

The impact of knowledge hiding and toxic leadership on knowledge worker productivity – Evidence from IT sector of Pakistan

Sameen Khalid, School of Economics and Management, South West Jiaotong University, China, sameen_khalid@yahoo.com

Yiyuan Li, School of Economics and Management, South West Jiaotong University, China, liyiyuan@home.swjtu.edu.cn

Khawaja Fawad Latif, COMSATS University Islamabad Attock Campus, Pakistan, fawad.latif@cuiatk.edu.pk

Chunyong Tang, School of Economics and Management, South West Jiaotong University, China, cytang@home.swjtu.edu.cn

Abstract

This study intends to identify the impact of Knowledge Hiding and Toxic Leadership on Knowledge Management Process at Information Technology (IT) companies of Pakistan and explore the overall impact on Knowledge Worker Productivity by keeping knowledge worker ambidexterity as mediator. Any factor that could negatively influence the knowledge management process would hamper employees' productivity in that setup. The knowledge-based view is used as base theory which characterizes knowledge as the most significant strategic utensil for performance, however, the IT sector being a highly knowledge-intensive sector provides rationale for conducting study in this area. The study is quantitative and the sample size consists of 405 respondents selected based on convenience sampling. However, Analysis was performed using Structural Equation Modelling Software Smart Partial Least-Square (SEM-PLS). The findings show that evasive hiding, playing dumb and toxic leadership does not have any significant impact on knowledge management process, however, rationalized hiding was positively related to knowledge management process and knowledge worker productivity. Also, partial mediation of knowledge worker ambidexterity was observed. Furthermore, this study is a significant addition to the existing literature as to the best of our knowledge, it is one of the earlier contributions to explore knowledge hiding as a barrier to the knowledge management process along with toxic leadership introducing mediating role of knowledge worker ambidexterity. Theoretical contributions and practical implications are also discussed at the end.

Keywords: Knowledge hiding, toxic leadership, knowledge management process, knowledge worker ambidexterity, knowledge worker productivity, IT sector, Pakistan.

Introduction

In the present era of globalization, organizations are rapidly shifting from tangible economy towards knowledge-based economy, therefore, utilization of intangible knowledge through effective knowledge management has turned to be the base for gaining competitive advantage in both public and private sector organizations (Gagne et al., 2019). Nature of jobs has moved to another complex level which demands another level of efforts, frequent problem solving and

innovative thinking (Collins & Smith, 2006). In carrying out such knowledge management, various factors are involved which cover corporate culture, integration of group members, appropriate workflow processes, strong support from top management, cooperation and coordination between the employees, their behaviors related to knowledge handling (Cabrera et al., 2006), whereas, resistance of employees from doing so can't be ignored at the same time (Yeh et al., 2006). Knowledge hiding is one of such factors which prove to create hinderance in effective knowledge management irrespective of the motivation perspective behind this hiding (Soral et al., 2022) and negatively influence productivity of workers. Similarly, toxic leadership is a direct cause of job stress among knowledge workers which potentially hinders their productivity (Zagross & Jamileh, 2016). Organizations seriously depend on effective knowledge management where knowledge sharing is encouraged at every workplace being vital part of knowledge management process but unfortunately, evidences of increasing knowledge hiding behaviors at workplaces across the globe can't be neglected (Pradhan et al., 2019; Connelly et al., 2012; Peng, 2013) which in return, results in several negative outcomes like decline in creativity (Bogilović et al., 2017), hampering transfer of existing knowledge and development of new knowledge (Černe et al., 2014), declined productivity (Zhao et al., 2019), deprived potential for learning and growth (Haas & Park, 2010), quality of decision making (Ghasemaghaei & Turel; 2021). In addition, Arain et al. (2020) claimed that unshared knowledge costs more than \$30 billion each year to the companies listed in Fortune 500 and contribution of knowledge hiding at workplaces in this loss cannot be ignored.

The Information Technology (IT) sector is one of the highest knowledge intensive sectors which needs efficient knowledge management by IT companies for their undoubted success. Unlike IT sectors in developed countries, IT sector in Pakistan is going through various reforms presently to reach the benchmarks. In recent news article published by The NEWS International (Hussain, 2022), it was claimed that the IT companies in Pakistan are moving ahead of brick-and-mortar mindset. Recently, the government of Pakistan has taken several initiatives to support IT companies working in Pakistan in terms for financial and non-financial benefits with a target to take IT exports to \$ 50 Billion in next 5 years that is not possible without effective knowledge management and focus on improving knowledge worker productivity (PITB, 2022). Managers working in organizations today have to operate in an uncertain, highly pressurized environments, therefore, positive working environment is a must in order to gain and sustain competitive advantage (Anand & Hassan, 2019). Toxic leadership as a form of destructive leadership in that context could work as a strong hurdle in positive working environment therefore it can potentially hamper the productivity of knowledge workers involved in knowledge management processes (Islam et al., 2021). To fill the exiting gap in literature, this study aims to identify the impact of dimensions of knowledge hiding that are evasive hiding, playing dumb and rationalized hiding, along with toxic leadership on knowledge management process and productivity of knowledge workers at IT Companies working in Pakistan. Moreover, it also focuses on studying the mediating role of knowledge worker ambidexterity between knowledge management process and knowledge worker productivity.

Hypotheses Development and Research Framework

Knowledge Hiding

Knowledge hiding is basically one of the Counterproductive Workplace Behaviors (CWB) which refers to an attempt of individuals to intentionally retain or hide knowledge from others when requested by them (Oliveira et al., 2021). The concept is different from lack of knowledge sharing as withholding knowledge through knowledge hiding is a hindrance in knowledge transfer that is always intentional and can be revealed through three different behaviors: evasive hiding, rationalized hiding and playing dumb.

Toxic Leadership

Available literature on the variable identifies toxic leadership as a multidimensional latent which covers a number of negative behaviours including bullying, narcissism, unfair treatment, abusive supervision, jealousy, incompetency (Magwenzi, 2018). However, for this study, operational definition of toxic leadership is followed from the study of Schmidt (2008) which includes self-promotion, abusive supervision, unpredictability and narcissism as components of toxic leadership.

Knowledge Management Process

Knowledge management can be termed as a tool to identify and influence the knowledge collectively available in the organizations (Barão et al., 2017). Literature available on knowledge management is related to identification, collection and dissemination of knowledge available in organizations (Jaleel et al., 2019). It also consists of seven steps as claimed by Latif et al., (2020) which included knowledge identification, knowledge creation, knowledge collection, organization, knowledge storage, dissemination of knowledge and application of knowledge.

Knowledge Worker Ambidexterity

Ambidexterity can be defined as the ability to refine and use existing knowledge as well as creating new knowledge at the same time. The two phenomena are termed as exploration and exploitation as stated by Turner et al., (2013). Moreover, Good and Michel (2013) defined it as “cognitive ability to flexibly adapt within a dynamic context by appropriately shifting between exploration and exploitation” (p. 5). Bledow et al. (2009) further added on to the existing definition as “an individual's ability to perform explorative and exploitative activities and integrate both kinds of activities toward successful innovation through self-regulation” (p. 18).

