivation and opportunities to share do not exist significantly. The study indicates that explicit-oriented knowledge management and knowledge transfer are significantly related to organizational performance.*

Research limitations/implications *– The study could gather only 189 responses and studies the relation between two variables only – Knowledge management and organizational performance.*

Practical implications *– There is a need to have proper policies and systems of knowledge management in the Bhutanese Education colleges to have advancement in knowledge management that will position the tertiary education institutes in the lead towards national socio-economic development. But this requires having all the stakeholders on board along with government support in terms of finance as well as trust and confidence.*

Originality/value *– This study is unique as it focuses on educational institutions of Bhutan which are meant for knowledge sharing. This will pave the way for better management of knowledge amongst the education colleges.*

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Introduction

Knowledge can be understood as any understanding gained through education, experience, and research. It can also be acquired via insight and intuition which guide a person's decisions and actions (Kumar & Gupta, 2012). It has been argued to have the ability to provide a strong basis of being sustainably competitive (Drucker, 1993). Similarly, Nicolaidis & Michalopoulos (2004) argue that 'in an economy where the certainty is uncertainty, the only source of lasting competitive advantage is knowledge. Hence, it is only natural that organisations acknowledge the integral role of knowledge for gaining sustainable competitive advantage. This is due to the fact that knowledge enables a firm to successfully position itself while confronting or dealing with unacquainted environmental settings (Choi, Poon & Davis, 2006).

Yet, firms will not gain a competitive edge over others just by possessing knowledge (Biloslavo & Trnavcevic, 2007). It requires a methodical process to manage that knowledge by firstly creating it then stocking it, disseminating, and then putting that knowledge to use (Kanwal, Nunes & Arif, 2019; Omerzel, Biloslavo & Trnavcevic, 2011). This leads to concepts called knowledge management (KM).

This concept of KM has become exponentially important for organizations of any kind that they make huge investments in this area. Studies show that in 2007 US firms have invested around $73 billion in software for KM. This amount of investment increased by 16 percent in the following year (Mills & Smith, 2011). Thereby rendering KM software, the fastest-growing segment in the software industry.

The criticality of the role of KM increases in the context of the tertiary education sector especially if the institutions are involved in the core business of 'education' itself. Sapam et.al. (2019) emphasized that education played a pivotal role in bringing Bhutan to the present stage. The diversification of the economy to secondary and tertiary sectors in Bhutan is the outcome of its modern education. This is because these institutions are primarily viewed as the core creator and disseminator of knowledge through research and providing educational aids (Kanwal, Nunes & Arif, 2019). At the tertiary education level, KM has been recognized as the foundation of sustainability and innovation (Poonkothai, 2016). Thus, it is right to conclude that KM is indispensable for the progression and development of the tertiary education sector (Areekkuzhiyil, 2016). This implies that the tertiary education sector must ensure the presence and practice of suitable KM infrastructures and policies (Toro & Joshi, 2013).

In view of the foregoing discussion, this study set out to examine the current practices of KM amongst the education colleges in Bhutan and assess its relation to organizational performance.

Review of Literature

Knowledge management and organizational performance

Knowledge has been loosely defined to be the aftermath of knowing. Knowledge can be more precisely defined as any "understanding that a person has gained through education, experience, discovery, intuition, and insight or a combination of instincts, ideas, rules and procedures that guide actions and decisions" (Kumar & Gupta, 2012, p. 8). Both scholars and practitioners alike contend that knowledge has a significant role to be played in the success of any organizationif not more than the physical resources (Mills & Smith, 2011; Nicolaidis & Michaopoulos, 2004). This is because the knowledge, inherently, is an intangible asset that aids in the accomplishment of long-term, strategic goals owing to its superior aggressive value unlike the tangibles mainly because its value intensifies with more usage, sharing, and transferring (Kumar & Gupta, 2012; Bolisani & Bratianu, 2018).

