Ilkogretim Online - Elementary Education Online, Year; Vol 20 (Issue 5): pp. 1936-1953
http://ilkogretim-online.org
doi: 10.17051/ilkonline.2021.05.213

Role of Incentives in Knowledge Sharing Practices amid Elementary School Teachers: Mediating Role of Organizational Commitment

WasimulRehman, Assistant Professor, Department of Business Administration, University of the Punjab, Gujranwala Campus, Pakistan, wasim.rehman@pugc.edu.pk
LabibaSheikh, Assistant Professor, Institute of Business Administration University of the Punjab, Lahore, Pakistan
FaryalJalil, Assistant Professor, Institute of Quality and Technology Management, University of the Punjab, Lahore, Pakistanfaryal.iqtm@pu.edu.pk
KiranRazzaq, Visiting Faculty Member, University of Gujrat, Lahore Campus, Pakistan

ABSTRACT: In view of theoretical propositions of knowledge-based view (KBV) and social exchange theory (SET), this study tends toexamine the role of incentives to influence the knowledge sharing (KS) practices amidelementary school teachers through the mechanism of organizational commitment (OC).For that purpose,an amended instrument (questionnaire) was adopted to collect the data from the knowledge workers(elementary school teachers) working in governmentschools. The results support the argument that incentives positively influence the both tacit and explicit KS practices amid elementary school teachersin the presence of potential mediator OC. Nevertheless,the findings of study also provide the fruitful implications for education foundations working in country such as national education foundation (NEF), Punjab education foundation (PEF) and elementary and secondary education foundation (KPESEF) to comprehend that provision of effective incentives and rewards structures influence OC toward their organization which in turnsencourage the KS practices amid elementary school teachers.

Keywords: Incentives, Knowledge Sharing practices, Organizational commitment, Elementary education system.

I. INTRODUCTION

In current era, commonly referred as 'knowledge-based economy' where knowledge-oriented organizations such as educational institutions are integral part of economic development (OECD, 1996;Drucker, 1994;Sánchez & Elena, 2006;Dumay et al., 2015). Recent investigations explored that educational institutions correspond to higher economic growth where government interventions can yield better economic growth through imparting knowledge and skill amid their 'knowledge workers' i.e. teachers (Lu, 2012; Drucker, 2012;Secundo et al., 2016).Knowledge is one of the valuable resourceof organization used to leverage thecompetitive positioning (Stankosky, 2005,Drucker, 1999). In order to gain competitive edge, similar to other productive organizations, various school foundations need to align thecapabilities of their 'knowledge workers' (school teachers) in view of their utilization andKS capabilities(Albors-Garrigos, et al., 2018). Therefore, the governments from emerging economies arenurturing their intellectual capabilities of their knowledge workers (teachers) through remodeling the paradigm of primary education structure under the domain of knowledge-based view (KBV) (Aubert&Reiffers, 2003).

Knowing that knowledge is a power toolto drive the knowledge economies,therefore Fortune-500 firms invest around $31.5bn annually on knowledge management (KM)initiatives (Ferris et al., 2001; Mowe et al., 2008). Such KM initiatives influence KS behavior amid knowledge workers and reduce the perceived cost of KS in terms of no fear for delay in promotion in case of knowledge is shared amid employees(Bock et al., 2005).In this regard, incentives may be useful in encouraging and motivating knowledge workers to actively contribute in the process of KS. Several research on KM initiatives reported that better incentives influence the KS tendency amid knowledge workers within the organization(Alavi & Leidner, 1999; Kaya & Sagsan, 2015; Ribière & Worasinchai, 2015; Yu, Kim, & Kim, 2004; Zhang & Jasimuddin, 2012). Further research also highlights that rewards both material and non-material positively influence the performance of knowledge workers and motivate them to perform better for the sustainable performance of organization (Davenport et

al., 1998; Milne, 2007; Šajeva, 2014; Ahmed, 2019). In this sense, one of the important issues that has gained attention of many scholars and practitioners thatthey are curious about how incentives or rewards influence the performance capability of the individuals in aligned with the attainment of organizational objectives. In order to achieve that set objectives, the most crucial factor is the involvement of employee i.e. organizational commitment (OC). OC increases the degree of cohesion among individuals where rewards may help in the attainment of set goals and competitive advantage through innovation and creativity and encouraging them to achieve the set objectives efficiently.When organization has effective rewards systemthen individuals get more motivated to achieve the organizational goals. Such positive behavior of the employees towards the attainment organization goals are known commonly referred to be as OC.

Prior research asserted that knowledge transformed takes place in two waysi.e. tacit and explicit way (Nonaka& Takeuchi, 1995; Tiwana, 2002; Wang & Wang, 2012). Tacit knowledge is an unstructured, subjective and informal knowledge presented in beliefs, insights and emotions. It is the basic know-how, beliefs and personal experiences resides in the minds of peoples (Holste& Fields, 2010). Unlike tacit knowledge, explicit knowledge is a written, structured and codified knowledge transmitted among knowledge workers through formal waysto express tacit knowledge (Manaf et al., 2018; Nonaka & Takeuchi, 1995; Tiwana, 2002). Organizational knowledge created in tacit and explicit KS practices are helpful in carrying out assigned tasks and decision making (Acharya et al., 2018; Maravilhas & Martins, 2019). In organizational theories, the effect of KM initiatives on organizational performance has been widely studies in last few decades (Feng et al., 2005; Noruzy et al., 2013). Numerous research acknowledged the KS as a key dimension of KM initiatives significantly influence theorganizational performance (Manfredi Latilla et al., 2018). To best of authors knowledge, the role of incentives to influence KS practices is studied up to a limited extend particularly in context of elementary school teachers. Therefore, the study calls for by advancing the knowledge in the discipline through incorporating a mediating framework of OC between the relationship of incentives and KS practices in knowledge intensive organizations (Marques et al., 2019).

The role of KS in paramount amid elementary school teachers, as the elementary schools are the focus of knowledge based activities: school teachers are repositories of knowledge and transmit it to students for their academic performance (Stewart, 1997; Ortega, 2013; Silvestri&Veltri, 2011). They are loci of knowledge as extant of knowledge based activities related to knowledge acquisition and sharing take place inside the education institutes (Leitner, 2004; Fazlagic, 2005).Therefore, school teacher are known to be "knowledge workers" in primary schools were chosen as respondents. Therefore, the purpose of this study is to examine the role of KS initiatives such as incentives and OCamid elementary school teachers which is scare in prior literature in context of educations institutions.The educational institutes are knowledge repositories, where effective and efficient flow of knowledge help to enhance the performance of education institutes.Therefore, it is significant to study KS activities amid knowledge workers (teachers) as they not only help in nurturing the personality of children but also play a vital role enhance the socio-economic development of a country. Table 1 shows the statistics of Educational institutions, enrollment of students and strength of teachers for the period of year 2017-2018.

