

Investigating the Antecedents of Knowledge Hiding and Reciprocation of Knowledge Hiding Behavior

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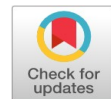
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Abstract: In current research stream, empirical work regarding knowledge hiding and reciprocal of knowledge hiding along their dimensions is sparse. This study aims to partially fill this void by investigating the antecedents of knowledge hiding behavior i.e. social interaction ties, organizational knowledge culture and dimensions of self-referred fear (fear of losing face, fear of losing power and fear of isolation) on knowledge hiding. Further reciprocal of knowledge hiding was also investigated as an outcome of knowledge hiding. This research deployed quantitative research method. Data was collected through questionnaire from 277 employees working in 3 different companies across telecommunication sector located in Sargodha region (Pakistan). The proposed model was tested through linear regression analyses. The results depict that organizational knowledge culture has significant negative impact on knowledge hiding behavior. In addition, the other antecedents fear of losing face, fear of losing power and fear of isolation has significant positive impact on knowledge hiding behavior. Further, social interaction ties have significant negative impact on knowledge hiding behavior. This research extends current knowledge management literature by specifically focusing some of the important antecedents of knowledge hiding. In addition, reciprocal of knowledge hiding is also highlighted as a vital outcome of knowledge hiding behavior. The study produced important underpinnings for policy makers of telecommunication sector. From managerial perspective, the research findings would help managers to curb such counterproductive behaviors.

Keywords: Organizational knowledge culture, Social interaction ties, Knowledge hiding, Reciprocal of knowledge hiding

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INTRODUCTION

In today's composite and rapidly changing environment, most of the organizations depend on Knowledge Management (KM) for creating, developing and sharing knowledge among their employees. KM is the process to ensure that knowledge being created, used and shared more effectively among the employees to give sustainable edge to the organizations. KM brings improvement in the behaviors of employees and gives ample support in meeting the needs of the business and boosting benefits of the organizations. As Peng (2013) emphasized that "organizations need to develop systematic processes to create and share knowledge to gain competitive advantages and sustain in businesses" (pp. 402). Conversely, the Knowledge Hiding (KH) phenomenon got little recognition as compare to Knowledge Sharing (KS) in the research literature. Usually, Knowledge Hiding Behavior (KHB) is explained as "intentional strive by an individual to withhold or conceal knowledge that has been requested by another person" (Serenko & Bontis, 2016a, pp. 695). The most important objective of KM is to initiate steps that could discourage employees' KHB and encourage employees to share their understanding and knowledge with their colleagues in organizations. In literature, more importance has been given to the KS behaviors, but very little attention has been paid to employee's KHB.

Many factors that influence KS have been studied (Abdelwhab-Ali et al., 2019; Khattak et al., 2021). For instance Azeem et al. (2021) determined the influence of KS on organizational culture and in another study job

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performance (Swanson et al., 2020; Fatima, Majeed, & Saeed, 2017) but not with the KH. Nevertheless, very little research observing the antecedents and impact of KH and knowledge hoarding were found in the published literature. This sharing of experience and knowledge also generates more and more communication among the employees which automatically delivers knowledge to the entire organizational members. This act also influences employees who have lots of knowledge but not share it with others. When employees feel concealment of knowledge by their co-workers, then their behavior in turn gets more intensity as compare to reciprocal of KH. In an organization, the OKC discourage the KHB of employees.

Facilitating conditions is “the state of the actor and any environmental conditions that make the act easy, it provide the situations in which people are free to perform positive or negative behavior” (Triandis, 1977, pp.147). Thus, facilitating condition in the form of Organizational Knowledge Culture (OKC) has also been considered in the present study. As it is least tested in the public and private telecommunication organizations under the umbrella of KHB especially in context of Pakistan. On the other hand, fear is another variable which is feeling related the losing of relationship with others and threat of losing one’s power of independence (Fang, 2017; Farid et al., 2021; Rahman, Saeed, & Batool, 2019). In previous studies, kinds of fear have been studied to check the effect of fear on KS. Further, fear was categorized into self and other fear and were checked with KS but not tested with KH. This study considers only self- referred of fear as these types of fears are considered as self-schema, which may encourage the KHB of employees (Koivula et al., 2002; Tahir, Rahman, & Saeed, 2019).