The general notion that people have of knowledge is that of written and documented knowledge such as databases, manuals, documents, books, copyrights, and the like (Biloslavo & Trnavcevic, 2007). But researchers like Nicolaidis and Michalopoulos (2004) and Rowley (2000) point out that it is only one type of knowledge that is explicit knowledge. The other knowledge called tacit knowledge, which forms the major portion of the total knowledge is, in reality, ingrained in the minds of people. This aspect of knowledge is drawn from intuitions, experiences, contexts, and memories and is challenging to be documented and transferred (Nicolaidis & Michalopoulos, 2004**)**. Secondary data is indicative that around70 - 80 percent of knowledge in an organization is in the form of tacit knowledge (Kumar & Gupta, 2012). Owing to the challenging nature of the location of tacit knowledge, its real value can be tapped on only via a systematic approach to manage knowledge just as it is done for other assets.

Since KM can utilize human assets to gain a competitive edge through higher performance, its need becomes inevitable (Brewer & Brewer, 2010; Rowley, 2000; Kumar & Gupta, 2012). KM can be viewed as a phenomenon of developing knowledge through its utilization to advance organizational goals (Rowley, 2000). "Knowledge management systems collect all relevant knowledge and experience in the firm and make it available whenever and wherever it is needed to support business processes and management decisions" (Kumar & Gupta, 2012, p. 9). In a nutshell, KM can be referred to as a means of making the knowledge accessible to people when required (Biloslavo & Trnavcevic, 2007). Ratna et. al., (2020) reported that there is a significant and positive impact of Knowledge Management on organizational effectiveness. It is suggested that KM is considered as a standout amongst the most critical parts of any organization. Organization can finish the undertakings with decreased cost and time while enhancing the nature of tasks by embracing knowledge management systems (KMS) in organization.

KM fundamentally involves gathering pertinent knowledge and making it available to those in need thereby facilitating decision-making and improving business practices (Kumar & Gupta, 2012; Biloslavo & Trnavcevic, 2007). One of the first movers in the area of KM was McKinsey & Co. Its early works were reinforced by creating databases of its work practices in 1987. In the face of the challenges and oppositions from its employees, McKinsey was able to come up with a new platform for learning through its development of 'Practice Olympics' in which teams from various regions competed in presenting ideas that were drawn from the knowledge gained from the employees' interactions with their clients. Similarly, Ernst & Young was another organization that adopted the idea of KM in 1993 (Rowley, 2000).

Researchers are of the view that it is easy to identify, store and share explicit knowledge which can take the form of guidelines, organizational documents, standard operating procedures, and norms (Biloslavo & Trnavcevic, 2007). Further,organizations can tap into the tacit knowledge possessed by their employees via active involvement of employees in programs that require interactions with their co-workers like working together in teams and observing one another(Biloslavo & Trnavcevic, 2007; Kumar & Gupta, 2012).

KM in general involves four different aspects viz creation, storage, transfer, and usage. Creation of knowledge involves accumulation of knowledge and storage of knowledge entails warehousing the knowledge in repositories/databases or embedding them into organizational practices as a part of the culture for the ease of retrieval and sharing (Biloslavo & Trnavcevic, 2007). Sharing of knowledge happens upon its dissemination (Sohail & Dau, 2009) and value is ultimately derived when employees use that knowledge to improve the work processes (Sohail & Dau, 2009) and final outputs thus resulting in organizational learning (Rowley, 2000).

Literature suggests two major approaches to KM that is explicit oriented and tacit oriented. The explicit-oriented approach focuses on the documentation of knowledge that enables reuse and reference through IT-aided infrastructures. On the other hand, knowledge gets shared and transferred through human interaction under tacit oriented approach to KM (Choi, Poon & Davis, 2006). Furthermore, for enhancing the effectiveness of KM systems, two factors become instrumental. They are knowledge process abilities, that encompass acquiring, converting, applying, and protecting; and knowledge infrastructure abilities that include technological, cultural, and structural aspects of an organization (Mills & Smith, 2011). Both of these abilities have been found to have a positive bearing on the performance of an organizational (Mills & Smith, 2011).