Table 1: Education Foundations Institutions, Enrollment (by Gender) and Teachers 2017-2018

Organization/Department	*Institutions*	*Enrolment*			*Teachers*
		Male	*Female*	*Total*	
Total	***12,516***	***1,833,716***	***1,533,264***	***3,366,980***	***117,015***
National Education Foundation	57	3,101	2,483	5,584	214
Punjab Education Foundation	7,590	1,507,096	1,244,884	2,751,980	98,976
Sindh Education Foundation	2,023	282,358	194,854	477,212	14,231
KP Elementary Education Foundation	2,213	41,161	80,223	121,384	2,798
Balochistan Education Foundation	633	–	10,820	10,820	796

Source: (Pakistan Education Statistics Report: 2018-2019)

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In knowledge-based economy, KS is considered as vital to effectiveness and performance of individuals whether public or private organization (Quigley et al., 2007; Silvi & Cuganesan, 2006). Consequently, it has been recognized as crucial element for the attainment of competitive advantage (Felin & Hesterly, 2007). Moreover, it is challenge for the organization due to two motives. Firstly, as tacit knowledge is found in the heads of the individuals, so it is difficult to get transferred. The second reason is the readiness of the sharer to share their experiences, knowledge or skills at individual level. It is difficult to manage knowledge resources when employees hesitate in sharing their experiences with others. In order to foster KS practices among individual within the organization, it is of utmost importance to keenly understand the factors that are favorable in increasing these practices on regularly basis.

The competitiveness of an organization largely relies on the KS among its employees (Riege, 2005, 2007), particularly in education sector. The success of KS largely relies on the motivation and willingness of the individuals to get engaged in sharing of experiences, expertise and knowledge (Lin, 2007; Pacharapha & Ractham, 2012;Wiewiora et al., 2013).KS is important on all level such as at the individual level (Carmeli et al., 2013; Foss et al., 2009; Gilson et al., 2013; Reychav & Weisberg, 2009), team level (Bligh et al., 2006; Hu & Randel, 2014; Liu et al., 2011; Liu & Phillips, 2011; Srivastava et al., 2006), and organizational level (Hussinki et al., 2017; Kianto & Andreeva, 2014). It is necessary for the employees and organization to keep the flow of KS so that best performance may be yielded both at employee and organizational level. There is a possibility that individuals hesitate in sharing their knowledge at workplace if they perceive that KS may harm their interests and, in this way, organizational interests get threatens. So it is crucial for the scholars, academicians and researchers to examine the factors that affect KS as commitment of the employees (Bock et al., 2005). As only motivated committed and more satisfied employees keep the flow of KS and perceive less costs of KS. Individuals share their knowledge when they are facilitated with such a rewards system that fosters KS or when they are directed by such leadership that leads them to the way of more committed with the organization, more motivated, more satisfied and with no fear of loss while sharing knowledge, experiences and expertise with other co-workers.

Incentives may also be helpful in motivating and engaging employees in KS practices. Till now social capital approach has been considered for the investigation of the predecessors of KS(Han et al., 2010; Kharabsheh, 2007; Matzler & Mueller, 2011; Mueller, 2014; Van Den Hooff & Van Weenen, 2004) in knowledge management literature, however, this research work attempts to check the influence of incentives on KSP through the lens of social exchange theory by considering OCas potential intermediary. This research work intends to fill the gaps found in knowledge management literature.

INCENTIVES AND KS PRACTICES

Incentives play crucial role in motivating individuals to share knowledge. Social exchange theory suggests that incentives and KS practices are positively associated (Al Dari et al., 2018; Kankanhalli et al., 2005). Incentives foster KS by encouraging the workers (Ramsten & Säljö, 2012). Incentives consist of two kinds i.e. monetary and non-monetary incentives. These types demonstrate different impacts on KS(Kubo & Saka, 2002; Mueller, 2012). Incentives may encourage the individuals through intrinsic or extrinsic ways. The literature regarding the link between incentives and KS suggest that financial incentives largely influence the performance of individuals while striving to attain the overall organizational objectives (Kubo & Saka, 2002). Incentives and KM is positively connected (Wang & Shi, 2019). One of the most critical determinant of the development and progress of organization is KS(Černe et al., 2013). It is hard to encourage individuals to voluntarily share the knowledge embedded in their heads with the individuals who need that particular knowledge to carry assigned job tasks and to do so, there is a need to encourage and motivate the individuals for willingly share their skills and expertise (Erden et al., 2012). Researchers and scholars argue that incentives may encourage and motivate individuals to voluntarily share their skills and experiences with their colleagues.

When incentive systems are designed according to the performance and expectations of the individuals, they intend to actively participate in the process of knowledge creation and its transmission to others (Bollinger & Smith, 2001). The vitality of the incentives is also stressed in the literature regarding organizational behavior. It is also emphasized in Vroom expectancy theory that when individuals are rewarded according to the

performance and expectations of the dedicated individuals, they intend to become more committed, motivated and satisfied towards their jobs (Cabrera et al., 2006). Several authors (Chen et al., 2015b; Chiang & Hung, 2010) have investigated the influence of incentives on KS in emerging economies (Lai & Tong, 2010; Rahman et al., 2018) and developed economies (Fey & Furu, 2008). The findings of their research yielded both negative and positive influences of incentives on KSP. KS may get diminished when individuals are not rewarded according to their performance and expectations (Alam et al., 2012). Incentives and KSP are significantly and positively linked(Masa'deh et al., 2016). Various theories have been presented to explain the role of incentives to encourage individual for sharing their skills and expertise with their colleagues like incentive theory supported this viewpoint (Kalman et al., 2002). Along with this theory, Social Exchange Theory also supported the viewpoint that incentives are significantly and positively linked with KSP. According to SET, when individuals are affiliated with each other, trust each other and feel personal obligation to help others in carrying their assigned tasks, are more inclined to share knowledge with them (Cropanzano & Mitchell, 2005).

Thus, incentives may negatively influence the KSP of the knowledge workers when they are already internally very encouraged (Zhang, 2005). The incentives system for KS is required to be re-investigated (Liebowitz, 2019) in the elementary education system of developing countries such Pakistan. The literature regarding incentives system to foster KS is controversial as Donate and de Pablo (2015)found that there is no link between incentives and KSP, however, research conducted by Fullwood et al., (2013) and Wang and Hou (2015) presented the positive association between incentives and KSP. Keeping in view the controversies regarding the link between incentives and KSP, current work intends to examine the influence of incentives on KSP. These arguments lead current research towards the development of following hypothesis:

H_1: Incentives positively and significantly impacts tacit KS practices

H_2: Incentives positively and significantly impacts Explicit KS practices

INCENTIVES, ORGANIZATIONAL COMMITMENT AND KS

Knowledge is referred to as the most crucial asset for the organization (Ouriques et al., 2019), therefore, increasing numbers of studies are focusing on the transmission of KS(Chumg et al., 2016; Massaro et al., 2015; Phamet al., 2018; Van Den Hooff & De Ridder, 2004; Zhang et al., 2015) for the attainment of competitive edge over other firms in the market (Loebbecke et al., 2016; Mao et al., 2016; Torres et al., 2018). Yet, KS is not always carried naturally, as it is dependent on the willingness of the individuals to share their personal experiences among workers at various levels within the organization (Husted & Michailova, 2002). In-fact, one of the most critical problems in KS is that when employees do not want to share their knowledge(Gagné, 2009; Huber, 2001). So, it is crucial to determine the factors that foster KS among workers (Van Den Hooff & Van Weenen, 2004) what are the factors that may be used as mechanisms to enhance the KS is a really important area of this.