Knowledge Worker Productivity

According to Drucker (1999), Knowledge worker productivity refers to efficiency of knowledge workers to enhance knowledge works and form intellectual output which is also knowledge based. Sahibzada et al. (2020) defined the concept as ability of knowledge workers to boost their knowledge skills and then utilize them to build rational outcomes that help organizations improve their overall productivity, performance and gain competitive edge over others. Although

dimensions to measure productivity are different depending upon its nature and field in which the study is being conducted (Palvalin, 2017).

Knowledge Hiding and Knowledge Management Process

Organizations, on one hand, are trying to improve the knowledge sharing culture at their workplaces, however, on the other hand, employees are not always ready to indulge in knowledge sharing practices because of numerous reasons and this ultimately leads to hiding of knowledge (Anand et al., 2020). Despite of the identification of overall negative effects of knowledge hiding on individuals and organizations, evidence show an increase in knowledge hiding behaviors at workplaces (Offergelt et al., 2019). Simultaneously, the three dimensions of knowledge hiding (evasive hiding, playing dumb, & rationalized hiding) are found to have different antecedents and also variety in their impacts. Evasive hiding and playing dumb involve deception backed by the desire to raise status within the organization or to increase their importance and become requisite part of the workplace (Anand & Walsh, 2016; Zhao et al., 2016). However, rationalized hiding does not involve deception (Connelly et al., 2012) instead it is backed by positive intentions. Furthermore, Zhao et al. (2019) claimed the motivation to follow organizational norms and protect confidentiality of information as another reason behind rationalized hiding. Moreover, knowledge hiding can be voluntary, can be based on situations, contexts, or could be influenced by any of the internal or external motivational factors (Anand et al., 2019). Knowledge hiding could possibly interrupt this process of knowledge management resultantly reducing decision making capabilities based on incomplete information finally hampering productivity (Ghasemaghahi & Turel, 2021). Taking this argument to the next level, we asked: What if the three dimensions of knowledge hiding have different effects in this whole process? Building arguments on the prior literature, following relationships between dimensions of knowledge hiding and knowledge management, we hypothesize that:

H_{1a}: Evasive hiding has significant negative impact on Knowledge Management Process

H_{1b}: Playing dumb has significant negative impact on Knowledge Management Process

H_{1c}: Rationalized hiding has significant positive impact on Knowledge Management Process

Toxic Leadership and Knowledge Management Process

Previously, leadership was being explored on its positive aspects like different leadership styles, their effectiveness, but that was not enough. Recently, research has started to peek into the darker face of leadership (Snow et al., 2021). Among other darker areas of leadership, toxic leadership has emerged to be a prominent destructive leadership style which is defined as a style in which leader is engaged in multiple destructive behaviors that potentially could harm those who work under his leadership and resultants are ultimate drastic effects on the organization (Labrague et al., 2021; Webster et al., 2016). There are studies which cover individual perspective for negative outcomes of toxic leadership like lowered job satisfaction, employee silence, declined engagement, job stress, burnout, lowered job performance, emotions to withdraw from the job resultant in absenteeism and increased turnover (Hadadian & Sayadpour, 2018; Labrague, 2021; Örgöv & Demir, 2019). Baloyi (2020) claimed that such bad leaderships have the capacity to

abolish work atmosphere, demoralize team collaborations, and destroys skills of knowledge workers which are required for their productivity and organizational growth as a whole. It also destroys their cognitive abilities which are mandatory for information processing within their minds, consequently making them unfit for working in knowledge management. Therefore, toxic leadership could also hamper the knowledge management process at knowledge-intensive organizations if its negative individual and organizational outcomes have been proved in earlier studies. Based on these arguments, following hypothesis is tested in this study:

H₂: Toxic Leadership has significant negative impact on Knowledge Management Process

Knowledge Management Process and Knowledge Worker Productivity

The conceptual model creates a possible linkage between knowledge-based view of firm and theory of knowledge worker productivity. Knowledge-based view of firm confirms the strategic role of knowledge which is the most imperative asset in gaining sustainable competitive edge for the organizations (Côte-Real et al., 2017; Erickson & Rothberg, 2014), that further generates the argument that superior performance resides for those organizations which ensure efficient management of knowledge (Ghasemaghaei & Turel, 2021; Zack, 2009). In this context, employees are considered as the most important source of knowledge because knowledge resides within them, they know how to identify, collect, coordinate, store knowledge and then how to disseminate it among other colleagues and practically apply it while performing their tasks (Ghasemaghaei, 2019). Various studies have related the knowledge worker productivity with knowledge management at organizations to highlight their importance previously (Constantinescu, 2009; Iranzadeh & Pakdel Bonab, 2014) as it provides conducive environment for knowledge working (Kianto et al., 2016; Shujahat et al., 2017). Keeping in view the importance of Knowledge worker productivity as one of the major challenges, it needs to be studied on different dimensions as previously only one dimension for measuring productivity had been considered that is task efficiency (Haas & Hansen, 2007). Kianto et al., (2018) broke down knowledge worker productivity into three dimensions namely timeliness, task efficiency and job autonomy. Based on the literature support given above, following hypothesis is tested in this study:

H₃: Knowledge Management Process has significant relationship with Knowledge Worker Productivity

Mediating Role of Knowledge Worker Ambidexterity

It appears that there is limited literature available for study on knowledge worker ambidexterity as the concept is new in research and very limited number of studies exist (Mom et al., 2007). Ambidexterity was initially studied at top-level management (Lee & Lee, 2016), studied at organizational level (Rao & Thakur, 2019) however, researches on individual level are very minimal (Ortega et al., 2021). Some studies have focused on group interviews (Bonesso et al., 2014), some on managerial issues (Mom et al., 2015). However, behavioral characteristics of individual ambidexterity are yet to be discovered (Lee & Lee, 2016). Knowledge workers' ambidexterity can possibly play some mediating role between knowledge management process at organization and productivity of knowledge workers if organizational ambidexterity and

innovation ambidexterity are found to play mediating roles between different variables previously (Gibson & Birkinshaw, 2004; Zhang et al., 2016). Based on the argument, following hypothesis is tested in this study:

H4: Knowledge Worker Ambidexterity mediates the relationship between Knowledge Management Process and Knowledge Worker Productivity.

The complete research framework of this study is shown in Figure 1.