Knowledge management and higher education institutions

It is only logical and reasonable to sanction KM as the central activity of the tertiary education institutions as they are believed to be the creators and distributors of knowledge (Natek & Lesjak, 2013). Additionally, knowledge is both the input as well the output of tertiary education institutions; hence it is valid to argue that KM is more important to academic institutions than any other organizations (Biloslavo & Trnavcevic, 2007; Sohail & Dau, 2009). This belief is shared by the academic institutions, especially, higher education institutes, and is apparent from the investments made into KM domains by the tertiary education institutions around the world (Sohail & Dau, 2009).

Scholars and research evidence all point to the fact that the tertiary education sector is cornered from all sides with relentless demands from various stakeholders in the form of the need to internationalize, emphasize life-long learning, move from teacher-centered learning

to learner-centered learning, and the like. And the answer to such demands and pressures can be provided through a systematic KM system (Biloslavo & Trnavcevic, 2007). Moreover, KM can be a measure of quality management framework (Sedziuviene & Vveinhardt, 2009) and used as a strategy for ensuring financial sustainability in the tertiary education sector.

In the higher education settings, primary activities like teaching, assignments, examinations, and tests, researching, and consulting works are the basic sources of knowledge (Dhamdhere, 2015). Thus, for an educational institute, KM refers to "a set of practices that help an institution to improve teaching, research, and administrative roles and encourage the concerned stakeholders to use and share data and information in decision making" (Kanwal, et. al., 2019, p. 310). Though it was a function, historically, attributed to the library department (Kanwal et. al., 2019).

There are growing shreds of evidence showing greater efforts being put in by the higher education sector to bring about reforms to be more responsive and meet the soaring societal and market demands (Natek & Lesjak, 2013). With specific reference to South Asian tertiary education institutes, they are challenged with the issue of managing knowledge-based assets. In response, the institutions are endeavoring to devise policies and encouraging active stakeholders' participation to moderate the impediments and stimulate KM systems (Dhamdhere, 2015) which will allow cognizant and explicit ways of managing knowledge to accept and be acknowledged for the intellectual value that they provide to the society through their services (Rowley, 2000).

Knowledge Management, Organizational Performance, and HEIs

Sohail and Dau (2009) contend that KM is not holistic in itself, rather a means to achieve some other goals. Scholars like Fugate et. al. (2009) and Lazarova and Taylor (2009) contend that KM actions and activities positively affect an organization's performance as KM enables transforming intellectual abilities into values (Ling, 2013). This is attributed to the ability of knowledge that empowers organizations to respond quickly to the market demands and expectations (Vaccaro, et. al., 2010). But the values can be harnessed only if KM strategies are aligned with infrastructure, culture, structures, and processes within the organizationthat permit production, sharing, and usage of knowledge (Choi et. al., 2006).

For the success of KM, it takes more than the sheermaking of knowledge repositories accessible for individuals (Kiessling et. al., 2009); it needs deliberate efforts to recognize and acquire new knowledge (Drucker, 1993). This new knowledge should lead to organizational learning thereby resulting in new product developments and innovation (Kiessling et. al. (2009).

Interestingly, there is no consensus among the scholars on the superiority of a specific KM strategy that results in superior organizational performance. While some are of the view that strategies ought to be used individually, others contend that smartness lies in combining the strategies (Choi et. al., 2006). But it is generally accepted that a conducive environment like the willingness of individual employees to be a part of the whole KM system, organizational support, and presence of technological facilities, are required for KM to take place and have a nourishing progression (Omerzel et. al., 2011; Sohail & Dau, 2009).

In the context of tertiary education settings in South-Eastern Asia, institutes are confronted with the challenge of obtaining a competitive edge for attracting talents and investments (Al-Kurdi et. al., 2018). So, they are turning to KM systems to help them make better decisions concerning developing curriculum and competing and acquiring research grants (Howell & Annansingh, 2013). This is expected to bring about organizational effectiveness and better organizational performance in a sustainable way thus giving them a competitive edge over others (Kanwal et. al., 2019).