The detailed literature review revealed that the factors that may influence or through which KS may be fostered have not be extensively focused in the KS literature(Chang & Yang, 2008). KS does not take place naturally (Johannessen et al., 1999; Robertson & O'Malley Hammersley, 2000). The literature indicates that basic issue that firm are encountering is that individuals hide their knowledge and hesitate in sharing that knowledge and those employees need to be encouraged to share what they possess in their minds (Akhavan et al., 2016; Bavik et al., 2018; Myers, 2015; Omotayo, 2015; Swacha, 2015; Wang & Hou, 2015).

Recently, authors and scholars have argued that when employees are more committed; take active participation in KS activities (Caniëls et al., 2017; Hanaysha, 2016;Martin-Perez & Martin-Cruz, 2015). Commitment of workers impacts the behavior and is strongly relevant with results of interests like KS as it encourages the individuals to handle the natural hesitation to take part in KSP due to the perception that knowledge is a source of power (Andrews et al., 2018; Mudambi & Navarra, 2015; Mytelka, 2018; Shiryaev et al., 2016). Yet, OC mediates the relationship among organizational factors and KSP, as very less number of studies has focused on link between organizational factor like incentives and KSP (Naim & Lenkla, 2016; Olaisen & Revang, 2017). The objective of current research is to make addition in the concerning literature by filling the identified gap. This paper makes significant contributions like in the knowledge management

literature by taking into consideration the association between incentives and KS practices through the mechanisms of OC.

This study stresses the requirement to attain higher levels of commitment of employees by their organization to retain them (Kinnear & Sutherland, 2000). When firms persuade the higher levels of OC from the individuals, it may get significant benefits from them (Chen et al., 2015a; Guay et al., 2016). OC takes place when employees are emotionally attached with the firm and expect from the firm to get them rewarded for their best performance (Astakhova, 2016; Coccia & Igor, 2018; Martin-Perez & Martin-Cruz, 2015;Top et al., 2015). Incentives deal with the issue of what encourages and direct the attitude of employees, so, incentives become the reason of OC by encouraging the individuals to spend time (Mowday et al., 1979). As when the needs of the employees are satisfied, they feel obligated and reciprocate the same way with energy impact KS. Summarizing, OC is a function of incentives that individuals obtain from their assigned tasks and consequently, OC must be cultured among the individuals within the organization (Nonaka et al., 2000). Rewards systems encourages desired attitude of individuals by employing both intrinsic and extrinsic incentives. Mixed results are presented by the impact of incentives on OC. Few of the research works indicate that extrinsic incentives are stronger determinant as compared to intrinsic incentives (Gardner & Lally, 2018), however, other have reverse results. This leads to following hypotheses,

H_3: Incentives is positively and significantly associated with OC

H_4: OC is positively and significantly associated with tacit KS practices

H_5: OC is positively and significantly associated with explicit KS practices

H_6: OC mediates the relationship between incentives and tacit KS practices

H_7: OC mediates the relationship between incentives and explicit KS practices

RESEARCH MODEL OF THE STUDY

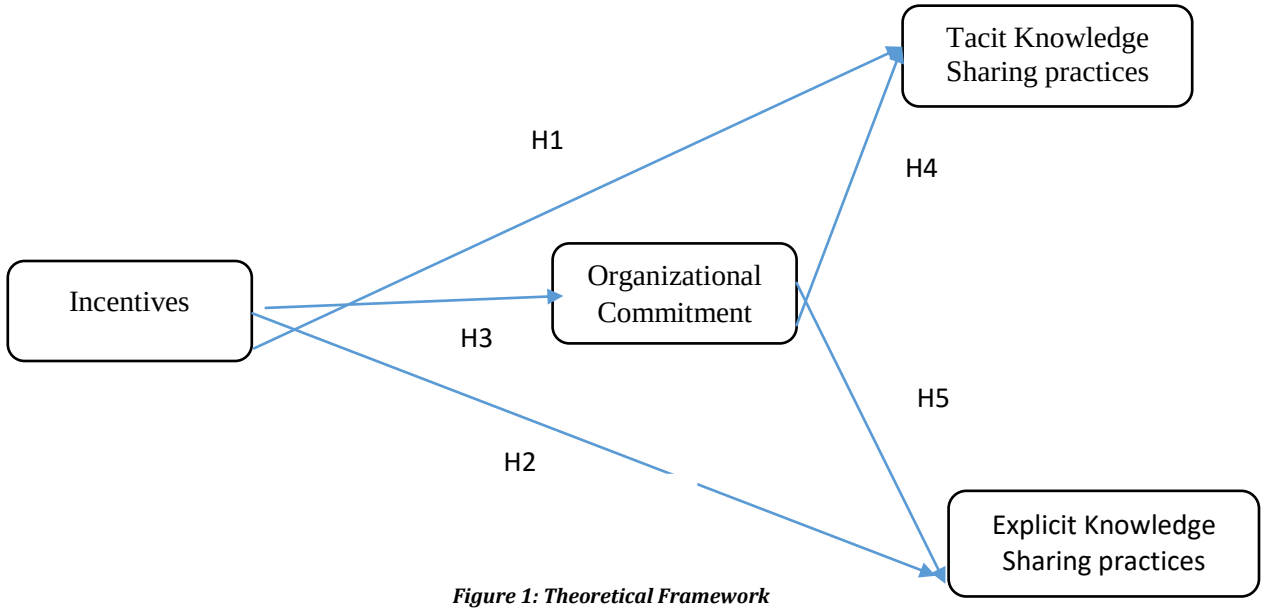

Figure 1: Theoretical Framework

Hypotheses:

H1: INC → TKSP H2: INC → EKSP H3: INC →OC H4: OC → TKSP
H5: OC → EKSP H6: INC →OC →EKSP H7: INC →OC →TKSP

III. RESEARCH METHODOLOGY

Instrumentation

To fulfill the key objectives of this study, data wasgathered on the variables of incentives,OC and KS practices. So, the survey questionnaire comprises of two sections was developed. First section reports the information of demographics characteristics of respondents i.e. knowledge workers (elementary school teachers). All measurement reported from existing literature; four items for incentives(Yao et al., 2010; Kim & Lee 2006; Nelson 2006; Wang & Noe, 2010), fourteen items were used to measure the OC(Buchanan, 1974; Cook & Wall, 1980; Meyer & Allen, 1997; Salancik, 1977) and ten items were adapted from the work of (Wang et al. 2014;Wang & Wang, 2012; Liebowitz & Yan 2004; Liebowitz & Chen 2001).Responses of knowledge workers (school teachers) on the variables of the hypothesized model were obtained on a five-point Likert Scale ranging from 1= strongly disagree to 5= strongly agree.