Social Interaction Ties (SIT) are also important antecedents of KHB as these have the capabilities to influence employees’ behavior in the public and private organizations. SIT basically connect the people and encourage them to explore new opportunities. Also, it discourages the KHB of people. These interactions prohibit the KH but when the people conceal their knowledge from their colleagues and co-workers then these activities have the inverse relationship with the KH. Employees consciously hide their knowledge from their co-workers then negative emotions may occur due to undesirable actions of employees. Behind the undesired actions of employees, actions focusing on personal objectives or benefits may reduce the effect of knowledge reciprocation (Arain et al., 2020; Khan, Saeed, Ali, & Nisar, 2021). In the organization when one employee intentionally hides knowledge from co-worker, then co-worker in turn also hides knowledge, thus KHB becomes commonplace in an organization (Serenko & Bontis, 2016b). To address the void, this study aims to explain the effect of antecedents of KHB and how it lead to RKH? Previous studies mostly focused on the KS but overlooked the concept of KHB.

LITERATURE REVIEW

According to Social Exchange Theory (SET), everyone is motivated by their own self-interest. Due to this, people conceal their knowledge. Every action that has worth should elicit a response from the recipient, which lays the groundings for a process of exchange that is mutually beneficial. In accordance with the SET, employees are urged to impart their expertise from their coworkers because they anticipate receiving something valuable in return, including the act of reciprocating information in the future. SET differentiates between the two types of reciprocity orientation: 1. positive reciprocity, a fact that “involves the tendency to return positive treatment for positive treatment,” and 2. negative reciprocity, something that “involves the tendency to return negative for negative treatment” (Cropanzano & Mitchell, 2005, pp. 882). An individual when realizes his or her co-worker consciously or intentionally withhold their knowledge, he or she requites in the same manner to conceal his or her knowledge in turn.

Hypotheses Development

Knowledge hiding: Knowledge sharing is a vital part of human interaction and has been taken place in all facets of organization practices (Serenko & Bontis, 2016b; Khan, Saeed, & Khattak, 2018). The instances of KHB includes when only a portion of the pertinent knowledge is disclosed (i.e., there is not a full knowledge disclosure) or partial knowledge sharing occurs (Zhao et al., 2021; Ali, Ahmad, & Saeed, 2018). For personal advantage, people may intentionally conceal information or unintentionally hoard it. They may also result in contributing less information than is required. The concept of KH addresses the issues of individual’s behaviors regarding intention and request. In this study, KH is defined as “the deliberate attempts of employees to withhold or conceal their knowledge in public and private organizations when it was requested by their fellow colleagues” (Connelly et al., 2012, pp. 68). This definition highlights that the necessary knowledge was expressly requested by someone, yet the knowledge’s

possessor made deliberate efforts not to divulge it.

Organizational knowledge culture: The three types of facilitating conditions explained in prior research are organizational: 1) knowledge management system; 2) policies and 3) culture (Rodriguez-Gomez & Gairin, 2015; Ullah et al., 2021). The types of facilitating conditions quoted above have an effect on KS behavior in several contexts. Facilitating conditions “include the state of the actor and any environmental conditions that make the act easy” (Jeon et al., 2014, pp.257). While OKC is the situation in which individuals find themselves comfortable as they expect to perform better. The study of Triandis (1977) demonstrated that “facilitating conditions influence people’s behavior in various settings” (pp.151). Conversely, it is unknown whether individuals can also suppress counter behavior, including KH. A good knowledge culture environment may discourage the KHB. Individuals feel that knowledge is an ownership and if they share it with other they may lose their knowledge capacity in this context. The KHB may be determined through the concept of territoriality and psychological knowledge ownership. The research undertaken by Pierce et al. (2003) determined that “Psychological ownership is a cognitive- and affective state in which individual feels as though the target of ownership or a piece of that target is ‘theirs’ (i.e., It is mine)’” (pp. 91). However, acquiring knowledge is a subjective process that takes a significant amount of time and mental effort. As of prior job experience and education, employees have ample relevant information and they continue to learn new things after joining their present firm like from their coworkers, mentors, formal and informal training, self-education, etc. However, because knowledge acquisition is intimate, people typically feel a sense of psychological ownership over their knowledge, which they probably don’t share with others. Therefore, existence of the OKC is needed in which the employees share their knowledge with their co-workers and discourage the KHB, but in most of the cases employees conceal their knowledge from their colleagues and co-workers as they fear they may loss the power and importance at the workplace especially in the eyes of boss. This provide the basis to pose the first hypothesis of this research as:

H1: The existence of a good organizational knowledge culture has negative effect on employees’ knowledge hiding behavior.