Moreover, systematic KM practices are critical to enhancing the effectiveness and quality of education delivered and researches were undertaken (Biloslavo & Trnavcevic, 2007). This will enable the institutions to better serve their stakeholders (Brewer & Brewer, 2010). In the same vein, experts assert that successful KM strategies and practices can intensify the participation capability of institutions in the socio-economic development process like the European universities which serve as employers, bases of technical expertise, and centers for developing human capital (Brewer & Brewer, 2010).

Research Methodology

Research Objective

To measure the effect of KM on the performance of an organization.

Proposed alternate hypothesis
H1: There is a significant effect of KM on the performance of education colleges in Bhutan.
H2: There is a significant effect of KM dimensions on organizational performance among education colleges in Bhutan.

Research Design
Hypothesis testing research design is adopted for this study.

Instrument
A questionnaire containing 23 items for knowledge management and 5 items for organizational performance based on a Likert 5-point scale ranging from 'strongly disagree' to 'strongly agree' was used.

Sampling technique
Convenience sampling technique was used for sample selection.

Sample Size
189

Data collection
well-designed questionnaire is used for data collection.

Data analysis
SPSS 26 is used for data analysis.

Results and Discussion

Sample characteristics
The sample is described in terms of demographic factors – gender, qualification, position, and work experience as presented in table 1.

Male formed a major proportion of the respondents. The highest number of respondents are with a master's degree followed by a bachelors. The highest number of respondents are associate lecturers followed by lecturers then assistant professors. Approximately equal participation from all four groups in terms of experience.

Reliability Results
Reliability analysis is done to determine the internal consistency of study variables. Reliability results are presented in Table 2. Cronbach (1951) stated that an alpha value ranging from 0.5 to 0.7 is acceptable and those with higher than 0.7 are considered as indicating good internal consistency.

Descriptive Results
Descriptive Analysis of dimensions of Knowledge management
The descriptive result is presented in table 3. As per the five-point Likert scale that this study used, the mean scores of all the KM constructs are in the neutral category. While explicit-oriented, tacit-oriented, knowledge storage, knowledge transfer, and staff attitude have a score slightly towards agreement side, motivation to share and opportunity to share was more towards disagreement. Holistically, none of the KM constructs had a score of 4 or more.

Descriptive results of variables
One sample t-test was conducted to study the level of study variables among the education colleges with a test value of '3' as presented in Tables 4 and 5. The level of knowledge management is reported higher than organizational performance.

The value of p is less than .05 for both variables at the test value of '3'. Based on the results of Tables 4 and 5, it is interpreted that the level of both variables is significantly above average (test value 3).

Correlation analysis was run to test the relation between independent and dependent variables for preliminary support to the proposed hypotheses. There is a significant and positive association between variables as reported in table 6.

Regression Analysis
Impact KM on organizational performance
Regression analysis was conducted to study the impact of KM on organizational performance. The causal relation between KM and organizational performance results is presented in tables 7, 8, and 9. From table 7, it can be interpreted that a significant regression equation was found [F (7,18) =10.177, p=.00), with an adjusted R^2 of 0.23. This indicates that 23 percent of the variance in organisational performance is explained by KM. From 8, it can be interpreted as knowledge management to be a significant predictor of organizational performance as p is less than .05. From table 9, it can be interpreted that there is a significant positive impact of KM on organizational performance. Thus, the proposed alternate hypothesis H1 is accepted.

Impact of dimensions of KM on organizational performance
From table 10, it can be interpreted that a significant regression equation was found [F (7,18) =10.177, p=.00), with an adjustedR^2 of 0.255 implying that 25.5 percent of the variation in organizational performance is caused by KM.

