

Artículo de investigación

Effect of contextual factors on knowledge sharing behavior

Efecto de los factores contextuales en el comportamiento de intercambio de conocimientos

Efeito de fatores contextuais no comportamento de compartilhamento de conhecimento

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Abstract

This paper aims to examine and test the moderating effects of informal knowledge governance mechanisms and knowledge sharing opportunity on the relationship between clan organizational culture and knowledge sharing behavior thematically organized around social exchange theory. This study uses survey design based on stratified random sampling to measure the constructs. Data was collected from 279 university teachers. Preacher and Hayes process macro is used to test the hypotheses based on regression analysis. Authors find support for the direct relationship between clan organizational culture and knowledge sharing behavior. The direct relationship is moderated by informal knowledge governance mechanisms and knowledge sharing opportunity. Data support the hypotheses but the contributions of the study should be acknowledged while allowing the limitations to be realized that lead to future directions. This study suggests that practitioners and managers should re-consider the role of informal knowledge governance mechanisms and knowledge sharing opportunities as vital contextual factors for creating synergy to upsurge knowledge sharing behavior. This paper concludes that presence of knowledge sharing opportunities and adaption of informal knowledge governance mechanisms have a strong contingent effect on the positive relationship between clan organizational culture and knowledge sharing behavior at workplace.

Resumen

Este documento tiene como objetivo examinar y probar los efectos moderadores de los mecanismos informales de gobernanza del conocimiento y la oportunidad de compartir conocimientos sobre la relación entre la cultura organizacional del clan y el comportamiento de intercambio de conocimientos organizados temáticamente en torno a la teoría del intercambio social. Este estudio utiliza un diseño de encuesta basado en un muestreo aleatorio estratificado para medir los constructos. Los datos fueron recogidos de 279 docentes universitarios. La macro del proceso de Predicador y Hayes se utiliza para probar las hipótesis basadas en el análisis de regresión. Los autores encuentran apoyo para la relación directa entre la cultura organizacional del clan y el comportamiento de intercambio de conocimientos. La relación directa está moderada por los mecanismos informales de gobernanza del conocimiento y la oportunidad de compartir el conocimiento. Los datos respaldan las hipótesis, pero las contribuciones del estudio deben reconocerse y, al mismo tiempo, permitir que se realicen las limitaciones que conducen a direcciones futuras. Este estudio sugiere que los profesionales y gerentes deben volver a considerar el papel de los mecanismos informales de gobernanza del conocimiento y las oportunidades de intercambio de conocimientos como factores contextuales vitales para crear sinergia para aumentar el comportamiento de intercambio de conocimientos. Este documento concluye que la presencia de oportunidades de

Keywords: Clan organizational culture, informal knowledge governance mechanism, knowledge sharing behavior, knowledge sharing opportunity, social exchange theory.

intercambio de conocimientos y la adaptación de los mecanismos informales de gobernanza del conocimiento tienen un fuerte efecto contingente en la relación positiva entre la cultura organizacional del clan y el comportamiento de intercambio de conocimientos en el lugar de trabajo.

Palabras claves: Cultura organizacional del clan, mecanismo informal de gobernanza del conocimiento, comportamiento de intercambio de conocimientos, oportunidad intercambio de conocimientos, teoría del intercambio social.

Resumo

Este trabalho tem por objetivo analisar e testar os efeitos moderadores de mecanismos de governança informais de conhecimento e oportunidades para compartilhar conhecimento sobre a relação entre cultura organizacional de clã e partilha de conhecimentos comportamento organizado tematicamente em torno de teoria da troca social Este estudo usa um projeto de levantamento baseado em uma amostragem aleatória estratificada para medir os construtos. Os dados foram coletados de 279 professores universitários. A macro do processo Preacher and Hayes é usada para testar hipóteses baseadas em análise de regressão. Os autores encontram apoio para a relação direta entre a cultura organizacional do clã e o comportamento de troca de conhecimento. A relação direta é moderada pelos mecanismos informais de governança do conhecimento e pela oportunidade de compartilhar conhecimento. Os dados apoiam a hipótese, mas as contribuições do estudo devem ser reconhecidas e, ao mesmo tempo, permitem limitações que conduzem a direções futuras são feitas. Este estudo sugere que os profissionais e gestores devem reconsiderar o papel dos mecanismos de governança informais de oportunidades de conhecimento e de partilha de conhecimentos como factores contextuais vitais para criar sinergia para aumentar o comportamento de compartilhamento de conhecimento. Este artigo conclui que a presença de oportunidades para a partilha de conhecimento e adaptação de mecanismos de governança informais de conhecimento tem um forte efeito depende da relação positiva entre a cultura organizacional de compartilhamento de conhecimento clã e comportamento no local de trabalho.

Palavras-chave: Cultura organizacional do clã, mecanismo informal de governança do conhecimento, comportamento partilha de conhecimento, oportunidade de compartilhar conhecimento, teoria da troca social.

