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The Role of Employee Engagement on Knowledge Management and Worker Productivity: A Case Study in Sri Lanka

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Abstract

Knowledge-Worker Productivity (KWP) has been influenced by Knowledge Management Process (KMP); however, past studies derived inconsistent findings of the relationship between the two variables. Additionally, the effect of KMP on KWP in the context of universities in Sri Lanka has not been adequately studied. Therefore, this present study aims to fill that gap by examining KMP elements' effect, namely knowledge creation, knowledge sharing, and usage on KWP, specifically the timeliness, proficiency, and independence of employees. This study also examines the role of employee engagements (i.e., intellectual, social, and affective) in mediating the effect of KMP on KWP. The questionnaire survey method was utilized to collect data from relevant university employees, i.e., lecturers, senior lecturers, and professors, whereby 264 valid responses were used in the analysis. The associations between KMP, Employee Engagement, and KWP were analyzed using the path analysis and bootstrapping methods. The outcomes demonstrated positive correlations between all three variables. Employee Engagement was shown to have a partial mediating effect on the KMP-KWP association. The general conclusion is that KWP is influenced by its capacity to increase employee engagement via KMP.

Keywords: Knowledge Management Process, Employee Engagement, Knowledge Workers, Employee Productivity, Higher Education

JEL Classification Code: O3, P3, M5, O15, M12

1. Introduction

Sustainable value creation can be achieved via knowledge assets, and Knowledge Management (KM) has been indicated as the main determinant of organizational performance (Peng et al., 2013). Institutions of higher learning are naturally knowledge-intensive; hence, they are fundamentally built upon information and knowledge. Knowledge-worker performance can be improved by

applying key KM determinants and best practices (Saqib et al., 2017). Such key determinants include the capacity to exploit and manage employee knowledge in enhancing their performance. According to the knowledge-based view theory, sustainable employee productivity and innovation can be achieved by leveraging human capital and the knowledge assets of employees (Sergeeva & Andreeva, 2016). Let it be government or the private sector; any organization looks for innovative ways to make technical changes (Lee & Xuan, 2019; Kumari, 2014). Performance-related issues have been indicated to be crucial in affecting organizational behavior, while the experience of knowledge workers with regards to KM processes can lead to performance and productivity improvements (Kianto et al., 2016).

In their quest to become centers of excellence, today's universities have to face various challenges that could be dealt with via the effective application of KM and a strategic tool acknowledged for assisting the efficient management of knowledge in universities (Masadeh et al., 2017; Lee, 2020). Universities play a crucial part in creating and disseminating knowledge as well as driving social transformations and national growth. This role is

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even more crucial for research and innovation involving work-related knowledge.

Several prominent studies have demonstrated the effectiveness of KM processes in organizations (Nonaka & Takeuchi, 1995) and the systematic and mindful management of knowledge towards leveraging intellectual capital and improving Knowledge-Worker Productivity (KWP). Hence, similar to other institutions, universities need to strategically develop their KM practices to systematically manage their knowledge. The KM processes need to be highly functional in order to be successful and to improve the effectiveness of the universities (Adhikari, 2010). Knowledge fundamentally refers to unique capabilities, skills, habits, and insights developed from experiences, training or learning routes, or capabilities created as a result of effort and talent (Shabrina & Silvianita, 2015). There are basically two types of knowledge: the explicit variety is derived from written texts or spoken words, while the tacit form is derived from mentally-stored collective experiences. Therefore, knowledge sharing can only be improved if the participants, i.e., employees, can be retained, fulfilled, engaged, and captivated (Shabrina & Silvianita, 2015).