Demography	Type	Frequency	Percent	Cumulative Percent
Gender	Male	143	75.7	75.7
	Female	46	24.3	100.0
	Total	189	100.0	
Qualification	PhD	21	11.1	11.1
	Master	132	69.8	81.0
	Bachelor	36	19.0	100.0
	Total	189	100.0	
Position	Professor	4	2.1	2.1
	Associate Professor	8	4.2	6.3
	Asst. Professor	28	14.8	21.2
	Lecturer	59	31.2	52.4
	Associate Lecturer	63	33.3	85.7
	Asst. Lecturer	27	14.3	100.0
	Total	189	100.0	
Work experience	Less than 5 years	56	29.6	29.6
	5-10 Years	46	24.3	54.0
	10-15 Years	44	23.3	77.2
	More than 15 Years	43	22.8	100.0
	Total	189	100.0	

Table 1: Sample Characteristics
Source: Authors' Calculations

S.N.	Variables/ Dimensions	No. of items	Cronbach's alpha
1	KM Practices	23	0.846
a.	Explicit-Oriented	4	0.711
b.	Tacit-Oriented	4	0.701
c.	Knowledge Storage	3	0.737
d.	Knowledge Transfer	4	0.648
e.	Staff Attitude	2	0.726
f.	Motivation to Share	4	0.682
g.	Opportunity to Share	2	0.696
2	Organizational Performance	5	0.718

Table 2: Reliability result of survey constructs
Source: Authors' Calculations

Constructs	N	Minimum	Maximum	Mean	Std. Deviation
Explicit-Oriented	189	1.75	5	3.795	0.648
Tacit-Oriented	189	1.75	5	3.568	0.689
Knowledge Storage	189	2	5	3.793	0.576
Knowledge Transfer	189	1.75	5	3.637	0.680
Staff Attitude	189	1	5	3.513	0.915
Motivation to Share	189	1.5	5	3.381	0.618
Opportunity to Share	189	1	5	3.486	0.902

Table 3: Overall mean scores for KM constructs
Source: Authors' Calculations

Variable	N	Mean	Std. Deviation	Std. Error Mean
Organizational Performance	189	3.451	.691	.0502
Knowledge Management	189	3.596	.526	.0382

Table 4. Descriptive results
Source: Authors' Calculations

Variable	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Organizational Performance	8.990	188	.000	.451	.352	.551
Knowledge Management	15.579	188	.000	.596	.521	.672

Table 5. One-Sample Test
Source: Authors' Calculations

		Knowledge Management	Organisational Performance
Knowledge Management	Pearson Correlation	1	.484**
	Sig. (2-tailed)		.000
	N	189	189
Organisational Performance	Pearson Correlation	.484**	1
	Sig. (2-tailed)	.000	
	N	189	189

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6. Correlation results
Source: Authors' Calculations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.484[a]	.235	.230	.60618

Predictors: (Constant), Knowledge Management

Table 7. Model Summary
Source: Authors' Calculations

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.059	1	21.059	57.310	.000[b]
	Residual	68.713	187	.367		
	Total	89.772	188			
a. Dependent Variable: Organisational Performance						
b. Predictors: (Constant), KM						

Table 8. ANOVA Results
Source: Authors' Calculations

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.165	.305		3.817	.000
	KM	.636	.084	.484	7.570	.000
a. Dependent Variable: Organisational Performance						

Table 9. Coefficients Results
Source: Authors' Calculations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.531a	0.282	0.255	0.59658
a Predictors: (Constant), Opportunity to Share, Knowledge Storage, Explicit-Oriented, Motivation to Share, Knowledge Transfer, Staff Attitude, Tacit-Oriented				

Table 10. Model Summary
Source: Authors' Calculations

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.353	7	3.622	10.177	.000b
	Residual	64.418	181	0.356		
	Total	89.772	188			
a Dependent Variable: Organizational Performance						
b Predictors: (Constant), Opportunity to Share, Knowledge Storage, Explicit-Oriented, Motivation to Share, Knowledge Transfer, Staff Attitude, Tacit-Oriented						

Table 11. ANOVA Results
Source: Authors' Calculations

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.877	0.37		2.372	0.019
	Explicit-Oriented	0.192	0.085	0.18	2.263	0.025
	Tacit-Oriented	0.077	0.092	0.077	0.838	0.403
	Knowledge Storage	0.057	0.084	0.048	0.678	0.499
	Knowledge Transfer	0.249	0.083	0.245	2.992	0.003
	Staff Attitude	-0.094	0.066	-0.124	-1.414	0.159
	Motivation to Share	0.105	0.09	0.094	1.174	0.242
	Opportunity to Share	0.121	0.068	0.158	1.77	0.078
a Dependent Variable: Organizational Performance						

Table 12. Coefficients Results
Source: Authors' Calculations

The value of p is significant in Table 11, it means independent factors are a significant predictor of the dependent variable.