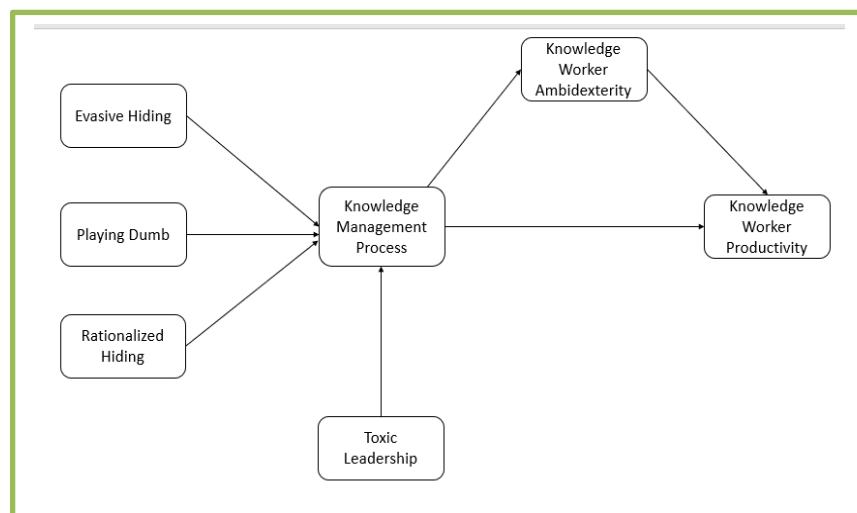


Figure 1. Research Model with Dimensions for Knowledge Hiding

Methodology

Population, Sample, and Data Collection

This study considers employees working as knowledge workers at various designations in IT based companies of Pakistan as its population. The population was unknown therefore, sampling technique suitable for data collection was convenience sampling. Data was collected using electronic means as well as physical distribution of hard copies of questionnaires among the employees working in public as well as private owned IT based Companies of four major cities of Pakistan, namely Islamabad, Rawalpindi, Lahore and Karachi. Many companies were international in nature having their main head offices in other countries and subbranches operating in Pakistan. Also, some of the companies were listed among top IT companies in Pakistan like Netsole, Systems Limited, United solutions, 10Pearls, Limited Liability Company (LLC) etc. Respondents were having different designations like engineers, developers, IT administrators, Project Managers and Chief Technology Officers (CTOs). A total of 650 questionnaires were distributed out of which 455 were received back making response rate of 70% and 50 surveys were discarded due to incomplete information bringing number of usable surveys to 405 and response rate to 62%. Demographics of respondents are given in Table 1.

Measures

This study has utilized a survey with a total of 69 items for measurement of latent variables adapted from existing literature. Slight changes were made in statements to make them more comprehensible for the respondents. Knowledge hiding is measured using items developed by Connelly et al., (2012) in his study based on certain interviews, which comprised of three dimensions namely evasive hiding, playing dumb and rationalized hiding having four items each. Furthermore, Toxic leadership is measured using 12 items scale in which three items were related to self-promotion, three items related to abusive supervision, three items related to unpredictability and three items related to Narcissism. The scale was shortened Version of Schmidt (2008) Toxic Leadership Scale. Moreover, Knowledge Management Process is measured using scale adapted from Masa'deh et al. (2017) with 28 items. Individual level knowledge worker ambidexterity is measured using the 10-items scale related to exploration and exploitation used by Affum-Osei et al. (2021). However, Knowledge Worker Productivity is measured using the seven items scale originally developed by Palvalin (2017). The measurement is done on 7-point scale for all constructs.

Table 1. Profile of Respondents

Demographic Variables	Frequency	Percentage
Gender		
Female	44	10.9
Male	361	89.1
Age		
25-30 years	315	77.8
31-35 years	57	14.1
36-40 years	25	6.2
41-50 years	8	2.0
Qualification		
Bachelors (14 years)	182	44.9
Masters (16 years)	189	46.7
BS Hons (16 years)	18	4.4
MS (18 Years)	16	4.0

Data Analysis and Results

For model assessment, data analysis and derivation of results, SmartPLS 3.3.7 was used which is one of the leading software tools for partial least squares structural equation modeling Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM, an emergent two-step modelling approach, is imperative to be used in business and social sciences studies in order to efficiently handle over sample sized and non-normal data (Hair et al., 2014).

Measurement Model Assessment

The measurement model assessment is based on the guidelines of Hair (2006) to affirm the reliability and validity of the constructs and their dimensions. All included 69 indicators were judged thoroughly, majority of items were having factor loadings greater than the suggested value of 0.60, however, some were having factor loading values below 0.60 but they were not removed from the analysis as their composite reliability was above acceptable value. Table 2 presents all the factor loadings, alpha coefficient, Composite Reliability (CR), and Average Variance Extracted (AVE). It can be seen that the Composite reliability for all variables is above 0.70 which is the minimum acceptable criteria, whereas, AVE for all variables is also above the suggested value i-e, 0.50 other than of knowledge worker ambidexterity which has AVE value of 0.474 that is almost close to 0.50 and could be considered adequate as the composite reliability for knowledge worker ambidexterity is greater than 0.70 (Lam, 2012). Hence, convergent validity and reliability for all constructs is confirmed. Similarly, Discriminant Validity is also established, exhibited in Table 3, as per the criterion advised by Fornell and Larcker (1981). Heterotrait-Monotrait Ratio of Correlations (HTMT) for variables is smaller than one which confirms establishment of discriminant validity (Henseler et al., 2015) as shown in Table 4. Finally, detailed model is shown in Figure 2.