Firms shifting from an industrial economy to an information/knowledge-oriented economy will find it challenging to improve knowledge-worker productivity (Drucker, 1999). This issue is unresolvable with the application of KM strategies, which are specifically designed for managing information. KM and KW productivity are more of organizational assets for attaining organizational objectives. Management is primarily responsible for driving the effective and efficient utilization of numerous resources to establish a competitive advantage and improve overall productivity. Past inquiries had investigated the influence of KM processes on KW productivity (Iranzadeh & Pakdelbonab, 2014). This research aims to address the remaining gaps by examining how KM processes affect KW productivity. Hence, it is essential to analyze suitable KM strategies and practices that universities can use to enhance individual productivity via value-added KM process capacities and to drive employee engagement at all levels. Below are the research objectives developed for this research:

- [1] To examine the influence of KMP on KWP;
- [2] To investigate the correlations between KMP, Employee Engagement, and KWP.
- [3] To analyze the mediating role of Employee Engagement between KMP and KWP.

This manuscript is divided into different sections. Section 2 entails reviewing literatures on KM and KWP; Section 3 presents the research methodology inclusive of the sampling, data collection, and data analysis; Section 4 discourses the analysis and results, while Section 5 summarizes the study results.

2. Literature Review

2.1. Knowledge-Worker Productivity (KWP)

Individual, team, and organizational efficiency can be enhanced via the application of KM productivity; better KM outcomes are attained when the capacity to capture explicit/tacit knowledge is improved (Lee & Choi, 2003). Productivity is the accurate and optimal usage of available manpower and key assets, while efficiency is related to performance measurement; hence, effectiveness and efficiency determine the level of productivity.

Drucker (1959) coined the term ‘knowledge worker’, which referred to workers who use intangible assets. At present, the term refers to high-level workers who utilize analytical and theoretical knowledge. In general, ‘knowledge worker’ has not been precisely defined. Knowledge work refers to the creation and usage of knowledge by expert and autonomous workers to derive tangible and intangible outcomes. KW has also been delineated as workers that are highly skilled at collecting, combining, and utilizing knowledge (Turriago-Hoyos et al., 2016). Pieces of literature on KWP have also suggested that knowledge workers are the core of the twenty-first-century workforce. Knowledge work is identified as the intellectual and cognitive processes in creating and applying knowledge (Iazzolino et al., 2017; Palvalin, 2017).

Twentieth-century firms worked mechanically and manually. On the contrary, twenty-first-century firms use knowledge as input for deriving intellectual knowledge-oriented outputs (Drucker, 1999). Hence, university academicians as knowledge workers utilize knowledge as input to derive knowledge-oriented outputs from carrying out knowledge work, which is crucial for the operations and performance of universities. As outlined by Drucker (1999), there are six KWP elements: i) the knowledge worker’s task/job identification, ii) the knowledge worker’s job-related autonomy, iii) the knowledge worker’s continuous job-related innovativeness, iv) continuous learning and teaching, v) significance of the quality and quantity of output, and vi) the knowledge worker’s identification as an asset instead of a liability.

Although KWP has no specific benchmark (Iazzolino et al., 2017), past studies have consistently identified KWP dimensions as timeliness, delivery quality, the satisfaction of stakeholders, autonomy, efficiency, creativity, and innovation (Moussa et al., 2017; Palvalin, 2015).

2.2. Knowledge Management Process

According to Kianto et al. (2016), KM delineates a firm’s general knowledge and its utilization to create a competitive edge. KM enables the formulation, implementation, and

evaluation of strategies that ensure proper knowledge flow for the right worker at the right time in the right place (Shujahat et al., 2019). KM has two components, namely: critical success factors (i.e., KM practices and infrastructures) and the relevant processes. The focus of this current study is on KM processes.

KM practices entail acquiring, sharing, creating, codifying, and retaining knowledge (Abdi et al., 2018). Knowledge is acquired via the gathering of external information (Kianto et al., 2016). It is shared based on the organization's context, the characteristics of the team and interpersonal features, characteristics of the culture, characteristics of the individuals, and motivating factors (Lee, 2001). Knowledge creation is driven by the desire to produce new and usable ideas and solutions (Kianto et al., 2016). Knowledge codification occurs when knowledge is converted into an explicit form and subsequently documented. Lastly, knowledge is retained via KM enhancement approaches. Explicit knowledge is created and converted into tacit knowledge (and vice versa) via the four routes explained in the model of organizational knowledge creation, namely SECI (socialization, externalization, combination, and internalization) (Nonaka & Takeuchi, 1995).