Data Collection Procedure

The role of KS in paramount amid elementary school teachers, as the elementary schools are the focus of knowledge based activities: school teachers are repositories of knowledge and transmit it to students for their academic performance (Stewart, 1997;Ortega, 2013;Silvestri&Veltri, 2011). They are loci of knowledge as extant of knowledge based activities related to knowledge acquisition and sharing take place inside the education institutes (Leitner, 2004;Fazlagic, 2005).Therefore, school teacher are known to be "knowledge workers" in primary schools were chosen as respondents.According to report of Pakistan Education Statistics(2018, 2019),there are various education foundations are operating in Pakistan such as Punjab Education Foundation (PEF), Sindh Education Foundation (SEF), Baluchistan Education Foundation (BEF), Elementary and Secondary Education foundations etc.There are 12516 schools and 117,015teachers are working for educating children under the domain of these education foundations.To this aim, therefore only one province (Punjab) of Pakistan was targeted for data collection because more than 60 percent of these institutionsare working in the Punjab province where almost 85 percent school teachers are employed for educating children (Table 1). Nevertheless,while data collection, the respondents were clearly informed about the objectives and ethical considerations of research. In this regard 1000 questionnaires were distributed, 785 were received back and out these 8 were discarded due to incomplete responses. Hence 777 were used for data analysis which reflects the overall response rate of77.7%.To perform data analysis, SPSS version 21, AMOS version 22 and Process Macro version v.3.5 were used.

Analysis and results

Descriptive Statistics

The descriptive statistics were used for the analysis of demographic profile of respondents, mean and standard deviation of variables used in this study. By keeping in view, the objective if this study the elementary schools are taken as population. As per the structure of school education system in Pakistan the elementary education ranges from pre-primary to middle schools (Early Childhood Education to grade 8). According to Ministry of Federal Education & Professional Training, (2018-19), there are total of 222.7 thousand schools teaching elementary level education, with 9997.8 thousand teachers, across the country (10-Education.pdf (finance.gov.pk).Table 2presents the information of the respondents of the study based on Gender and age of the respondents. It shows that out of 777 respondents, 457 (58.8%) are male teachers and 320 (41.2%) were female teachers. Moreover, the maximum respondents were from age group between thirty to forty years, (42.2%).

Table 2: Demographics

Demographic Characteristics	Frequency	% age
Gender		
Male	457	58.8
Female	320	41.2
Age		
20-30 years old	307	39.5

30-40 years old	328	42.2
40-50 years old	103	13.3
above 50 years old	39	5.0

Next the descriptive statistics of variables was calculated. Table 3 shows the mean, standard deviation and correlation among variables.

Table 3: Descriptive statistics and zero-order correlations.

	Variables	Mean	SD	1	2	3	4
1	**Incentives**	2.997	1.183	1			
2	**Organizational Commitment**	3.011	1.166	0.791**	1		
3	**Tacit KSP**	3.013	1.276	0.602**	0.630**	1	
4	**Explicit KSP**	2.985	1.313	0.796**	0.763**	0.730**	1

N = 777; **p < 0.01.

THE RELIABILITY AND VALIDITY OF SCALE

The results of reliability, convergent validity and discriminate validity of the items are presented in Table 4. For the reliability of scales, individual item reliability (tested through factor loading) and internal consistency reliability (based on the Cronbach's alpha values) were reported. Table 4 shows all factor loading values of all items lie between 0.911 to 0.943, greater than threshold value 0.5 (Hulland, 1999) and alpha values of all constructs lie between 0.843 to 0.969, greater to cutoff point 0.7 (Pallant, 2010). Thus, all constructs were reliable.

On the other hand, for validity, the convergent validity and discriminant validity were tested. The convergent validity was further tested by the composite reliability (CR) and Average Variance Extracted (AVE). Table 4 shows that all the constructs demonstrated CR and AVE values equal to or greater than their threshold values, respectively (Hair et al., 2010).

Next, the difference between Cronbach's alpha values of a construct to its average correlations with other model variables was calculated to measure discriminate validity (Sila&Ebrahimpour, 2005). Table 4 shows the presence of discriminant validity, as the alpha value of each construct is larger than the average of its correlations with other variables (Ghiselli et al., 1981).i.e. Incentives = 0.189, OC= 0.196, Tacit KSP = 0.214, and explicit KSP = 0.237.

Table 4: Summary of Reliability and Validity

Variables (No. of Items)	Factor Loading	Cronbach'sAlpha > 0.7	Composite Reliability CR> 0.7	Average Variance Extracted AVE > 0.5	Average correlation with other variables (x)	Discriminant validity (alpha - x)
Incentives (4)	0.833, 0.846,0.823, 0.794.	0.843	0.894	0.679	0.654	0.189
Organizational Commitment (14)	0.939, 0.954, 0.936, 0.945, 0.907, 0.828, 0.905, 0.920, 0.918, 0.807, 0.868, 0.871, 0.858, 0.853	0.959	0.893	0.808	0.763	0.196
Tacit KSP (5)	0.889,0.930,0.911, 0.908,0.869	0.942	0.956	0.813	0.728	0.214

Explicit KSP (5)	0.929,0.943,0.935, 0.921,0.911	0.967	0.969	0.861	0.730	0.237

HYPOTHESIS TESTING

The projected hypotheses variables were estimated by employing PROCESS macro for SPSS by Hayes at bootstrapping samples at 95% confidence intervals. Following Hayes (2018),first of all, direct influence of incentives on KS practices was investigated. Then indirect influence of incentives on KS practices was measured through the potential mediator (OC) was examined.

DIRECT EFFECTS

Table 5 introduced hypothesized mediation findings. The direct effect of independent variable on independent variable showed that incentives has a significant and positive effect on tacit KSP at beta 0.167 with CI (0.096, 0.238) and explicit KSP at beta 0.050 with CI (0.019, 0.120). Hence, H1 and H2 are accepted. This means that when individuals are rewarded with expected incentives, they are more likely to get encouraged and are willing to share their knowledge their colleagues. Similarly, the direct effect of incentives on OC was examined and result showed positive and significant effect at beta 0.720 with CL (0.672, 0.767) and accept the H3. The result showed when individuals are rewarded with expected incentives; they are more likely to get encouraged and committed towards carrying their assigned tasks and share their knowledge with others. Next, other direct effect of OC to TKSP and OC to EKSP were also showed positive and significant effect at beta 0.711 with CI (0.639,0.783) and beta 0.859 with CI (0.788,0.929) respectively. Therefore, H4 and H5 are also accepted. The result show when individuals are more committed, they are more likely to get encouraged and committed towards carrying their assigned tasks and share their knowledge with others.

INDIRECT EFFECTS

The table 5 also explains the indirect effects of incentives on tacit KS practices and explicit KS practices through mediator OC. The results showed that both the hypothetical relation of incentive to TKSP through OC (at beta 0.512 with CI, 0.429, 0.595) and incentive to EKSP through OC (at beta 0.618 with CI, 0.545, 0.688) are significant. Thus, both H6 and H7 are accepted which indicates OC partially intervene the link between incentives and TKSP and incentives to EKSP respectively. It means when individuals are rewarded, they get more encouraged and commitment towards their organization and works hard to align their practices for the achievement and accomplishment of organizational goals. Hypotheses testing were done to test the path coefficients of the variables were statistically significant or not.

All of the projected hypotheses of the study have been accepted as well as mediation analysis does refer that all the paths does mediate the relationship partially between independent and dependent variables and reveal the positive association among incentives, OC, TKSP and EKSP.