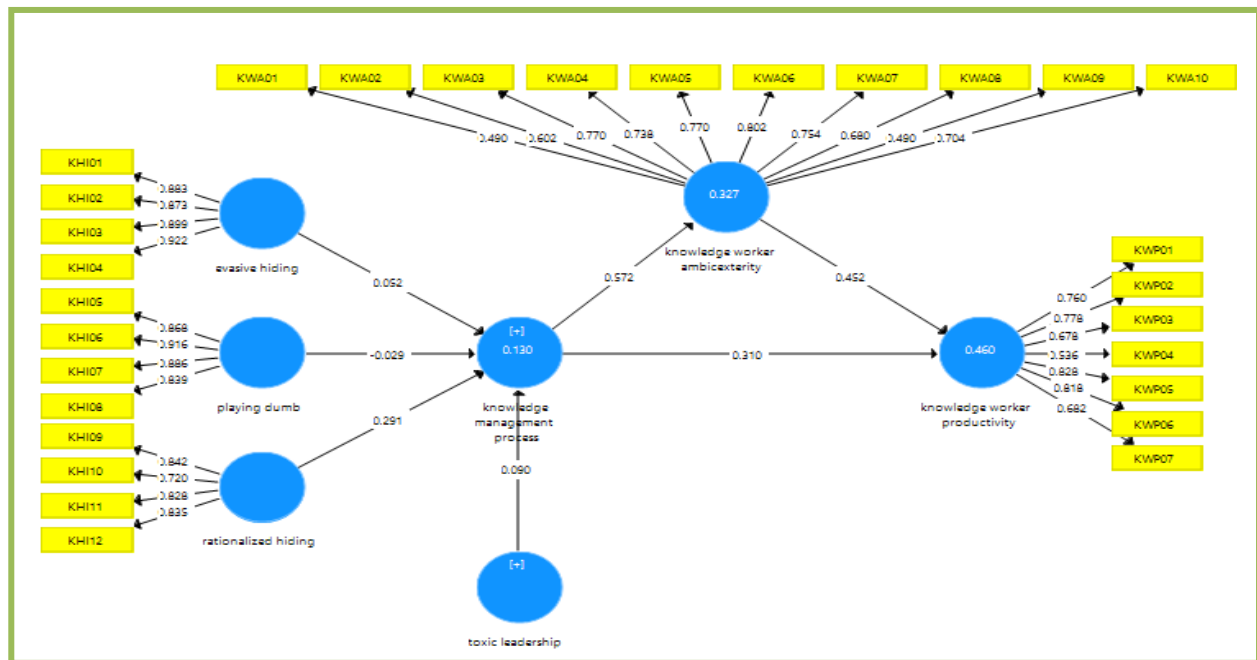


Figure 2. Measurement Model

Table 2. Item Loadings, Reliability, and Convergent Validity

	Loadings	Cronbach's Alpha	CR	(AVE)
Knowledge Hiding				
<i>Evasive hiding</i>		0.918	0.941	0.800
KHI01	0.883			
KHI02	0.873			
KHI03	0.899			
KHI04	0.922			
<i>Playing Dumb</i>		0.902	0.931	0.770
KHI05	0.868			
KHI06	0.916			
KHI07	0.886			
KHI08	0.839			
<i>Rationalized Hiding</i>		0.826	0.882	0.653
KHI09	0.842			
KHI10	0.720			
KHI11	0.828			
KHI12	0.835			
Toxic Leadership				
TL01	0.665	0.943	0.949	0.611
TL02	0.794			
TL03	0.753			
TL04	0.786			
TL05	0.818			
TL06	0.806			
TL07	0.822			
TL08	0.802			
TL09	0.802			
TL10	0.731			
TL11	0.749			
TL12	0.833			
Knowledge Management Process				
<i>Knowledge Identification</i>		0.969	0.971	0.550
KI01	0.751			
KI02	0.743			
KI03	0.738			
KI04	0.786			
<i>Knowledge Creation</i>				
KC01	0.804			
KC02	0.729			
KC03	0.773			
KC04	0.785			
<i>Knowledge Collection</i>				
KL01	0.754			
KL02	0.747			
KL03	0.762			
KL04	0.703			
<i>Knowledge Organization</i>				
KO01	0.766			
KO02	0.766			
KO03	0.754			
KO04	0.769			
<i>Knowledge Storage</i>				

	Loadings	Cronbach's Alpha	CR	(AVE)
KS01	0.794			
KS02	0.690			
KS03	0.587			
KS04	0.594			
Knowledge Dissemination				
KD01	0.729			
KD02	0.653			
KD03	0.675			
KD04	0.768			
Knowledge Application				
KA01	0.807			
KA02	0.740			
KA03	0.785			
KA04	0.762			
Knowledge Worker Ambidexterity		0.876	0.898	0.474
KWA01	0.490			
KWA02	0.602			
KWA03	0.770			
KWA04	0.738			
KWA05	0.770			
KWA06	0.802			
KWA07	0.754			
KWA08	0.680			
KWA09	0.490			
KWA10	0.704			
Knowledge Worker Productivity		0.852	0.888	0.536
KWP01	0.760			
KWP02	0.778			
KWP03	0.678			
KWP04	0.536			
KWP05	0.828			
KWP06	0.818			
KWP07	0.682			

Table 3. Discriminant Validity (Fornell-Larcker Criterion)

	EH	KMP	KWA	KWP	PD	RH	TL
Evasive Hiding (EH)	0.894						
Knowledge Management Process (KMP)	0.283	0.742					
Knowledge Worker Ambidexterity (KWA)	0.137	0.572	0.689				
Knowledge Worker Productivity (KWP)	-0.044	0.568	0.629	0.732			
Playing Dumb (PD)	0.848	0.298	0.133	-0.094	0.878		
Rationalized Hiding (RH)	0.726	0.350	0.201	0.063	0.801	0.808	
Toxic Leadership (TL)	0.500	0.244	0.235	0.162	0.563	0.498	0.781

Table 4. HTMT Ratio

	EH	KMP	KWA	KWP	PD	RH	TL
Evasive Hiding (EH)							
Knowledge Management Process (KMP)	0.300						
Knowledge Worker Ambidexterity (KWA)	0.280	0.588					
Knowledge Worker Productivity (KWP)	0.151	0.608	0.673				
Playing Dumb (PD)	0.946	0.316	0.293	0.189			
Rationalized Hiding (RH)	0.860	0.376	0.317	0.201	0.948		
Toxic Leadership (TL)	0.565	0.256	0.305	0.232	0.636	0.564	

Structural Model Assessment

The SmartPLS Bootstrapping was run at 10,000 subsamples to conduct hypotheses testing. The complete structural model is shown in Figure 3. Moreover, Table 5 shows Path-coefficients, Standard deviation and p-values. However, values of R square show that 13% change in knowledge management process, 32 percent change in knowledge worker ambidexterity and 46% change in knowledge worker productivity is explained due to exogenous variables in the study. The variances explained are considered adequate as they are greater than 0.10 or 10 percent as claimed by Falk and Miller (1992). According to Cohen (1988), the value is moderate for knowledge management process and substantial for knowledge worker ambidexterity and knowledge worker productivity. The relationship between evasive hiding and knowledge management process is found to be insignificant ($\beta = 0.052$, p-value = 0.61), also playing dumb is found to have insignificant relationship with knowledge management process ($\beta = -0.029$, p-value = 0.805). However, rationalized hiding has significant positive relationship with knowledge management process ($\beta = 0.291$, p-value = 0.001). Furthermore, toxic leadership at workplace does not have any significant impact on knowledge management process ($\beta = 0.090$, p-value = 0.114). Knowledge management process is found to have significantly positive relationship with knowledge worker productivity as expected ($\beta = 0.310$, p-value < 0.0001). Also, knowledge management process is found to have significant and positive relationship with knowledge worker ambidexterity ($\beta = 0.572$, p-value < 0.0001). Finally, knowledge worker ambidexterity is found to have significant impact on knowledge worker productivity ($\beta = 0.452$, p-value < 0.0001).

Table 5. Path-coefficients, Standard Deviation and p-values

Path	β Coefficient	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P- Values
evasive hiding -> knowledge management process	0.052	0.102	0.509	0.611
playing dumb -> knowledge management process	-0.029	0.117	0.246	0.805
rationalized hiding -> knowledge management process	0.291	0.091	3.200	0.001
toxic leadership -> knowledge management process	0.090	0.057	1.579	0.114
knowledge management process -> knowledge worker productivity	0.310	0.042	7.463	0.000
knowledge management process -> knowledge worker ambidexterity	0.572	0.039	14.543	0.000
knowledge worker ambidexterity -> knowledge worker productivity	0.452	0.041	11.014	0.000

Mediation Analysis

Mediation analysis was performed to assess the mediating role of knowledge worker ambidexterity on the linkage between knowledge management process and knowledge worker productivity. The results (Table 7) revealed that the total effect of knowledge management process on knowledge worker productivity was significant ($\beta = 0.568$, $p\text{-value} < 0.0001$). With the inclusion of mediator (knowledge worker ambidexterity), the impact of knowledge management process on knowledge worker productivity still remained significant ($\beta = 0.310$, $p\text{-value} < 0.0001$). The indirect effect of knowledge management process on knowledge worker productivity through knowledge worker ambidexterity was also found significant ($\beta = 0.258$, $p\text{-value} < 0.0001$). This shows that the relationship between knowledge management process and knowledge worker productivity is partially mediated by knowledge worker ambidexterity.