2.3. Employee Engagement

The role of employee engagement gained prominence after being identified as the main determinant of performance at the individual and organizational levels. Along with KM processes, it is acknowledged as a strategic tool for attaining competitive advantage through intellectual capital usage. Knowledge management has been hailed as the factor of employee engagement (Juan et al., 2016). Employee engagement is the link that connects the employee both emotionally and intellectually to his/her job, superior, coworkers, or company, which motivates him/her to be cognitively, emotionally, and behaviorally engaged at work and ultimately results in better organizational outcomes. It also refers to the magnitude to which the employee is enthusiastic about helping achieve organizational success and to work towards attaining organizational objectives.

Intellectual assets contribute tremendously to organizational competitiveness. As such, employee engagement needs to be enhanced in order to retain those intellectual assets.

2.4. Knowledge Management Process and Knowledge-Worker Productivity

According to Iranzadeh and Pakdelbonab (2014), knowledge worker productivity is affected by all dimensions of KM processes. Knowledge sharing involvement activities have a positive influence on work productivity, capabilities,

performance, and customer satisfaction in the investment sector. In theory, KM affects productivity, as suggested by Drucker. The SECI knowledge creation sequence (Nonaka & Takeuchi, 1995) provides employees with practical knowledge to boost their work performance and ensure continuous process enhancement (Iranzadeh & Pakdelbonab, 2014). Abualoush et al. (2018), Masadeh et al. (2017), and Mustapa and Mahmood (2016) had empirically proven the positive relationship between KM processes and KW productivity. They indicated that, in general, KM processes positively affect KW productivity; in short, KM boosts employee productivity. Therefore, this current study deduces that KM processes influence KW productivity. It is thus hypothesized that:

H1: KM processes positively and significantly affects KW productivity.

2.5. Knowledge Management Process and Employee Engagement

Employee performance is affected by the way the organization disseminates knowledge and information. KM can be used as leverage for employee training, which in turn allows for greater employee flexibility and job satisfaction. Greater knowledge sharing and joint learning can boost job satisfaction, which ultimately leads to higher employee engagement, lower non-attendance, lesser turnover intentions, higher job performance, and improved productivity. The workers will also demonstrate greater work engagement physically, cognitively, and emotionally. Therefore, KM contributes to the creation of a constructive work environment, which ultimately affects employee engagement.

Juan et al. (2016) asserted the capability of KM in driving employee engagement. This current study enriches the available body of literature by examining the correlation between KM processes and employee engagement, particularly in Sri Lanka.

KM processes have been identified to drive employee engagement. Knowledge workers that are highly empowered pursue knowledge actively and realize the positive effect of information access on KM processes considering that the derived knowledge and information are implemented on subsequent works. Highly motivated workers also pursue, create and share knowledge more rigorously due to their greater need for knowledge. As such, KM processes allow employee autonomy that makes the workers feel valued and useful.

Despite the scarce indication of the influence of KM processes on worker engagement, mediating effect of employee commitment in the association of KM processes and organizational effectiveness has been documented. The component of KM infrastructure was found to drive employee commitment via the cultivation of employee job

satisfaction (Kianto et al., 2016). Likewise, work content is supported by KM practices in fostering organizational commitment (Kianto et al., 2016). Hence, the hypothesis below is proposed:

H2: KM processes positively and significantly affect employee engagement.