Table 5: Standardized Path Coefficients

Path relationship		**Estimate**	**S.E.**	**t-value**	**Bias-Corrected Bootstrap 95% confidence interval**	**Result**
			Total Effect			
	INC → TKSP	0.679	0.030	22.564	(0.620, 0.738)	Sig.
	INC → EKSP	0.669	0.032	21.015	(0.606, 0.731)	Sig.
			Direct Effects			
H1	INC → TKSP	0.167	0.036	4.615	(0.096, 0.238)	Sig. (Accepted)
H2	INC → EKSP	0.050	0.035	1.423	(0.019, 0.120)	Sig. (Accepted)
H3	INC → OC	0.720	0.024	10.952	(0.672, 0.767)	Sig. (Accepted)
H4	OC → TKSP	0.711	0.037	19.371	(0.639, 0.783)	Sig. (Accepted)
H5	OC → EKSP	0.859	0.036	23.970	(0.788, 0.929)	Sig. (Accepted)
			Indirect Effects			

H6	INC→OC→TKSP	0.512	0.043	(0.429, 0.595)	Sig. (Accepted) (Partial Mediation)
H7	INC→OC→EKSP	0.618	0.036	(0.545, 0.688)	Sig. (Accepted) (Partial Mediation)

IV. CONCLUSION AND IMPLICATIONS

The proposed relationship between variables of this study contributed to the literature both theoretically and empirically. Presently, education system of developing countries, particularly Pakistan, are facing serious problems with respect to the quality. This study provides possible solution to this issue, that if the rewards or incentives, being one of the important organizational factors are utilized and effectively implemented, it will not only assist in developing the affiliation among individuals but will also influence their attitudes (OC) leading towards enhanced KS practices. Hence, the model proposed and tested in this study can be useful for practitioners in education sector of Pakistan. Moreover, the implications of the study are consistent with the findings and conclusion of the research as the results of the association between rewards system and KS practices of knowledge workers demonstrate positive association. Likewise, the outcomes demonstrate positive influence of mediator (i.e. OC) on both KSP (Explicit and Tacit).

This study concludes that awarding incentives to school teachers play a positive and significant role in the improvement of KS practices (both tacit KS practices and explicit KS practices) of teachers in the presence of mediator OC. Thus, the findings of this study will help the management of elementary education system to understand that there must be a proper incentives and reward mechanisms as it motivate the teachers to show commitment toward their organization and this commitment will encourage the teachers to share their knowledge effectively, as it will improve the work quality, efficiency and competency that can benefit the individual and the organizations positively. Thus, the concept of social exchange theory has given a strong theoretical support to comprehend underlying association. Lastly, regardless of numerous cultural disparities, current research gives support to the applicability of western theories to non-western culture and emerging economy' setting.

V. RECOMMENDATIONS FOR FUTURE RESEARCH

This study has considered only one organizational factor 'incentives' into consideration. It is recommended to examine other individual and technological factors which might influence attitudes, behaviors and KSP of teachers in elementary schools of Pakistan. Though the current research filled the gap in the concerned literature by examining the influence of intervening mechanism 'OC' (comprised of affective, continuous and normative commitment) that play significant role in strengthen the effect of organizational factors on KS practices of knowledge workers 'teachers' in schools. To get more comprehend results and the impact of organizational factors on KSP, the researchers are needed to consider more constructs as mediators and moderators (such as, trust, perceived organizational support, turnover intensions, absenteeism) in future studies.

VI. REFERENCES

1. Acharya, A., Singh, S. K., Pereira, V., & Singh, P. (2018). Big data, knowledge co-creation and decision making in fashion industry. *International Journal of Information Management, 42*, 90-101.

2. Ahmed, N. G. E. D. (2019). The impact of incentives on organizational commitment in public organizations in Egypt. *Economic and Social Development: Book of Proceedings*, 212-218.

3. Akhavan, P., Hosseini, S. M., & Abbasi, M. (2016). Selecting new product development team members with KS approach: A fuzzy bi-objective optimization model. *Program, 50*(2), 195-214.

4. Al Dari, T., Jabeen, F., & Papastathopoulos, A. (2018). Examining the role of leadership inspiration, rewards and its relationship with contribution to KS: Evidence from the UAE. *Journal of Workplace Learning, 30*(6), 488-512.

5. Alam, O., Adams, B., & Hassan, A. E. (2012). Preserving knowledge in software projects. *Journal of Systems and Software, 85*(10), 2318-2330.

6. Alavi, M., & Leidner, D. (1999). Knowledge management systems: issues, challenges, and benefits. *Communications of the Association for Information systems, 1*(1), 7.

7. Albors-Garrigos, J., Igartua, J. I., & Peiro, A. (2018). Innovation management techniques and tools: Its impact on firm innovation performance. *International Journal of Innovation Management, 22*(06), 1850051.

8. Andrews, E. J., Reed, M. G., Jardine, T. D., & Steelman, T. A. (2018). Damming knowledge flows: power as a constraint on knowledge pluralism in river flow decision-making in the Saskatchewan River Delta. *Society & natural resources, 31*(8), 892-907.

9. Astakhova, M. N. (2016). Explaining the effects of perceived person-supervisor fit and person-organization fit on organizational commitment in the US and Japan. *Journal of business research, 69*(2), 956-963.

10. Aubert, J. E., & Reiffers, J. L. (2003). Knowledge Economies in the Middle East and North Africa towards New Development Strategies. In *WBI Learning Resources Series*.

11. Bavik, Y. L., Tang, P. M., Shao, R., & Lam, L. W. (2018). Ethical leadership and employee KS: Exploring dual-mediation paths. *The Leadership Quarterly, 29*(2), 322-332.

12. Bock, G.-W., Zmud, R. W., Kim, Y.-G., & Lee, J.-N. (2005). Behavioral intention formation in KS: Examining the roles of extrinsic motivators, social-psychological factors, and organizational climate. *MIS quarterly, 29*(1), 87-111.

13. Bollinger, A. S., & Smith, R. D. (2001). Managing organizational knowledge as a strategic asset. *Journal of knowledge management, 5*(1), 8-18.

14. Buchanan, B. (1974). Building organizational commitment: The socialization of managers in work organizations. *Administrative Science Quarterly*, 533-546.

15. Cabrera, A., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in KS. *The international journal of human resource management, 17*(2), 245-264.

16. Caniëls, M. C., Neghina, C., & Schaetsaert, N. (2017). Ambidexterity of employees: the role of empowerment and KS. *Journal of knowledge management, 21*(5), 1098-1119.

17. Carmeli, A., Gelbard, R., & Reiter-Palmon, R. (2013). Leadership, creative problem-solving capacity, and creative performance: The importance of KS. *Human Resource Management, 52*(1), 95-121.

18. Černe, M., Jaklič, M., & Škerlavaj, M. (2013). Management innovation in focus: The role of knowledge exchange, organizational size, and IT system development and utilization. *European Management Review, 10*(3), 153-166.

19. Chang, Y. C., & Yang, P. Y. (2008). The impacts of academic patenting and licensing on knowledge production and diffusion: a test of the anti-commons effect in Taiwan. *R&D Management, 38*(3), 321-334.

20. Chen, S.-Y., Wu, W.-C., Chang, C.-S., Lin, C.-T., Kung, J.-Y., Weng, H.-C., . . . Lee, S.-I. (2015a). Organizational justice, trust, and identification and their effects on organizational commitment in hospital nursing staff. *BMC health services research, 15*(1), 363.

21. Chen, Y. J., Shanthikumar, J. G., & Shen, Z. J. M. (2015b). Incentive for peer-to-peer KS among farmers in developing economies. *Production and Operations Management, 24*(9), 1430-1440.