Self-referenced fear:

Fear is a powerful emotion that has highly influenced how people behave. However, the understanding of fear is incomplete and mostly based on research into how to create fearful environments at work (Nguyen, 2021). In general, fear is one of the most fundamental human emotions that arises when a person feels an existential threat, uncertainty, and risk to himself (Nguyen, 2021; Zia, Saeed & Khan, 2018).

On the other hand, Self- Referred Fear (SRF) is the form of fear which relates with the self- influential. The SRF positively influences the KH. In this study the three dimensions of fear were investigated. 1) Fear of Losing Face (FLF) reflects “fear and anxiety associated with feeling embarrassed, shameful or dishonored when one shares failure experiences of knowledge that others regard as useless” (Zhang & Ng, 2012, pp.1331). Despite their remarkable contribution of sharing knowledge, fear of losing face may be holding certain knowledge contributors back (Hwang et al., 2013). 2) Fear of Losing Power (FLP) refers to “one’s perception that KS may cause the loss of power and associated personal value derived from one’s knowledge” (Hsu & Chang, 2014, pp.124). In the study of Hwang et al. (2013) it was accentuated “knowledge is observed as a demonstration of power, allocate one’s knowledge arouses one’s fear and the anxiety of loss from victimization over the status quo or mutual noncooperation” (pp.190). 3) Fear of Isolation (FI) is determined as “anxiety or fear in conditions in which one knowledge loneliness, a lack of community, introverted or quarantined” (Kim & Markman, 2006, pp.354). FI is the restriction of willingness to speak up which has been frequently utilized as a fundamental interpretation of fear (Lee & Kim, 2014). These three fears mainly indicate self-referred fears and it can be stated that these can impact KHB. So it is hypothesized as.

H2. (a) Fear of losing face has positive effect on employees’ knowledge hiding behavior.

H2. (b) Fear of losing power has positive effect on employees’ knowledge hiding behavior.

H2. (c) Fear of isolation has positive effect on employees’ knowledge hiding behavior.

Social interaction ties: Social interaction ties are the human behavior that has links with community and co-workers in the work place. These activities create new opportunities to connect other people who facilitate greater knowledge activity within the organization but it has negative effect on KH as an individual who is well connected with his or

her surroundings in a social manner has a high likelihood of engaging in KS activities by connecting others for the benefits of the group to which he or she belongs (Jamshed & Majeed, 2019; Gul, Ali, & Saeed, 2021). Therefore, an individual even strongly connected with others but if he is highly interested in self-growth and self-success then he hide his knowledge from co-workers. Researchers (Zhao et al., 2021; Saeed, 2017) concluded that individuals with strong ties with others but have more interests in self-growth and development exhibit the KHB. This provides the basis for the next hypothesis as:

H3: Social interaction ties have negative effects on employees’ knowledge hiding behavior.

Reciprocal Knowledge Hiding:

Reciprocal knowledge Hiding RKH acted as the outcome of the KH in current research which represents the tendency of the return of the KH (Chen & Lu, 2021; Nadeem, Saeed, & Gul, 2020). When co-workers conceal their knowledge from their colleagues at work place then the colleagues also hide their knowledge in turn. But the tendency of the colleagues’ behavior is greater in this case than the behaviors of their counter-part. There are different phenomenon that describes the importance and behavior intimation of negative reciprocity. First, badness has greater intensity than goodness, as Baumeister et al. (2011) in their study explained “the tendency of negative emotions are greater than positive emotions, prepared more thoroughly, and more contrary to change than positive ones” (pp. 337). Second, Positive reciprocation to positive occurrences outweighs negative reciprocation to bad facts or interactions in terms of consequences (Chen & Lu, 2021; Khan, Kaewsaeng-on, & Saeed, 2019). Third, the severity of the reciprocal criticism also lasts for a longer time, possibly for the duration of the job period. Fourth, employees typically find it easier to participate in negative reciprocity (i.e., reduce their work efficiency and ignore knowledge requests) than positive reciprocity (i.e., increase their work efficiency and promote KS) (Arain et al., 2020; Burki, Khan, & Saeed, 2020).

Information withholding has already been used to demonstrate the presence of negative reciprocity (e.g., Jahanzeb et al., 2019; Khattak, Saeed, & Tariq, 2018) and some suggested that it may be connected to KH. It is for this reason, SET distinguishes between two types of reciprocity orientation: 1) positive reciprocity, which “requires the magnitude to return positive feedback for positive behavior” and 2) negative reciprocity, which “requires the magnitude to return negative response for negative behavior” (Cropanzano & Mitchell, 2005, pp. 879). Hence, when an employee observes that his or her colleagues consciously hide their knowledge, then he or she reciprocates (i.e., retaliates) in the same manner by hiding his or her knowledge in turn. Hence, it is hypothesized as:

H4: Employees’ Knowledge hiding behavior has positive effect on reciprocal knowledge hiding.