2.6. Employee Engagement and Knowledge-Worker Productivity

Employee knowledge regarding the management of organizational assets can positively affect employee engagement. Relevant pieces of literature have indicated a significant relationship between employee engagement and productivity. Employee engagement can be boosted by focusing on four key aspects, namely: organizational culture, ongoing reinforcement of employee-related policies, key metrics, and organizational performance (Patro, 2013). The 2008/2009 global benchmarking research conducted by the University of Wisconsin in cooperation with Right Management showed that employee engagement substantially impacts productivity (Patro, 2013).

According to the knowledge-worker productivity theory by Drucker (1999), employee commitment increases in tandem with the extent to which the employees are treated as strategic assets by their organization. Higher employee commitment ultimately results in greater KW productivity (Drucker, 1999). Additionally, Khan et al. (2014) empirically demonstrated the significant positive influence of employee commitment on productivity. Employees are more likely to perform better when they have greater organizational engagement (Porter et al., 1974; Mustapa & Mahmood, 2016). In short, employee engagement drives task performance and productivity. Therefore, the hypothesis below is proposed:

H3: Employee engagement positively and significantly affects KW productivity.

2.7. Employee Engagement Mediated Knowledge Management Process and Knowledge-Worker Productivity

Past studies demonstrated the positive correlations between KMP and KWP, KM processes and employee engagement, and employee engagement and KW productivity. As such, a mediation effect is assumed in the relationship between KMP and KWP. The hypothesis below is hence proposed:

H4: Employee engagement has a significant mediating effect between KM processes and KW productivity.

2.8. Research Model

Three variables were involved in the development of the conceptual framework, namely: KM processes (i.e., the independent variable), KW productivity (i.e., the dependent variable), and employee engagement (i.e., the mediating variable).

3. Methodology

3.1. Sample and Data Collection

The study samples include knowledge workers, i.e., lecturers, senior lecturers, and professors working in state universities in Sri Lanka. The rationale for this selection is because academicians have higher autonomy to focus on productivity and quality. Data was collected via personally distributed survey questionnaire forms. As many as 264 of the questionnaire forms were returned, whereby 18% (47) were from lecturers, 74% (196) from senior lecturers, and 8% (21) from professors. In terms of gender, 32% of the respondents are females and 68% males. Education-wise, 58% of the respondents are Ph.D. holders while 42% are Master's degree holders.

3.2. Instruments

The measurement instruments were adapted for all the three study constructs, namely: Knowledge-Worker Productivity (KWP), Knowledge Management Processes (KMP), and Employee Engagement (EE). The measurement for KWP involves the dimensions of timeliness (with 2 measurement items), efficiency (with 2 measurement items), and autonomy (with 3 measurement items). The measurement scales used by Morgeson and Humphrey (2006) and Tangen (2005) were adapted for use in this current study. The composition of the constructs adheres to the recommendations of (Shujahat et al., 2019; Moussa et al., 2017; Palvalin, 2017).

“CEN's European Guide to Good Practice in Knowledge Management: Guidelines for Measuring the Knowledge Management” was adapted in the current study to measure KMP. There are three dimensions in this scale, namely: creation, sharing, and usage, all of which have 3 measurement items each, i.e., consistent with the suggestions of Lee and Choi (2003) and other empirical studies (Shujahat et al., 2017). This scale is also widely used by various consultancy firms as a practical analytical instrument to measure and solve organizational issues related to knowledge processes.

Employee engagement is measured using the ISA Engagement Scale developed by Soane et al. (2012). EE has three dimensions, namely: intellectual engagement, social

Table 1: CFA Results and Internal Reliability Test

Constructs	Measurement Items	Loading	Cronbach α	CR	AVE
Knowledge Management Process	PKC1	0.557	0.950	0.941	0.644
	PKC2	0.754			
	PKC3	0.797			
	PKS1	0.744			
	PKS2	0.732			
	PKS3	0.922			
	PKU1	0.841			
	PKU2	0.975			
Employee Engagement	EEI1	0.835	0.965	0.966	0.765
	EEI2	0.864			
	EEI3	0.969			
	EES1	0.880			
	EES2	0.896			
	EES3	0.934			
	EEA1	0.835			
	EEA2	0.879			
Knowledge Worker Productivity	WPM1	0.876	0.914	0.927	0.649
	WPM2	0.733			
	WPJ1	0.898			
	WPJ2	0.791			
	WPJ3	0.536			
	WPW1	0.931			
	WPW2	0.798			

engagement, and affective engagement, all of which have 3 measurement items adapted from the ISA scale.