Table 7 Mediation Results

Total Effect (knowledge management process->knowledge worker productivity)		Direct Effect (knowledge management process->knowledge worker productivity)		Indirect effects of knowledge management process on knowledge worker productivity H4: (knowledge management process->knowledge worker ambidexterity->knowledge worker productivity)				
Coefficient	P-value	Coefficient	P-value	Coefficient	SD	T value	P value	BI (2.5%; 97.5%)
0.568	0.000	0.310	0.000	0.258	0.031	8.339	0.000	0.226; 0.391

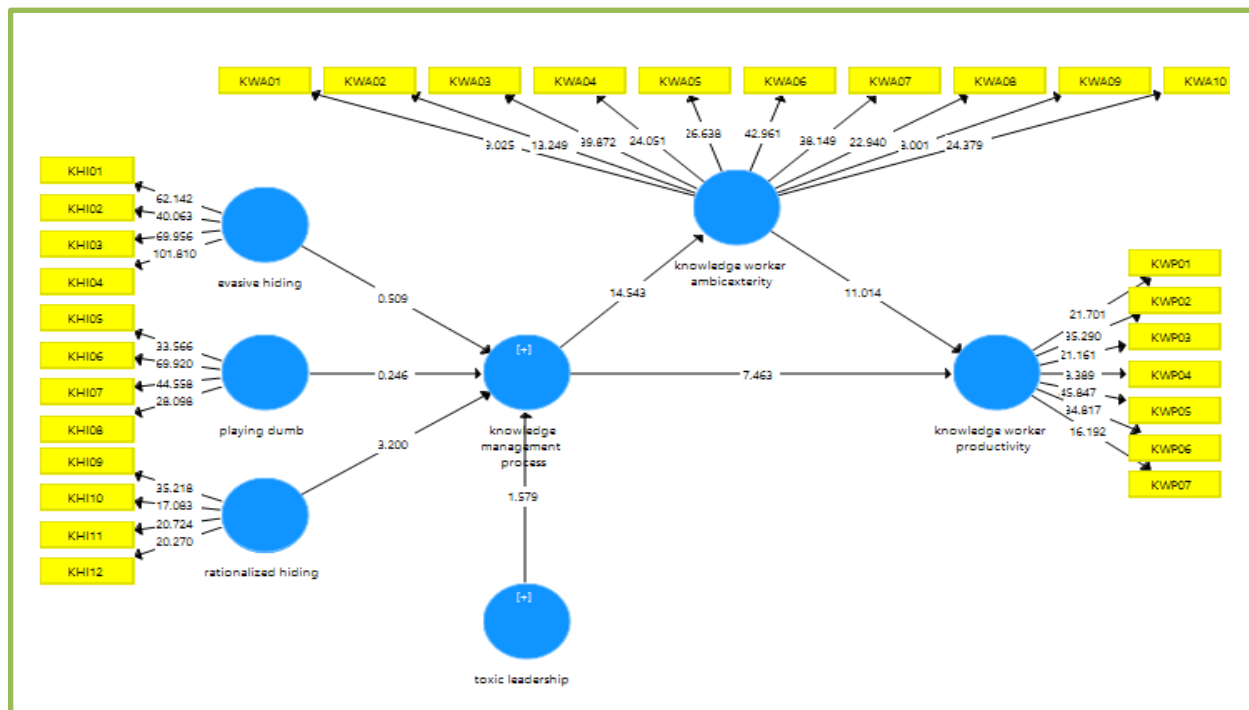


Figure 3. Structural Model Results

Discussion

Studying knowledge hiding is quite novel and difficult simultaneously as organizations are facing knowledge hiding as an increased trend besides realizing its negative consequences. Various studies have revealed interesting facts about variety in antecedents and outcomes for different dimensions of knowledge hiding (Khoreva & Wechtler, 2019). This study intended to test the impact of evasive hiding, playing dumb and rationalized hiding as dimensions of knowledge hiding on knowledge management process and knowledge worker productivity. It also tested the impact of toxic leadership as barrier to knowledge management process and knowledge worker productivity. Lastly, it tried to study the mediating role of knowledge worker ambidexterity between knowledge management process and knowledge worker productivity. This section entails detailed discussion on findings regarding the hypotheses one by one.

First hypothesis was consisting of three sub-hypotheses in which evasive hiding, playing dumb and rationalized hiding were taken as dimensions of knowledge hiding separately and their impact on knowledge management process at IT companies working in Pakistan. Findings of the study show that evasive hiding and playing dumb have no significant impact on knowledge management process which is backed by the argument that employees serving in IT based companies are not indulged in evasive hiding and playing dumb at their workplaces. It is clear that task interdependence makes people share more knowledge and less likely to be involved in hiding (Gagné et al., 2019). They are clearly aware of the importance of effective information sharing and knowledge management at their workplaces to gain competitive advantage over other companies as IT sector is one of the highest knowledge intensive sectors. It means knowledge workers at IT companies avoid deceiving their coworkers and colleagues through evasive hiding and playing dumb. However, rationalized hiding is found to have significantly positive impact on knowledge management processes which is aligned with the findings of previous studies (Zhao et al., 2019). Protection of confidential information or following organizational norms can be possible motivations behind rationalized hiding which is communicated to the information seeker as rationale for hiding. This in return creates environment of goodwill and the knowledge hider is perceived to be an honest person also supported by social identity theory (He et al., 2021).

Second hypothesis tested the impact of toxic leadership which is a destructive form of leadership on knowledge management process which was found to be insignificant in this study because managers leading knowledge workers avoid using destructive leadership styles as they know bad leaderships are unfit for knowledge management as it destroys cognitive capabilities of their employees as claimed by Baloyi (2020). It is found that IT companies are having a different working atmosphere as they are highly knowledge intensive, knowledge workers have to use their cognitive skills at full to complete their tasks and their manager has to let them work as per their own comfort zones if he has to get the best out of them in terms of their creativity, productivity and growth. Moreover, general discussions with knowledge workers serving IT firms also confirmed the above stated arguments for absence of toxic leadership in Pakistani IT firms as the most suitably prevailing leadership style for IT sector is transformational leadership which focuses on creating environment that supports innovation for adapting to the market needs and provide extraordinary products and services to the customers.

Third hypothesis was supported as knowledge management process had significant relationship with productivity of knowledge workers which was in line with previous findings in different contexts (Kianto et al., 2018; Sahibzada et al., 2021). Lastly, knowledge worker ambidexterity was found playing mediating role between knowledge management process and knowledge worker productivity. Previously, Zhang et al. (2016) found innovation ambidexterity to play mediating role between interaction of entrepreneurial orientation and capability based Human Resource Management (HRM), and firm performance. Whereas, organizational ambidexterity was found to play mediating role between organizational contextual features and its performance (Gibson & Birkinshaw, 2004), institutional pressures and environmental performance in global automotive industry (Lin & Ho, 2016), dynamic capabilities and firm competitive advantage (Jurksiene & Pundziene, 2016). In addition, Al-Atwi et al. (2021) found learning ambidexterity to play mediating role between organizing paradox and organizational creativity.