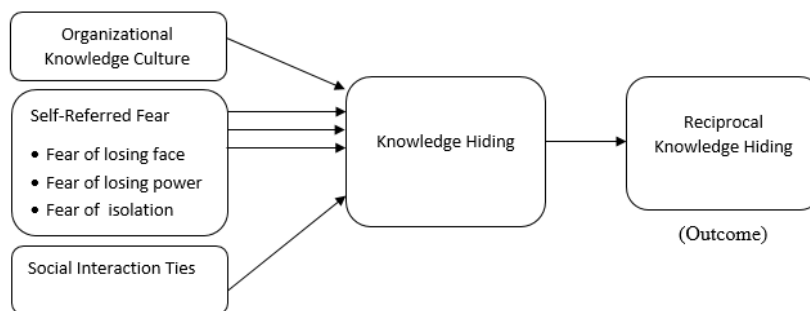


Figure 1: Research Model

RESEARCH METHODOLOGY

Quantitative research and survey technique was used in current study to examine the relationships in proposed research model and to test the hypotheses. The data for the study was collected from three different telecommunication companies (public and private) located in Punjab province of Pakistan. Unit of analysis of the current study is the employee of the said companies. Out of selected three telecommunication companies, one was public sector company, i.e., PTCL. The other two companies were from private sector, i.e., Zong and Jazz. The basis for the selection of these two companies are that these have multi-cultural employees and are relatively older than their counter-parts. Further all of the companies have greater market share in comparison to the rest. For data collection

non probability convenient sampling technique was used. Respondents were executive officers, top managers, middle managers and the front line managers from whom responses were obtained through the structured close ended questionnaires. A total of 384 questionnaires were distributed out of which 298 questionnaires were returned back. After close examination, 21 questionnaires were found incomplete. So 277 questionnaires were focused for final data analyses. The response rate was 72.13%.

All measures' items were adopted from previous studies especially designed to measure KHB of individuals. The measures for OKC and KH and reciprocal KH were adopted from Serenko and Bontis (2016a). OKC comprised five items while the rest two comprised three items each. On the other hand, FLF, FLP and FI have been measured via four, five and four items respectively. These three measures were adopted from research studies and were frequently used in published literature (Hwang et al., 2013; Zhang & Ng, 2012; Lee & Kim, 2014). Finally, SIT have been measured via three items adopted from Chiu et al. (2006). All of these measures' items were rated on five-point Likert scale which comprised from strongly disagree to strongly agree. Furthermore Statistical Packages for Social Sciences (SPSS) v 20 was used for the statistical techniques like descriptive statistics, internal reliability, correlation analyses and regression analyses.

RESULTS AND DATA ANALYSES

According to demographics of respondents, male respondents were 192 (69.3 %) and female were 85 (30.7 %). The profile of respondents (see Table 1) demonstrates that male percentage is far greater than the female percentage. This shows that across telecommunication sector in Pakistan, gender dis-proportion exists. Regarding age, 66 % employees belong to age group 20-34, while 26.4 % were in 35-44, on the other hand only 6.5 % and 1.1 % were in age ranges of 45-54 and above 55 respectively. On average most of the respondents were young and highly motivated for their job. The qualification of respondents was also observed in this study. The details depicted that 26% of respondents had bachelor degrees, 38.7% had master degrees and 19.4 % had some sort of professional degrees. As far as the job position is concerned, mostly respondents belonged to managerial level, like managers and line managers. The responses from different companies include 32.1 % from PTCL, 35.4 % from Jazz and 32.5 % from Telenor.

Table 1: Profile of Respondents

Demographic Characteristics	Description	Percentage (%)
Gender	Male	69.3%
	Female	30.7%
Age	20- 34	66.1%
	35- 44	26.4%
	45- 54	6.5%
	55 & above	1.1%
Education	Matriculation	.7%
	Intermediate	1.8%
	Graduate	23.1%
	Master	61.0%
	Professionals & others	13.4%
Telecommunication Companies	PTCL	32.1%
	Jazz	35.4%
	Telenor	32.5%

Normality Test and Reliability Analyses

Table 2 shows the results of data normality test and reliability analyses. For the data normality, the Skewness and Kurtosis analyses have been undertaken. In the normality test the data was verified to be normally distributed. According to the results, values of measures lies between the +3 to -3 that are within acceptable range of ± 3 (Field, 2009). On the other hand, reliability of the constructs was examined by the calculation the Cronbach's Alpha (α). The results depicts that reliability analyses of all measures lied between 0.72 - 0.89, which are in the accepted benchmark set by (Amirrudin et al., 2021).