4. Results and Discussion

4.1. Measurement Model

The measurement model was evaluated on its outer loadings, composite reliability, convergent validity, and discriminant validity. All the suggested cut-off values were fulfilled in this study.

4.2. Reliability and Validity of Instrument

Cronbach’s alpha was used to verify data reliability; values approximating 1 indicate high internal consistency reliability. The alpha coefficient values recorded in this

study were all above 0.9, suggesting high reliability (Table 1). Content validity was verified by conducting a pilot study utilizing the KMP, EE, and KWP dimensions.

Following the suggestion of Hair et al. (2011), the assessment of convergent validity involved the measurements of the factor loadings, composite reliability (CR), and average variance extracted (AVE). Factor loadings have a cut-off value of > 0.5 , whilst $AVE > 0.5$ and $CR > 0.7$. As shown in Table 1, all the values had exceeded the recommended threshold, thus suggesting adequate convergence validity. As such, all the construct items were retained for further analysis.

The assessment of the discriminant validity entails a comparison between the AVE square root and the correlations. Table 1 shows that the diagonal values are greater than those in the parallel rows and columns, indicating distinct measures and adequate discriminant validity.

4.3. Structural Model

The variables' relationships were assessed firstly by assessing the structural model and secondly by performing an SEM analysis on the latent variables. The measurement model's overall evaluation begins with an analysis of the mediating effects using the bootstrapping method. The structural equation modeling was performed following the covariance analysis. The model fit index is shown in Table 3, while the structural model results are shown in Table 4.

4.3.1. Evaluation of the Model Fit Indices

This study's goodness-of-fit indexes and their cut-off values for model assessment are presented in Table 3.

Table 2: Discriminant Validity

Constructs	KMP	EmpE	KWP
KMP	0.801		
EmpE	0.781***	0.872	
KWP	0.704***	0.692***	0.808

Note: The diagonal values denote the AVE square roots, while the off-diagonal values denote the correlations.

The findings suggest a generally good fit as the prescribed conditions were fulfilled. With the adequate model fit as demonstrated by the confirmatory factor analysis, it is concluded that the proposed model has a good fit with the observed data. The proposed CFA model is thus fit for analysis due to its good fit with the sample data.

4.3.2. Path Analysis

The structural model's predictive power was determined via the R squares (R^2) calculation, i.e., the total explainable variance by the exogenous variables. Both variables explained a total of 76.9% of the variance in KW productivity. The bootstrapping method was used to calculate the path estimates and t -statistics for the proposed correlations with a re-sampling of 1000. Table 4 shows that all the direct correlational hypotheses are acceptable.

4.3.3. Mediation Analysis

The mediating effect of Employee Engagement in the KMP-KWP relationship was tested using the bootstrapping method in AMOS. As shown in Table 5, Employee Engagement significantly mediates a (partial) effect in the relationship between KMP and KWP; hence, hypothesis 4 is accepted.