Theoretical Contribution

This study adds on to the literature regarding variables under study and provides literature base to future researchers. He et al., (2021) provided a review of article available on knowledge hiding from a period of 2012 to 2020, which showed that it has not been studied earlier with knowledge management process and knowledge worker productivity as independent variable so this is the first contribution of this study. Moreover, the revelation of difference in influence of knowledge hiding dimensions on knowledge management processes and knowledge worker productivity is another remarkable contribution. Previously, leadership styles have been studied in relation to knowledge management (Nikpey Motlag Bonab et al., 2022) but impact of toxic leadership has not been studied individually to the best of author's knowledge. Therefore, this also adds on as a contribution to literature on toxic leadership and knowledge management process and knowledge worker productivity. Another contribution of this study is that it introduced knowledge worker ambidexterity as an important concept and used it as mediator for the first time whereas, previously other forms of ambidexterity were used as mediators. Finally, numerous researchers have focused on the role of information technology in knowledge management in other areas, however, IT sectors being one highly knowledge intensive sector involves huge flow and processing of knowledge is neglected to the best of author's knowledge.

Practical Implications

Currently, the economy has become knowledge based economy, therefore, knowledge at organizations needs to be managed effectively and proficiently to maintain competitive edge over others. Management should take appropriate measures to avoid evasive hiding and playing dumb by encouraging knowledge sharing and increasing task interdependence. Rationalized hiding should be studied deeply to identify its antecedents, positive intentions backing rationalized hiding would give positive results depending upon the nature of rationale. Also, IT companies should ensure the appropriate use of leadership style by the manager, if in any case, employees are threatened by toxic leadership, coping measures should be incorporated at earliest. Furthermore, improving knowledge management process at workplace would help improving productivity of knowledge workers. In addition, Companies need to work on increasing opportunities for knowledge workers

to exercise ambidexterity in the best possible way, that would help them utilize their existing skills as well as explore new knowledge and skills that ultimately would result in increased productivity of employees.

Limitations and Future Recommendations

Major limitation was time constraint and availability of resources for data collection. This study only has considered IT companies working in Pakistan, however, the results could be different for other countries due to contextual differences. Future studies could focus on comparative studies between different countries depending upon their degree of development. There could be a comparative analysis of Chinese and Pakistani studies as major number of published studies belongs to these two countries (He et al., 2021). Also, mixed methods can be utilized for data collection to get more precision in results and robustness in conclusions. Further, the dimensions of knowledge hiding should be studied separately with respect to their antecedents and consequences. The impact could be studied on individual, teams and organizational level. Integration of cultural, organizational and sectoral factors could be another possible future recommendation. Toxic leadership is found to have no significant impact on knowledge management process in this study but it can possibly be studied as an antecedent to knowledge hiding. Moreover, it can be considered as mediator between knowledge hiding and knowledge management processes in future studies.

Conclusion

This study provides insight for existence of rationalized hiding in knowledge workers serving IT Companies and its positive nature determines its positive impact in terms of increased productivity. It also enlightens absence of evasive hiding and playing dumb, the dimensions of knowledge hiding which involve deception. Moreover, employees working in IT sector are not facing any threats by toxic leadership of their managers which is a positive aspect worth sharing. Knowledge management processes at IT firms are well developed which enhances productivity of knowledge workers directly as well as through partial mediation of knowledge worker ambidexterity.

References

- Affum-Osei, E., Antwi, C. O., Abdul-Nasiru, I., Asante, E. A., Aboagye, M. O., & Forkouh, S. K. (2021). Career adapt-abilities scale in Ghana: Psychometric properties and associations with individual-level ambidexterity and employees' service performance. *Current Psychology*, 40(9), 4647-4662.
- Al-Atwi, A. A., Amankwah-Amoah, J., & Khan, Z. (2021). Micro-foundations of organizational design and sustainability: The mediating role of learning ambidexterity. *International Business Review*, 30(1), 101656.
- Anand, P., & Hassan, Y. (2019). Knowledge hiding in organizations: Everything that managers need to know. *Development and Learning in Organizations: An International Journal*, 33(6), 12-15. <https://doi.org/10.1108/DLO-12-2018-0158>

- Anand, A., & Walsh, I. (2016). Should knowledge be shared generously? Tracing insights from past to present and describing a model. *Journal of Knowledge Management*, 20(4), 713-730. <https://doi.org/10.1108/JKM-10-2015-0401>
- Anand, A., Centobelli, P., & Cerchione, R. (2020). Why should I share knowledge with others? A review-based framework on events leading to knowledge hiding. *Journal of Organizational Change Management*, 33(2), 379–399. <https://doi.org/10.1108/JOCM-06-2019-0174>
- Arain, G. A., Bhatti, Z. A., Ashraf, N., & Fang, Y. H. (2020). Top-down knowledge hiding in organizations: an empirical study of the consequences of supervisor knowledge hiding among local and foreign workers in the Middle East. *Journal of Business Ethics*, 164(3), 611-625. <https://doi.org/10.1007/s10551-018-4056-2>
- Baloyi, G. T. (2020). Toxicity of leadership and its impact on employees: Exploring the dynamics of leadership in an academic setting. *HTS Teologiese Studies/Theological Studies*, 76(2).
- Barão, A., de Vasconcelos, J. B., Rocha, Á., & Pereira, R. (2017). A knowledge management approach to capture organizational learning networks. *International Journal of Information Management*, 37(6), 735-740. <https://doi.org/10.1016/j.ijinfomgt.2017.07.013>
- Bledow, R., Frese, M., Anderson, N., Erez, M., & Farr, J. (2009). A dialectic perspective on innovation: Conflicting demands, multiple pathways, and ambidexterity. *Industrial and Organizational Psychology*, 2(3), 305-337. <https://doi.org/10.1111/j.1754-9434.2009.01154.x>
- Bogilović, S., Černe, M., & Škerlavaj, M. (2017). Hiding behind a mask? Cultural intelligence, knowledge hiding, and individual and team creativity. *European Journal of Work and Organizational Psychology*, 26(5), 710-723. <https://doi.org/10.1080/1359432X.2017.1337747>
- Bonesso, S., Gerli, F., & Scapolan, A. (2014). The individual side of ambidexterity: Do individuals' perceptions match actual behaviors in reconciling the exploration and exploitation trade-off? *European Management Journal*, 32(3), 392-405. <https://doi.org/10.1016/j.emj.2013.07.003>
- Cabrera, A., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *The International Journal of Human Resource Management*, 17(2), 245-264. <https://doi.org/10.1080/09585190500404614>
- Černe, M., Nerstad, C. G., Dysvik, A., & Škerlavaj, M. (2014). What goes around comes around: Knowledge hiding, perceived motivational climate, and creativity. *Academy of Management Journal*, 57(1), 172-192. <https://doi.org/10.5465/amj.2012.0122>
- Cohen, J. (1988). The analysis of variance and covariance. Statistical power analysis for the behavioural sciences. <https://doi.org/10.4324/9780203771587>

- Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of Management Journal*, 49(3), 544-560. <https://doi.org/10.5465/AMJ.2006.21794671>
- Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations. *Journal of organizational behavior*, 33(1), 64-88. <https://doi.org/10.1002/job.737>
- Constantinescu, M. (2009). Knowledge management: Focus on innovation and labor productivity in a knowledge-based economy. *IUP Journal of Knowledge Management*, 7(1), 7-33.
- Côte-Real, N., Oliveira, T., & Ruivo, P. (2017). Assessing business value of big data analytics in European firms. *Journal of Business Research*, 70(C), 379-390. <https://doi.org/10.1016/j.jbusres.2016.08.011>
- Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge. *California Management Review*, 41(2), 79-94. <https://doi.org/10.2307/41165987>
- Erickson, G. S., & Rothberg, H. N. (2014). Strategic innovation and sustainable competitive advantage: Understanding knowledge assets. *Proceedings of the International Society for Professional Innovation Management (ISPIM)*.
- Falk, R. F., & Miller, N. B. (1992). A primer for soft modeling. *University of Akron Press*.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.2307/3151312>
- Gagné, M., Tian, A. W., Soo, C., Zhang, B., Ho, K. S. B., & Hosszu, K. (2019). Different motivations for knowledge sharing and hiding: The role of motivating work design. *Journal of Organizational Behavior*, 40(7), 783-799. <https://doi.org/10.1002/job.2364>
- Ghasemaghaei, M. (2019). Does data analytics use improve firm decision making quality? The role of knowledge sharing and data analytics competency. *Decision Support Systems*, 120, 14-24. <https://doi.org/10.1016/j.dss.2019.03.004>
- Ghasemaghaei, M., & Turel, O. (2021). Possible negative effects of big data on decision quality in firms: The role of knowledge hiding behaviours. *Information Systems Journal*, 31(2), 268-293. <https://doi.org/10.1111/isj.12310>
- Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal*, 47(2), 209-226. <https://doi.org/10.2307/20159573>
- Good, D., & Michel, E. J. (2013). Individual ambidexterity: Exploring and exploiting in dynamic contexts. *The Journal of Psychology*, 147(5), 435-453. <https://doi.org/10.1080/00223980.2012.710663>

- Haas, M. R., & Hansen, M. T. (2007). Different knowledge, different benefits: Toward a productivity perspective on knowledge sharing in organizations. *Strategic Management Journal*, 28(11), 1133-1153.
- Haas, M. R., & Park, S. (2010). To share or not to share? Professional norms, reference groups, and information withholding among life scientists. *Organization Science*, 21(4), 873-891.
- Hadadian, Z., & Sayadpour, Z. (2018). Relationship between toxic leadership and job-related affective well-being: The mediating role of job stress. *European Online Journal of Natural and Social Sciences: Proceedings*, 7(1s), 137-145.
- Hair, J. F. (2006). Successful strategies for teaching multivariate statistics. *Proceedings of the 7th International Conference on Teaching Statistics* (pp. 1-5).
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2), 106-121. <https://doi.org/10.1108/EBR-10-2013-0128>
- He, P., Jiang, C., Xu, Z., & Shen, C. (2021). Knowledge hiding: current research status and future research directions. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.748237>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hussain, B. (2022, March 4). *IT exporters cheer tax immunity, hope to fetch \$50bn in 5-6 years*. The news. <https://www.thenews.com.pk/print/938370-it-exporters-cheer-tax-immunity-hope-to-fetch-50bn-in-5-6-years>
- Iranzadeh, S., & Pakdel Bonab, M. (2014). Investigating the role of knowledge management implementation in labor productivity in Islamic Azad University Tabriz Branch. *The Journal of Productivity Management*, 8(1), 51-74.
- Islam, T., Ahmed, I., Usman, A., & Ali, M. (2021). Abusive supervision and knowledge hiding: The moderating roles of future orientation and Islamic work ethics. *Management Research Review*.
- Jaleel, F., Daim, T., & Giadedi, A. (2019). Exploring the impact of knowledge management (KM) best practices for project management maturity models on the project management capability of organizations. *International Journal of Management Science and Engineering Management*, 14(1), 47-52. <https://doi.org/10.1080/17509653.2018.1483780>
- Jurksiene, L., & Pundziene, A. (2016). The relationship between dynamic capabilities and firm competitive advantage: The mediating role of organizational ambidexterity. *European Business Review*, 28(4), 431-448. <https://doi.org/10.1108/EBR-09-2015-0088>

- Khoreva, V., & Wechtler, H. (2020). Exploring the consequences of knowledge hiding: An agency theory perspective. *Journal of Managerial Psychology*, 35(2), 71-84. <https://doi.org/10.1108/JMP-11-2018-0514>
- Kianto, A., Shujahat, M., Hussain, S., Nawaz, F., & Ali, M. (2018). The impact of knowledge management on knowledge worker productivity. *Baltic Journal of Management*, 14(2), 178-197. <https://doi.org/10.1108/BJM-12-2017-0404>
- Kianto, A., Vanhala, M., & Heilmann, P. (2016). The impact of knowledge management on job satisfaction. *Journal of Knowledge Management*, 20(4), 621-636. <https://doi.org/10.1108/JKM-10-2015-0398>
- Labrague, L. J. (2021). Influence of nurse managers' toxic leadership behaviours on nurse-reported adverse events and quality of care. *Journal of Nursing Management*, 29(4), 855-863. <https://doi.org/10.1111/jonm.13228>
- Labrague, L. J., Lorica, J., Nwafor, C. E., & Cummings, G. G. (2021). Predictors of toxic leadership behaviour among nurse managers: A cross-sectional study. *Journal of Nursing Management*, 29(2), 165-176. <https://doi.org/10.1111/jonm.13130>
- Lam, S. (2012). Comparison of age-derived lens thickness to optically measured lens thickness in IOL power calculation: a clinical study. *Journal of Refractive Surgery*, 28(2), 154-155. <https://doi.org/10.3928/1081597X-20111209-01>
- Latif, K. F., Afzal, O., Saqib, A., Sahibzada, U. F., & Alam, W. (2020). Direct and configurational paths of knowledge-oriented leadership, entrepreneurial orientation, and knowledge management processes to project success. *Journal of Intellectual Capital*, 22(1), 149-170. <https://doi.org/10.1108/JIC-09-2019-0228>
- Lee, Y. J., & Lee, J. H. (2016). Knowledge workers' ambidexterity: conceptual separation of competencies and behavioural dispositions. *Asian Journal of Technology Innovation*, 24(1), 22-40. <https://doi.org/10.1080/19761597.2016.1151365>
- Lin, L. H., & Ho, Y. L. (2016). Institutional pressures and environmental performance in the global automotive industry: the mediating role of organizational ambidexterity. *Long Range Planning*, 49(6), 764-775. <https://doi.org/10.1016/J.LRP.2015.12.010>
- Magwenzi, B. V. (2018). The toxic triangle: Exploring toxic leadership in nursing administration-a phenomenological study. Still University of Health Sciences.
- Mom, T. J., Fourné, S. P., & Jansen, J. J. (2015). Managers' work experience, ambidexterity, and performance: The contingency role of the work context. *Human Resource Management*, 54(S1), s133-s153. <https://doi.org/10.1002/hrm.21663>
- Mom, T. J., Van Den Bosch, F. A., & Volberda, H. W. (2007). Investigating managers' exploration and exploitation activities: The influence of top-down, bottom-up, and horizontal knowledge inflows. *Journal of Management Studies*, 44(6), 910-931. <https://doi.org/10.1111/j.1467-6486.2007.00697.x>