Table 2: Data Normality and Reliability

<i>N</i> = 277	OKC	SIT	FLF	FLP	FI	KHB	RKH
Skewness	1.03	-1.03	-1.09	-1.30	-.73	-.95	-2.06
Std. Error of Skewness	.15	.15	.15	.15	.15	.15	.15
Kurtosis	-.098	.37	.58	.55	-.01	-.15	5.09
Std. Error of Kurtosis	.29	.29	.29	.29	.29	.29	.29
Alpha (α)	0.77	0.80	0.88	0.89	0.76	0.74	0.72

Note: OKC stands for Organizational Knowledge Culture, SIT Social interaction ties, FLF Fear of Losing Face, FLP Fear of Losing Power, FI Fear of Isolation, KHB Knowledge Hiding Behavior, RKH Reciprocal Knowledge Hiding.

Correlation Analyses

Table 3 has the correlation details among the variables of the research. The correlation between the OKC and KHB been recorded as negative (-0.44) shows that in telecommunication companies the employees' behavior towards KHB get lowered there is they are in an environment of knowledge culture in organizations. According to the results the highest correlation exists between OKH and FLP (0.54). Moreover, co-relation between KHB and SIT is 0.24, KHB and FLF is 0.44, KHB and FI is 0.48. All other correlations between the variables were below 0.85 diminishing the existence of multi-colinearity.

Table 3: Correlations Analyses

<i>N</i> = 277	OKC	SIT	FLF	FLP	FI	KHB	RKH
ORG KNOWLEDGE CULTURE (OKC)	1	1	1	1	1	1	1
SOCIAL INTERACTION TIES (SIT)	-.218**						
FEAR OF LOSING FACE (FLF)	-.595**	.214**					
FEAR OF LOSING POWER (FLP)	-.508**	.161**	.685**				
FEAR OF ISOLATION (FI)	-.392**	.305**	.502**	.542**			
KNOWLEDGE HIDING BEHAVIOR (KHB)	-.442**	.246**	.448**	.547**	.486**		
RECIPROCAL OF KNOWLEDGE HIDING (RKH)	-.128*	.213**	.180**	.193**	.264**	.452**	

** . Correlation is significant at the 0.01 level (Pearson correlation).

* . Correlation is significant at the 0.05 level (Pearson correlation).

Hypotheses Testing

The hypotheses were tested through regression analyses. Regression analyses were applied in two steps. In first step, the regression were undertaken to examine the relationship of antecedents (OKC, SIT, SRF) with the KHB of employees (Table 4). In second step, the regression technique was applied to find out the relationship of KH with its outcome RKH (Table 5).

According to the results, OKC has significant negative effect on KHB of employees ($\beta = -.442, p .000$). The negative relationship depicts that when the organization has a good knowledge culture environment it would discourage the KHB of employees and consequently their KS behavior strengthens. Hence hypothesis 1 has been accepted. Further, SIT shows the significant positive relationship with KHB ($\beta = .246$ and $p = .000$), so hypothesis 2 of the study is also accepted. The dimensions of self-referred fear FLF, FLP and FI were also have significant positive relationship with KHB ($\beta = .448, p = .000, \beta = .547, p = .000, \beta = .486, p = .000$ respectively). On the basis of these results all of the three hypotheses i.e., 3a, 3b and 3c have been accepted. These results highlights that increase in SRF in the human behavior enhances the KHB of the employees. Table 4 presented the model summary, according to the results, R^2 was 0.38 which means independent variables explained the dependent variable by 38 %.

Table 4: Regression Analyses (Antecedents)

<i>N</i> = 277 <i>R</i> ² = .38		DV: Knowledge Hiding Behaviour (KHB)		
Step 1		<i>t</i>	<i>p</i>	
Organizational Knowledge Culture	-.442	-8.177	.000	
Social Interaction Ties	.246	4.217	.000	
Fear of Losing Face	.448	8.314	.000	
Fear of Losing Power	.547	10.846	.000	
Fear of Isolation	.486	9.230	.000	

In step 2 of regression analyses, KHB is regressed with RKH. The results demonstrates that KHB has significant positive relationship with RKH ($\beta = .452, p = .000$), hence hypothesis 4 is approved. This explains that when employees hide knowledge from their co-workers in return the intensity of reciprocation of knowledge hiding also intense and greater. *R*² in this case was .27, showing KHB brought 27% variance in RKH. These results are drawn in Table 5.