22. Chiang, Y. H., & Hung, K. P. (2010). Exploring open search strategies and perceived innovation performance from the perspective of inter-organizational knowledge flows. *R&D Management, 40*(3), 292-299.

23. Chumg, H.-F., Seaton, J., Cooke, L., & Ding, W.-Y. (2016). Factors affecting employees' knowledge-sharing behaviour in the virtual organisation from the perspectives of well-being and organisational behaviour. *Computers in Human Behavior, 64*, 432-448.

24. Coccia, M., & Igor, B. (2018). Rewards in public administration: a proposed classification.

25. Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of occupational psychology, 53*(1), 39-52.

26. Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management, 31*(6), 874-900.

27. Davenport, T. H., De Long, D. W., & Beers, M. C. (1998). Successful knowledge management projects. *Sloan management review, 39*(2), 43-57.

28. Donate, M. J., & de Pablo, J. D. S. (2015). The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of business research, 68*(2), 360-370.

29. Donnelly, J. (2019). *The concept of human rights* (Vol. 19): Routledge.

30. Drucker, P.F. (1994), Post-Capitalist Society, Routledge, London.

31. Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge. *California management review, 41*(2), 79-94.

32. Drucker, P.F. (2012), Managing in the Next Society, Routledge, London.

33. Dumay, J., Guthrie, J. & Puntillo, P. (2015). IC and public sector: a structured literature review,
34. *Journal of Intellectual Capital, 16*(2), 267-284.

35. Erden, Z., Von Krogh, G., & Kim, S. (2012). KS in an online community of volunteers: the role of community munificence. *European Management Review, 9*(4), 213-227.

36. Fazlagic, A. (2005). Measuring the intellectual capital of a University, Conference on Trends in the Management of Human Resources in Higher Education, OECD, Paris, available at: www.oecd.org/edu/imhe/35322785.pdf (accessed December 9, 2016).

37. Felin, T., & Hesterly, W. S. (2007). The knowledge-based view, nested heterogeneity, and new value creation: Philosophical considerations on the locus of knowledge. *Academy of management review, 32*(1), 195-218.

38. Feng, K., Chen, E. T., & Liou, W. (2005). Implementation of knowledge management systems and firm performance: an empirical investigation. *Journal of Computer Information Systems, 45*(2), 92-104.

39. Ferris, F. D., von Gunten, C. F., & Emanuel, L. L. (2001). Knowledge: insufficient for change: Mary Ann Liebert, Inc.

40. Fey, C. F., & Furu, P. (2008). Top management incentive compensation and KS in multinational corporations. *Strategic management journal, 29*(12), 1301-1323.

41. Foss, N. J., Minbaeva, D. B., Pedersen, T., & Reinholt, M. (2009). Encouraging KS among employees: How job design matters. *Human Resource Management, 48*(6), 871-893.

42. Fullwood, R., Rowley, J., & Delbridge, R. (2013). KS amongst academics in UK universities. *Journal of knowledge management, 17*(1), 123-136.

43. Gagné, M. (2009). A model of knowledge-sharing motivation. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management, 48*(4), 571-589.

44. Gardner, B., & Lally, P. (2018). Modelling habit formation and its determinants *The psychology of habit* (pp. 207-229): Springer.

45. Ghiselli, E. E., Campbell, J. P., & Zedeck, S. (1981). Measurement theory for the behavioral sciences. WH Freeman.

46. Gilson, L. L., Lim, H. S., Luciano, M. M., & Choi, J. N. (2013). Unpacking the cross-level effects of tenure diversity, explicit knowledge, and KS on individual creativity. Journal of occupational and organizational psychology, 86(2), 203-222.

47. Guay, R. P., Choi, D., Oh, I.-S., Mitchell, M. S., Mount, M. K., & Shin, K.-H. (2016). Why people harm the organization and its members: Relationships among personality, organizational commitment, and workplace deviance. *Human Performance, 29*(1), 1-15.

48. Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). Multivariate data analysis: A global perspective (Vol. 7). Pearson

49. Han, T.-S., Chiang, H.-H., & Chang, A. (2010). Employee participation in decision making, psychological ownership and KS: mediating role of organizational commitment in Taiwanese high-tech organizations. *The international journal of human resource management, 21*(12), 2218-2233.

50. Hanaysha, J. (2016). Examining the effects of employee empowerment, teamwork, and employee training on organizational commitment. *Procedia-Social and Behavioral Sciences, 229*, 298-306.

51. Hayes, A. F. (2018). Introduction to mediation, moderation, and conditional process analysis (2nd ed.). New York, NY: Guilford. ISBN: 9781462534654.

52. Holste, J. S. & Fields, D. (2010). Trust and tacit knowledge sharing and use. *Journal of Knowledge Management*, 14(1), 128-140.

53. Hu, L., & Randel, A. E. (2014). KS in teams: Social capital, extrinsic incentives, and team innovation. *Group & Organization Management, 39*(2), 213-243.

54. Huber, G. P. (2001). Transfer of knowledge in knowledge management systems: unexplored issues and suggested studies. *European Journal of Information Systems, 10*(2), 72-79.

55. Hulland, J. (1999) Use of Partial Least Squares (PLS) in Strategic Management Research: A Review of Four Recent Studies. Strategic Management Journal, 20, 195-204. https://doi.org/10.1002/(SICI)1097-0266(199902)20:2<195::AID-SMJ13>3.0.CO;2-7

56. Hussinki, H., Ritala, P., Vanhala, M., & Kianto, A. (2017). Intellectual capital, knowledge management practices and firm performance. *Journal of Intellectual capital, 18*(4), 904-922.

57. Husted, K., & Michailova, S. (2002). Diagnosing and fighting knowledge-sharing hostility. *Organizational Dynamics, 31*(1), 60-73.

58. Johannessen, J.-A., Olsen, B., & Olaisen, J. (1999). Aspects of innovation theory based on knowledge-management. *International Journal of Information Management, 19*(2), 121-139.

59. Kalman, M. E., Monge, P., Fulk, J., & Heino, R. (2002). Motivations to resolve communication dilemmas in database-mediated collaboration. *Communication Research, 29*(2), 125-154.

60. Kankanhalli, A., Tan, B. C., & Wei, K.-K. (2005). Contributing knowledge to electronic knowledge repositories: An empirical investigation. *MIS quarterly, 29*(1).

61. Kaya, T., & Sagsan, M. (2015). *The impact of tacit knowledge capacity on social media: an empirical research on physicians in north Cyprus.* Paper presented at the 12th International Conference on Intellectual Capital, Knowledge Management and Organisaitonal Learning.

62. Kharabsheh, R. A. (2007). A model of antecedents of KS. *Electronic Journal of Knowledge Management, 5*(4).

63. Kianto, A., & Andreeva, T. (2014). Knowledge management practices and results in service-oriented versus product-oriented companies. *Knowledge and Process Management, 21*(4), 221-230.

64. Kim, S., & Lee, H. (2006). The impact of organizational context and information technology on employee knowledge-sharing capabilities. *Public Administration Review, 66*(3), 370-385.

65. Kinnear, L., & Sutherland, M. (2000). Determinants of organisational commitment amongst knowledge workers. *South African journal of business management, 31*(3), 106-112.