- Nikpey Motlag Bonab, E., Sepasi, H., Nourbakhsh, P., & Noorbakhsh, M. (2022). Designing a causal model of the relationship between leadership styles and knowledge management of employees and information technology acceptance as a mediator. *Communication Management in Sport Media*, 9(2).
- Obeidat, B. Y., Tarhini, A., Masa'deh, R. E., & Aqqad, N. O. (2017). The impact of intellectual capital on innovation via the mediating role of knowledge management: A structural equation modelling approach. *International Journal of Knowledge Management Studies*, 8(3-4), 273-298. <https://doi.org/10.1504/IJKMS.2017.087071>
- Offergelt, F., Spörrle, M., Moser, K., & Shaw, J. D. (2019). Leader-signaled knowledge hiding: Effects on employees' job attitudes and empowerment. *Journal of Organizational Behavior*, 40(7), 819-833. <https://doi.org/10.1002/job.2343>
- Oliveira, M., Curado, C., & de Garcia, P. S. (2021). Knowledge hiding and knowledge hoarding: A systematic literature review. *Knowledge and Process Management*, 28(3), 277-294. <https://doi.org/10.1002/kpm.1671>
- Örgev, C., & Demir, H. (2019). Toxic leadership in a public university hospital. *Journal of International Health Sciences and Management*, 5(8), 48-63.
- Palvalin, M. (2017). How to measure impacts of work environment changes on knowledge work productivity—validation and improvement of the SmartWoW tool. *Measuring Business Excellence*, 21(2), 175-190. <https://doi.org/10.1108/MBE-05-2016-0025>
- Peng, H. (2013). Why and when do people hide knowledge? *Journal of Knowledge Management*, 17(3), 398-415. <https://doi.org/10.1108/JKM-12-2012-0380>
- Pertusa-Ortega, E. M., Molina-Azorín, J. F., Tarí, J. J., Pereira-Moliner, J., & López-Gamero, M. D. (2021). The microfoundations of organizational ambidexterity: A systematic review of individual ambidexterity through a multilevel framework. *Business Research Quarterly*, 24(4), 355-371. <https://doi.org/10.1177/2340944420929711>
- Pradhan, S., Srivastava, A., & Mishra, D. K. (2019). Abusive supervision and knowledge hiding: the mediating role of psychological contract violation and supervisor directed aggression. *Journal of Knowledge Management*, 24(2), 216-234. <https://doi.org/10.1108/JKM-05-2019-0248>
- Rao, I., & Thakur, P. (2019). Knowledge workers, organisational ambidexterity and sustainability: A conceptual framework. *International Journal of Business Excellence*, 19(3), 415-428.
- Sahibzada, U. F., Jianfeng, C., Latif, K. F., Shafait, Z., & Sahibzada, H. F. (2020). Interpreting the impact of knowledge management processes on organizational performance in Chinese higher education: Mediating role of knowledge worker productivity. *Studies in Higher Education*, 47(4), 713-730. <https://doi.org/10.1080/03075079.2020.1793930>
- Schmidt, A. A. (2008). *Development and validation of the toxic leadership scale*. University of Maryland, College Park.

- Shujahat, M., Hussain, S., Javed, S., Malik, M. I., Thurasamy, R., & Ali, J. (2017). Strategic management model with lens of knowledge management and competitive intelligence: A review approach. *VINE Journal of Information and Knowledge Management Systems*, 47(1), 55-93. <https://doi.org/10.1108/VJKMS-06-2016-0035>
- Snow, N., Hickey, N., Blom, N., Mahony, L. O., & Mannix-McNamara, P. (2021). An exploration of leadership in post-primary schools: The emergence of toxic leadership. *Societies*, 11(2), 54. <https://doi.org/10.3390/soc11020054>
- Soral, P., Pati, S. P., & Kakani, R. K. (2022). Knowledge hiding as a coping response to the supervisors' dark triad of personality: A protection motivation theory perspective. *Journal of Business Research*, 142, 1077-1091. <https://doi.org/10.1016/j.jbusres.2021.12.075>
- The government of Pakistan announces historic incentives for IT sector. PITB. (2022, March 1). <https://pitb.gov.pk/node/8076>
- Turner, N., Swart, J., & Maylor, H. (2013). Mechanisms for managing ambidexterity: A review and research agenda. *International Journal of Management Reviews*, 15(3), 317-332. <https://doi.org/10.1111/j.1468-2370.2012.00343.x>
- Webster, V., Brough, P., & Daly, K. (2016). Fight, flight or freeze: Common responses for follower coping with toxic leadership. *Stress and Health*, 32(4), 346-354. <https://doi.org/10.1002/smi.2626>
- Yeh, Y. J., Lai, S. Q., & Ho, C. T. (2006). Knowledge management enablers: a case study. *Industrial Management & Data Systems*, 106(6), 793-810. <https://doi.org/10.1108/02635570610671489>
- Zack, M., McKeen, J., & Singh, S. (2009). Knowledge management and organizational performance: An exploratory analysis. *Journal of Knowledge Management*, 13(6), 392-409. <https://doi.org/10.1108/13673270910997088>
- Zagross, H. & Jamileh, Z. (2016). Relationship between toxic leadership and stress of knowledge workers. *Studies in Business and Economics*, 11(3), 84-89. <https://doi.org/10.1515/sbe-2016-0037>
- Zhang, J. A., Edgar, F., Geare, A., & O'Kane, C. (2016). The interactive effects of entrepreneurial orientation and capability-based HRM on firm performance: The mediating role of innovation ambidexterity. *Industrial Marketing Management*, 59, 131-143. <https://doi.org/10.1016/j.indmarman.2016.02.018>
- Zhao, H., Liu, W., Li, J., & Yu, X. (2019). Leader-member exchange, organizational identification, and knowledge hiding: The moderating role of relative leader-member exchange. *Journal of Organizational Behavior*, 40(7), 834-848. <https://doi.org/10.1002/job.2359>
- Zhao, H., Xia, Q., He, P., Sheard, G., & Wan, P. (2016). Workplace ostracism and knowledge hiding in service organizations. *International Journal of Hospitality Management*, 59, 84-94. <https://doi.org/10.1016/j.ijhm.2016.09.009>

Authors Biographies

Sameen Khalid is a Ph.D. scholar in the field of Business Administration at Southwest Jiaotong University, China. She is currently serving as permanent faculty member at COMSATS University Islamabad, Pakistan since 2016. She previously obtained her MS degree in Management Sciences from COMSATS University Islamabad and MBA degree specialized in Human Resource Management with Campus Gold Medal and Institute Gold Medal from COMSATS Institute of Information Technology, Attock Campus. She has published one scholarly article in Applied Research in Quality of Life along with two conference papers presented in South Asian International Conference, 2015 and South Asian International Conference, 2016.



Yiyuan Li is an Assistant Professor at School of Economics and Management, Southwest Jiaotong University, China. She received a Ph.D. in psychology from Southwest University in 2013, and started working at Southwest Jiaotong University in the same year. Her research interests include human altruism, emotional decision-making and organizational behavior.



Khawaja Fawad Latif is an Assistant Professor, Department of Management Sciences has a Masters in Human Resource Management and a PhD. in Management Sciences. Major Area of Phd. was Internal Service Quality. Areas of interest include Corporate Social Responsibility, Internal Marketing, and Leadership. Research primarily focuses on instrument design, development, and systematic reviews.



Chunyong Tang is a Professor at School of Economics and Management, Southwest Jiaotong University, China. Her research interests include labor relations management, organizational behavior and human resource management.