JEL Code: M, M12, M14, M19.

Introduction

Transfer of knowledge has become a critical challenge in today's dynamic business and economic environment (Segarra-Cipre's, Roca-Puig & Bou-Lluisar, 2014). According to Kang and Kim (2017), firms' survival is dependent upon knowledge transfer efficiency. It is also considered a core competency for an organization to achieve competitive advantage and an indicator to attain a recognizable position in the market (Zhao, Fan & Wang, 2017). Intezari, Taskin and Pauleen (2017) examined that there are three main organizational factors that contribute to knowledge management, i.e., technology, structure and organizational culture. Hence, type of organizational culture adopted in

relation to transferring knowledge has a strong impact on subsequent outcomes (Paro & Garolamo, 2017). \$31.5 billion are lost by Fortune 500 companies annually due to lack of appropriate knowledge sharing (Heisig et al., 2016).

Knowledge sharing is a key component of knowledge management process (Wu & Lee, 2017). According to social exchange theory, knowledge sharing has a fundamental role in knowledge management (Pee & Min, 2017). An organizational culture that supports knowledge sharing norms and values would ensure unhampered information flow from holder to

receiver. Conversely, scarcity of knowledge sharing opportunities in an organization (Cavaliere, Lombardi and Giustiniano, 2015) and the control mechanisms adopted for efficient knowledge governance (Huang, Chiu & Lu, 2013) serves as a barrier to sharing knowledge. In this vein, the impact of an organizational culture on knowledge sharing behavior can be examined via the context of knowledge sharing mechanism adopted and the knowledge sharing opportunities provided by an organization.

1.1 Background and knowledge gap

Despite a plethora of research exploring independent effects of organizational culture on knowledge sharing, no empirical study has been carried out to examine the effect of contextual variables on knowledge sharing behavior and the boundary conditions that specify or limit the effectiveness of culture on knowledge sharing. Moreover, there is dearth of empirical studies on knowledge sharing (Henttonen, Kianto & Ritala, 2017) in developing countries like Pakistan in both public and private sector (Haq & Anwar, 2016).

Knowledge sharing has been examined in relation to organizational culture, but little is done to study the conditions that enhance or reduce the effect of specific type of organizational culture on knowledge sharing behavior. Different terms are used inconsistently to describe a particular knowledge process that leads to confusion among researchers and practitioners about the use of these terms. It makes the identification of crucial factors that contribute to improved knowledge transfer in any organization (Intezari et al., 2017).

The debate on the influence of various dimensions of knowledge governance mechanisms on knowledge sharing exists since Foss (2007, 2010) introduced the concept of knowledge sharing mechanisms. Since then, studies are exploring the mutual effects but much is left to be explored. Empirical findings are inconsistent despite the fact that literature has attempted to establish relationships among knowledge sharing opportunity, knowledge governance aspects and knowledge transfer. More specifically, no study has examined the effect of multiple moderators as contextual variables on the relationship between clan organizational culture and knowledge sharing behavior. This study has significant contribution in establishing that the organizational culture that

is often considered a barrier to share knowledge (Durmusoglu, Jacobs, Nayir, Khilji & Wang, 2014), would in fact facilitate knowledge transfer under a set of specific conditions when employed at the appropriate time. This premise is built on social exchange theory that establishes the reciprocal exchange relationship between organizational culture, knowledge sharing behavior and the contextual variables.

1.2 Aim of the study

This study aims to fill this gap by examining the moderating effects of knowledge sharing opportunity and informal knowledge governance mechanism on the relationship between organizational culture and knowledge sharing behavior. Therefore, the need to examine the boundary conditions operating in a specific organizational culture that foster KSB, leads to the following research questions:

R.Q. 1: What is the effect of clan organizational culture on knowledge sharing behavior?

R.Q.2: What is the moderating effect of introducing organization level contextual variable (IFKGM) between organizational culture and knowledge sharing behavior?

R.Q. 3: What is the moderating effect of introducing individual level (KSO) contextual variable between organizational culture and knowledge sharing behavior?

1. Literature Review and Hypothesis

2.1 Organizational culture

In the literature, organizational culture has been defined through use of various typologies and frameworks. Few of the famous frameworks are Gattorna's Culture Map (2006), Oliveria and Tamayo (2004) Profile of Organizational Values (IPVO) and Cameron and Quinn (1999, 2006) Competing Values Framework (CVF) along with many others. Cameron and Quinn (1999) Competing Values Framework is one of the most widely used framework (Paro & Garolamo, 2017).

2.1.1 Competing values framework.

The four quadrants of CVF identify four different types of organizational culture, namely, hierarchy, clan, market and adhocracy (Cameron & Quinn, 1999; Turner & Pennington III, 2015). Hierarchy Well-defined processes, policies, and procedures define the hierarchy culture. It

follows the tall structures and strict control mechanisms, chain of command and centralization.