Table 3: Goodness of Fit Index and their Rule of Thumb

Index	Shorthand	Threshold	Author	Value Obtained	Conclusion
Chi-square / Degree of Freedom	χ^2 / df	≤ 3	Kline (1998)	1.515	Good Fit
Root Mean Square Residual	RMR	< 0.02		0.013	Good Fit
Goodness-of-fit Index	GFI	> 0.90	Joreskog & Sorbom (1981)	0.928	Good Fit
Tucker Lewis Index	TLI	> 0.90	Hu and Bentler (1999)	0.936	Good Fit
Comparative Fit Index	CFI	> 0.90	Hu and Bentler (1999)	0.938	Good Fit
Root Mean Square Error of Approximation	RMSEA	≤ 0.05 ; good	Wan, (2002)	0.037	Good Fit

Table 4: Hypotheses Testing – Direct Relationship

Hypotheses	Beta	SE	t -value	P -Value	Results
KMP has a positive and significant effect on KWP	0.73	0.058	2.685	0.020	Accepted
KMP has a positive and significant effect on Employee Engagement	0.69	0.061	1.296	***	Accepted
Employee Engagement has a positive and significant effect on KWP	0.86	0.083	1.154	0.031	Accepted

Table 5: Mediating effect of Employee Engagement in the KMP-KWP Relationship

Hypothesis	Direct Effect	Indirect Effect	Results
Employee engagement significantly mediates the relationship between KMP and KWP	2.726***	1.974*	Partial Mediation

Note: *** = $P < 0.001$; * = $P < 0.05$.

4.4. Discussion

In this research, knowledge management practices are proposed to affect employee engagement and knowledge worker productivity in Sri Lankan universities. Hence, employee engagement is postulated to have a mediating effect in the association between knowledge management practices and knowledge-worker productivity. The findings showed that employee engagement partially mediates the said association, therefore suggesting the driving effect of knowledge management practices on employee engagement and knowledge-worker productivity. Detailed discussions of the findings are presented below.

The findings related to *H1* showed that knowledge management practices positively and significantly affect knowledge-worker productivity, in line with the findings of (Mustapa & Mahmood, 2016). Logically, the management of the knowledge workers' tasks and contextual performance necessitates the utilization of knowledge assets and KWP experience as input. KM practices allow the utilization of knowledge use as input to enable the knowledge workers' task and relative performance to be improvised.

The results related to *H2* also showed that KM practices significantly drive employee engagement, consistent with the suggestion of Juan et al. (2016) that KM can influence the extent of employee engagement. In a logical sense, the implementation of KM entails promoting general job satisfaction by influencing the dimensions of the work environment and work content (Kianto, 2016). Increased job satisfaction ultimately results in increased employee engagement.

The findings related to *H3* showed that employee engagement has a positive and significant influence on knowledge-worker productivity, in line with the findings made in other studies, literature reviews, and meta-analyses (e.g., Juan et al., 2016). The findings also conform to Drucker's (1999) knowledge worker productivity theory, which depicts that the treatment of knowledge workers as valuable organizational assets can generally boost employee commitment, which ultimately improves employee performance.

Lastly, the findings related to *H4* showed that organizational commitment partially mediates the relationship between KMP and KWP. This could be because KM practices produce knowledge as output, which is usable by knowledge workers to boost KWP. Therefore, employee

engagement may be deemed the offshoot of KM practice and KWP as the direct outcome. Additionally, the KMP of Sri Lankan universities was indicated to boost KWP hence meeting the explicit objective as prescribed by the evidence-based knowledge, thus further confirming the hypothesis of partial mediation.

5. Conclusion

KMP is characterized by the creation, sharing, and usage of knowledge to improve employee engagement and knowledge worker productivity. The findings supported all four proposed hypotheses hence confirming the links between KMP, employee engagement, and KWP. The findings indicate that effective KMP implementation can drive the improvement of employee engagement and KWP. The latest results are instead encouraging, particularly concerning the implication of employee engagement in improving KWP in the context of Sri Lankan universities. Employee engagement was also found to partially mediate the KMP-KWP relationship. This study concluded that an organization's KWP is determined by its capability to enhance employee engagement via KMP. Sri Lankan universities can effectively improve their KWP by enhancing their employees' intellectual, social, and affective engagements. The organizational structure of Sri Lankan universities can facilitate the employees in acquiring information from various sources. Meanwhile, implementing the integrated employee engagement concept enables the universities to overcome the various challenges they may encounter.

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