66. Kubo, I., & Saka, A. (2002). An inquiry into the motivations of knowledge workers in the Japanese financial industry. *Journal of knowledge management, 6*(3), 262-271.

67. Lai, S. C., & Tong, C. (2010). The Mediating Effect of Incentive and Reward System on the Relationship between Enterprise Ownership and KS in Electronic Industry in Southern China. *International Journal of Interdisciplinary Social Sciences, 5*(5).

68. Leitner, K.H. (2004). Intellectual capital reporting for universities: conceptual background and
69. application for Austrian universities, *Research Evaluation*, 13(2), 129-140.

70. Liebowitz, J., & Chen, Y. (2001). Developing knowledge-sharing proficiencies. *Knowledge Management Review*, *3*, 12-15.

71. Liebowitz, J., & Yan, C. (2004). KS proficiencies: the key to knowledge management *Handbook on Knowledge Management 1* (pp. 409-424): Springer.

72. Liebowitz, J. (2019). *Building organizational intelligence: A knowledge management primer*: CRC press.

73. Lin, H.-F. (2007). KS and firm innovation capability: an empirical study. *International Journal of Manpower, 28*(3/4), 315-332.

74. Liu, Y., Keller, R. T., & Shih, H. A. (2011). The impact of team-member exchange, differentiation, team commitment, and KS on R&D project team performance. *R&D Management, 41*(3), 274-287.

75. Liu, Y., & Phillips, J. S. (2011). Examining the antecedents of KS in facilitating team innovativeness from a multilevel perspective. *International Journal of Information Management, 31*(1), 44-52.

76. Loebbecke, C., Van Fenema, P. C., & Powell, P. (2016). Managing inter-organizational KS. *The Journal of Strategic Information Systems, 25*(1), 4-14.

77. Lu, W. (2012). Intellectual capital and university performance in Taiwan, *Economic Modelling*, 29(4), 1081-1089.

78. Manaf, H. A., Armstrong, S. J., Lawton, A., & Harvey, W. S. (2018). Managerial tacit knowledge, individual performance, and the moderating role of employee personality. *International Journal of Public Administration, 41*(15), 1258-1270.

79. Manfredi Latilla, V., Frattini, F., Messeni Petruzzelli, A., & Berner, M. (2018). Knowledge management, knowledge transfer and organizational performance in the arts and crafts industry: a literature review. *Journal of knowledge management, 22*(6), 1310-1331.

80. Mao, H., Liu, S., Zhang, J., & Deng, Z. (2016). Information technology resource, knowledge management capability, and competitive advantage: The moderating role of resource commitment. *International Journal of Information Management, 36*(6), 1062-1074.

81. Maravilhas, S., & Martins, J. (2019). Strategic knowledge management a digital environment: Tacit and explicit knowledge in Fab Labs. *Journal of business research, 94*, 353-359.

82. Marques, J. M. R., La Falce, J. L., Marques, F. M. F. R., De Muylder, C. F., & Silva, J. T. M. (2019). The relationship between organizational commitment, knowledge transfer and knowledge management maturity. *Journal of knowledge management, 23*(3), 489-507.

83. Martin-Perez, V., & Martin-Cruz, N. (2015). The mediating role of affective commitment in the rewards–knowledge transfer relation. *Journal of knowledge management, 19*(6), 1167-1185.

84. Masa'deh, R. e., Obeidat, B. Y., & Tarhini, A. (2016). A Jordanian empirical study of the associations among transformational leadership, transactional leadership, KS, job performance, and firm performance: A structural equation modelling approach. *Journal of management development, 35*(5), 681-705.

85. Massaro, M., Dumay, J., & Garlatti, A. (2015). Public sector knowledge management: a structured literature review. *Journal of knowledge management, 19*(3), 530-558.

86. Matzler, K., & Mueller, J. (2011). Antecedents of KS–Examining the influence of learning and performance orientation. *Journal of Economic Psychology, 32*(3), 317-329.

87. Meyer, J. P., & Allen, N. J. (1997). *Commitment in the workplace: Theory, research, and application*: Sage.

88. Milne, P. (2007). Motivation, incentives and organisational culture. *Journal of knowledge management, 11*(6), 28-38.

89. Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior, 14*(2), 224-247.

90. Mowe, M., Bosaeus, I., Rasmussen, H. H., Kondrup, J., Unosson, M., Rothenberg, E., & Irtun, Ø. (2008). Insufficient nutritional knowledge among health care workers? *Clinical nutrition, 27*(2), 196-202.

91. Mudambi, R., & Navarra, P. (2015). Is knowledge power? Knowledge flows, subsidiary power and rent-seeking within MNCs *The Eclectic Paradigm* (pp. 157-191): Springer.

92. Mueller, J. (2012). KS between project teams and its cultural antecedents. *Journal of knowledge management, 16*(3), 435-447.

93. Mueller, J. (2014). A specific knowledge culture: Cultural antecedents for KS between project teams. *European Management Journal, 32*(2), 190-202.

94. Myers, C. (2015). Is your company encouraging employees to share what they know. *Harvard business review, 6*.

95. Mytelka, L. K. (2018). Knowledge and structural power in the international political economy *Strange Power: Shaping the Parameters of International Relations and International Political Economy* (pp. 61-78): Routledge.

96. Naim, M. F., & Lenkla, U. (2016). KS as an intervention for Gen Y employees' intention to stay. *Industrial and Commercial Training, 48*(3), 142-148.

97. Nelson, A. C. (2006). Leadership in a new era: Comment on "Planning Leadership in a New Era". *Journal of the American Planning Association, 72*(4), 393-409.

98. Nonaka, I. & Takeuchi, H. (1995). The knowledge-creating company: How Japanese companies create the dynamics of innovation, Oxford University Press, USA

99. Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and leadership: a unified model of dynamic knowledge creation. *Long range planning, 33*(1), 5-34.

100. Noruzy, A., Dalfard, V. M., Azhdari, B., Nazari-Shirkouhi, S., & Rezazadeh, A. (2013). Relations between transformational leadership, organizational learning, knowledge management, organizational innovation, and organizational performance: an empirical investigation of manufacturing firms. *The International Journal of Advanced Manufacturing Technology, 64*(5-8), 1073-1085.

101. OECD (1996). The Knowledge-Based Economy, Organization for Economic Cooperation and Development, Paris, available at: www.oecd.org/sti/sci-tech/1913021.pdf (accessed December 22, 2016).

102. Olaisen, J., & Revang, O. (2017). The dynamics of intellectual property rights for trust, KS and innovation in project teams. *International Journal of Information Management, 37*(6), 583-589.

103. Omotayo, F. O. (2015). Knowledge Management as an important tool in Organisational Management: A Review of Literature. *Library Philosophy and Practice, 1*(2015), 1-23.

104. Ortega, G.P. (2013). Los activos intangibles y el capital intelectual: Una aproximación a los retos de sucontabilización, Saber Ciencia y Libertad, 8(1), 143-166.

105. Ouriques, R. A. B., Wnuk, K., Gorschek, T., & Svensson, R. B. (2019). Knowledge management strategies and processes in agile software development: a systematic literature review. *International Journal of Software Engineering and Knowledge Engineering, 29*(03), 345-380.