The coefficient table shows that only explicit-oriented and knowledge transfer significantly impact organizational performance. This implies that a unit change in explicit-oriented and knowledge transfer will increase the organizational performance by 0.18 and 0.245 units respectively. Rest all dimensions of knowledge management are not having a significant impact on organizational performance. Thereby, the proposed alternate hypothesis H2 is partially accepted.

Conclusions and Recommendations

Conclusion

Results indicate that only explicit oriented KM approach and knowledge transfer have significant relation with organizational performance. While tacit orientation, knowledge storage, staff attitude, motivation to share, and opportunities to share do not have any significant impact on organizational performance. This is consistent with the findings reported by Keskin (2005) who established that the explicit-oriented KM approach has a greatereffect on organizational performance than the tacit-oriented approach. Similarly, empirical shreds of evidence suggest a positive relationship between knowledge transfer and organizational performance (Mills & Smith, 2011).

Tacit knowledge, by nature, being ingrained in a person, it is understandable that the propensity to adopt a tacit-oriented approach is lower. Further, researchers assert that mere creating and storing of data will not lead to either higher organizational performance or give a competitive advantage (Kumar & Gupta, 2012). Without putting the knowledge to use, value cannot be generated. Though a positive attitude towards knowledge sharing is fundamental for KM to function effectively (Sohail & Dau, 2009), motivation to share and staff attitude towards sharing did not have any significant effect on organizational performance, in this study. This matches with prior research findings that the majority of the teachers/lecturers carry an individualistic view

of knowledge and view it as private possession; besides being a basis of power, knowledge functions as aground for differentiation, and therefore, people do not readily share it (Biloslavo & Trnavcevic, 2007).

Considering the benefits knowledge gives to an organization, in the form of better performance and sustained competitive advantage, firms and institutions are trying to invest in developing systematic ways of banking on the knowledge possessed by the employee within the organization via KM. And higher education sector is not an exception. But, education colleges in Bhutan are still at the infant phase of KM without any proper system and policy in place. The colleges are chiefly reliant on explicit orientation towards managing knowledge. Further, the enablers for KM are yet to gain momentum.

Recommendations

Based on findings and related literature, the following recommendations are proposed –

There is further scope to improve the level of knowledge management in education colleges by working on the various dimensions of KM.

There is a need to further improve organizational performance in the education colleges of Bhutan.

There is a need to align the dimensions of KM with organizational performance. There is a need to provide platforms for people to share and disseminate knowledge through the means of building a network of the stakeholders in the higher education sector along with seeking IT interventions to enhance KM activities (Pudashine & Rana, 2011).

There is a need to ingrain KM activities as a part of organizational culture. Another way to improve the level of knowledge management is by lawmakers, policymakers, and administrators by promoting the value of data-driven decision-making processes.

There is a need to formulate policies that allows integration of academic and administrative KM strategies effectively through sharing and managing of knowledge (Kanwal et. al., 2019).

IT aided KM approaches, especially in the context of tertiary education enable better and easier storage and transfer of knowledge between the primary stakeholders like students and staff (Bhusry & Ranjan, 2011). These strategies could be used to build on the already existing practices to boost the KM practices of education colleges in Bhutan.

Limitations and future scope

This study could have been subjected to the potential of biases in responses as respondents' feelings towards the organization may have been a subjective evaluation of their organization. Increasing the sample size will also be better for higher representativeness. Furthermore, including the perspectives of non-teaching staff may also result in a holistic and better understanding of the organizational practices. Further, the structured nature of the interview restrained from drawing more information from the respondents as there was no room for further probing. Thus, future studies in this line could be planned with more relevant variables in this context with more sample size covering more diverse workgroups from other colleges in Bhutan.

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