Table 5: Regression Analysis (Outcome)

<i>N</i> = 277 <i>R</i> square = .27		DV: Reciprocal Knowledge Hiding (RKH)		
Step 2	B	T	<i>p</i>	
Knowledge Hiding	.452	8.413	.000	

DISCUSSION

The objective of this study was to closely investigate antecedents of KHB and RKH as an outcome of KHB in the context of the telecommunication sector in Pakistan. Results of this study provided support to research model presented in Figure 1 in the form of acceptance of all hypothesized relationships. The results of this study explained that OKC, SIT and SRF have effects on KHB of employees. Moreover, this study also demonstrated that KH affects the RKH. Further details indicated that dimensions of SRF positively influenced the KHB. Moreover, this positive relationship is strong as well which mean that the employees hide their knowledge due to the loss of power, lack of confidence and FI. Employees do not share their ideas with boss and colleagues because they feel that other will ridicule me on what I share. Also, it was found that SRF has significant relationship with KH. Thus, one may feel that employees feel hesitation, losing of individual identity and employees may also hoard their knowledge from their co-workers. Results of this research also validated that FLF, FLP and FI have impact on employees’ KHB. Further, OKC acted as a significant antecedent but have negative influences on the KHB (Bari et al., 2020; Al Hassan, Fatima, & Saeed, 2019). The reason is that in context of Pakistan, people not share their knowledge with others. Knowledge hoarding concepts revealed within the organizations as people are not supportive in KS with other. Senior employees hoard their knowledge from co-workers due to this reason organizational culture is not a knowledge sharing culture.

Employees conceal their knowledge (understanding) from their colleagues on basis of the competition and jealousy among the co-workers within the organizations. SIT also have significant positive relationship with KHB (Abubakar et al., 2019; Ali, Saeed, Khan, & Afzal, 2021) but this relationship is not very strong. It means that if the employees are connected with social media they help other but the employee who originally has the knowledge they hide their knowledge from others. In the other words, one employee may feel more satisfied to help other, such satisfaction does not inspire the active introduction of unconnected employees in grouping to form new relationship. Due to the lots of sharing knowledge associated to the job duties, it can be a factor that obstruct KS activities. KHB has positive effect on RKH, this highlights that the tendency of bad is more than good, when one employee hides their knowledge from their co-worker in turn co-worker also response in negative content. This study explained that OKC, SRF and SIT represent different undesirable emotion that can change employee’s behavior in organization. Previous researches examined ‘fear is a significant barrier to KS’ but this research differentiated the relationship by taking the dimensions of fear and checking it with KH. Each of the findings of analysis is impressive for further discussion and theoretical implications along some directions for further research.

This research examined research model of the antecedents (OKC, SRF and SIT) of KHB and RKH as an outcome in context of Pakistan. As results of analyses conducted herein, SIT and dimensions of SRF were found be

positively influenced the KH but OKC was negatively influencing the KH in telecommunication sector. In addition, KH was approved to have positive relationship with RKH in telecommunication sector. The results of this research provides influential theoretical implication for researchers. Since the introduction of knowledge management principal, educational research has mostly emphasized on the development and implementation of knowledge behavior and paid less importance to appreciation KH behavior.

Limitation and Future Research Directions

Like any good research, this study also comprised few limitations. First, it considered only three dimensions of OKC, future research is propelled to undertake other possible determinants (e.g., guilt coping, and negative emotions) mediator and moderator (e.g., personality traits and other factor) that may change key effects of variables into more reflective relationships. Second, this research has taken sample from telecommunication companies. Employees working in this sector might have different perceptions about the influencing of behavior (reciprocal of knowledge management and knowledge hiding). Thus, the results would be explained as only to interpret these three antecedents of KH by current employees of telecommunication companies. Third, because the data was collected one time in cross-sectional setting, future researches are encouraged to consider panel and longitudinal data to analyze causal relationships between variables selected by this research. Fourth, the present research entirely considered the three antecedents as the independent variables. Therefore, future research should assume to explore their other possible impact (e.g., on well-being) to expand the research model. Fifth, the current study involved only three telecommunication companies for investigating the impacts of antecedents on KH. Future study is encouraged to consider other telecommunication companies working in Pakistan.

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