106. Pacharapha, T., & Ractham, V. V. (2012). Knowledge acquisition: the roles of perceived value of knowledge content and source. *Journal of knowledge management*.

107. Pallant, J., & Manual, S. S. (2010). A step by step guide to data analysis using SPSS. McGraw-Hill Education.

108. Pham, H., Ul Haq, I., Nkhoma, M., Nguyen, M., & Brennan, L. (2018). *Exploring KS Practices for Raising Security Awareness.* Paper presented at the Australasian Conference on Information Systems.

109. Quigley, N. R., Tesluk, P. E., Locke, E. A., & Bartol, K. M. (2007). A multilevel investigation of the motivational mechanisms underlying KS and performance. *Organization science, 18*(1), 71-88.

110. Rahman, M. S., Daud, N. M., & Raman, M. (2018). KS behaviour among non-academic staff in higher learning institutes: The role of trust and perceived risk. *Knowledge Management & E-Learning: An International Journal, 10*(1), 113-124.

111. Ramsten, A.-C., & Säljö, R. (2012). Communities, boundary practices and incentives for KS?: A study of the deployment of a digital control system in a process industry as a learning activity. *Learning, Culture and Social Interaction, 1*(1), 33-44.

112. Reychav, I., & Weisberg, J. (2009). Good for workers, good for companies: How KS benefits individual employees. *Knowledge and Process Management, 16*(4), 186-197.

113. Ribière, V., & Worasinchai, L. (2015). The Institute for Knowledge and Innovation Southeast Asia (IKI-SEA) of Bangkok University Bangkok Thailand.

114. Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of knowledge management, 9*(3), 18-35.

115. Riege, A. (2007). Actions to overcome knowledge transfer barriers in MNCs. *Journal of knowledge management, 11*(1), 48-67.

116. Robertson, M., & O'Malley Hammersley, G. (2000). Knowledge management practices within a knowledge-intensive firm: the significance of the people management dimension. *Journal of European Industrial Training, 24*(2/3/4), 241-253.

117. Šajeva, S. (2014). Encouraging KS among employees: how reward matters. *Procedia-Social and Behavioral Sciences, 156*, 130-134.

118. Salancik, G. R. (1977). Commitment and the control of organizational behavior and belief. *New directions in organizational behavior, 1*, 54.

119. Sánchez, M.P. & Elena, S. (2006). Intellectual capital in universities: improving transparency andinternal management. *Journal of Intellectual Capital*, 7(4), 529-548.

120. Secundo, G., Dumay, J., Schiuma, G. & Passiante, G. (2016). Managing intellectual capital through a collective intelligence approach: an integrated framework for universities, *Journal of Intellectual Capital*, 17(2), 298-319.

121. Shiryaev, D. V., Artemova, E. I., Zelinskaya, M. V., Novoselov, S. N., Galiullina, S. D., & Pismennaya, E. E. (2016). "Knowledge economy" as a resource for the intensification of socio-economic transformation of the regional economic space. *International Review of Management and Marketing, 6*(1S), 232-237.

122. Sila, I., & Ebrahimpour, M. (2005). Critical linkages among TQM factors and business results. International Journal of Operations & Production Management, Vol. 25 No. 11, pp. 1123-1155.

123. Silvi, R., & Cuganesan, S. (2006). Investigating the management of knowledge for competitive advantage: A strategic cost management perspective. *Journal of Intellectual capital, 7*(3), 309-323.

124. Silvestri, A. and Veltri, S. (2011), "The intellectual capital report within universities: comparing
125. experiences", Economic Science Series, Vol. 20 No. 2, pp. 618-624.

126. Srivastava, A., Bartol, K. M., & Locke, E. A. (2006). Empowering leadership in management teams: Effects on KS, efficacy, and performance. *Academy of management journal, 49*(6), 1239-1251.

127. Stankosky, M. (2005). *Creating the discipline of knowledge management*: Routledge.

128. Stewart, T. (1997). The New Wealth of Organizations, Nicholas Brealey, London.

129. Swacha, J. (2015). Gamification in knowledge management: motivating for KS. *Polish Journal of Management Studies, 12*.

130. Top, M., Akdere, M., & Tarcan, M. (2015). Examining transformational leadership, job satisfaction, organizational commitment and organizational trust in Turkish hospitals: public servants versus private sector employees. *The international journal of human resource management, 26*(9), 1259-1282.

131. Tiwana, A. (2001). The Essential Guide to knowledge Management e-business and CRM Application. Prentice Hall, NY. Inter-Organizational Relationships, Innovation and Firm Performance. *Technological Forecasting and Social Change*, 77(7), 1076-1089.

132. Torres, A. I., Ferraz, S. S., & Santos-Rodrigues, H. (2018). The impact of knowledge management factors in organizational sustainable competitive advantage. *Journal of Intellectual capital, 19*(2), 453-472.

133. Van Den Hooff, B., & De Ridder, J. A. (2004). KS in context: the influence of organizational commitment, communication climate and CMC use on KS. *Journal of knowledge management, 8*(6), 117-130.

134. Van Den Hooff, B., & Van Weenen, F. D. L. (2004). Committed to share: the relationship between organizational commitment, KS and the use of CMC. *Knowledge and Process Management, 11*(1), 13-24.

135. Wang, Q., & Shi, Q. (2019). The incentive mechanism of KS in the industrial construction supply chain based on a supervisory mechanism. *Engineering, Construction and Architectural Management*.

136. Wang, S., & Noe, R. A. (2010). KS: A review and directions for future research. *Human resource management review, 20*(2), 115-131.

137. Wang, W.-T., & Hou, Y.-P. (2015). Motivations of employees' KS behaviors: A self-determination perspective. *Information and Organization, 25*(1), 1-26.

138. Wang, Z. N. and Wang, N. X. (2012). Knowledge sharing, innovation and firm performance", *Expert Systems with Applications*, 39(10), 8899-8908.

139. Wang, Z., Wang, N., & Liang, H. (2014). KS, intellectual capital and firm performance. *Management decision, 52*(2), 230-258.

140. Wiewiora, A., Trigunarsyah, B., Murphy, G., & Coffey, V. (2013). Organizational culture and willingness to share knowledge: A competing values perspective in Australian context. *International journal of project management, 31*(8), 1163-1174.

141. Yao, Y., Dong, Y., & Dresner, M. (2010). Managing supply chain backorders under vendor managed inventory: An incentive approach and empirical analysis. *European Journal of Operational Research, 203*(2), 350-359.

142. Yu, S.-H., Kim, Y.-G., & Kim, M.-Y. (2004). *Linking organizational knowledge management drivers to knowledge management performance: An exploratory study.* Paper presented at the 37th Annual Hawaii International Conference on System Sciences, 2004. Proceedings of the.

143. Zhang, X., Gao, Y., Yan, X., de Pablos, P. O., Sun, Y., & Cao, X. (2015). From e-learning to social-learning: Mapping development of studies on social media-supported knowledge management. *Computers in Human Behavior, 51*, 803-811.

144. Zhang, Z. (2005). Managing Knowledge Assets within Organizations: Role of Incentives and Information Systems.

145. Zhang, Z., & Jasimuddin, S. M. (2012). Knowledge market in organizations: incentive alignment and IT support. *Industrial management & data systems, 112*(7), 1101-1122.