Market It is results and outcome focused, market culture is driven by competition. Transactions are purely value based. In an efficient market, value is something generated through minimum cost and time.

Adhocracy Adhocracy culture offers more flexibility and autonomy than any other type of organizational culture to adapt with the changes in dynamic business environment. Prototyping, market testing are the tools to develop and penetrate in markets through utilizing teams rather than gigantic projects. Managers take calculated risks that ensure significant gains.

2.2 Clan organizational culture

Clan organizational culture is an organizational environment that is like a family with emphasis on shared common goals and values (Cameron and Quinn, 2009). More flexible structure and lesser focus on control are associated with clan culture. People are motivated through goal sharing, participation in decision making, and vision rather than strict control through rules (Turner & Pennington III, 2015). Clan culture is conducive to transferring knowledge as individuals share things freely with others about themselves. Clan culture is oriented towards teamwork, organizational commitment, and employee involvement and wellness programs. More autonomy is provided to teams who work for shared goals. Rules or norms of behavior are socially communicated and not documented necessarily (Suppiah & Sandhu, 2011).

1.3 Knowledge sharing opportunity

Knowledge sharing opportunity is a planned opportunity to learn (Huang et al. 2013). Knowledge sharing opportunity is one of the components of ability, motivation opportunity (AMO) framework developed by Applebaum, Bailey, Berg and Kellayberg (2001). It is a well-known framework that is widely acknowledged in human resource research (García-Sánchez, García-Morales & Bolívar-Ramo, 2016). Opportunities for sharing knowledge could be both formal and informal. Planned opportunities for learning and learning channels are formal opportunities including newsletters, organizational reports and trade magazines (Huang et al., 2013). Social relationships that develop trust, confidence, friendship and teamwork are the informal opportunities that

bring people closer and hence they are more willing to exchange knowledge (Kang & Kim, 2017). Less expensive opportunities for people interaction are social media blogs, social networking sites, wikis and the like (Rathi & Given, 2017).

2.4 Knowledge sharing behavior

Knowledge sharing is termed as the transfer of acquired knowledge by an individual to others in an organization (Tsai, Joe, Lin & Wu, 2017). Knowledge sharing is one of the widely studied knowledge management process (Intezari et al., 2017). Knowledge sharing behavior is a voluntary behavior, people share when they are willing to do so, do effort to share and have the ability, motivation and opportunity to transfer knowledge (Yang, 2010; de Almeida, Lesca & Canton, 2016; Kang and Kim, 2017). Individuals create and exchange knowledge both explicit and implicit through frequent interactions. Knowledge is valuable in today's dynamic environment and serves as a competitive advantage making an organization's survival is incredible without it (Chang, Liao & Wu, 2017).

2.5 Knowledge governance mechanisms

Formal governance mechanisms are the reward system, performance appraisal system, management information system, work design, standardized operating procedures and organizational structure Informal mechanisms are the beliefs, values and shared norms and goal internalization to warrant desirable behavior (Huang et al., 2013).

Basically, knowledge governance has four distinct aspects: governance goals, governance mechanisms, governance environment and implementation. Among them, most significant are knowledge governance mechanisms and environment as they effect the behavior and let people think of taking advantage of knowledge sharing opportunities (Yang, 2011; Kang & Kim, 2017). Formal and informal mechanisms are utilized to reduce the risk of people involving in opportunistic behavior (Huang et al. 2013).

2.6 Clan Organizational culture and knowledge sharing behavior

Organizational culture and knowledge sharing behavior are strongly associated with each other (Durmusoghlu et al., 2014) but different dimensions of organizational culture affect the

outcomes in a different manner (Tsai et al., 2017). As attitudes, intention, behavior chain is important in shaping employee behavior triggered by organizational culture (Aquilani, Abbate & Codini, 2017), many studies have examined organizational culture as a predictor of knowledge sharing (Amayah, 2013; Akhavan, Hosseini, Abbas & Manteghi, 2015). In a recent study Serenko and Bontis (2016) described that social exchange theory focuses on some social norms and values to shape the desired behavior among individuals.

Extent literature reveals that clan organizational culture has a positive impact on knowledge sharing (Amayah, 2013; Turner and Pennington III, 2015; Aquilani et al., 2017). In a competitive environment people tend to hoard knowledge as a source of power, whereas in a cooperative environment of mutual trust rather than competitive jealousy, individuals are inclined to share knowledge (Matic, Cabrilo, Nes'ic' & Milic, 2017). Clan culture facilitates free flow of information, develops trust, supports pro-social norms, encourage affiliation and affection. All these aspects inspire individuals in any social setup including work place to share their knowledge voluntarily and comprehending their knowledge sharing behaviors (Tsai et al., 2017). Hence, it is proposed that

H1: Clan organizational culture has a positive influence on knowledge sharing behavior.

2.7 Knowledge sharing opportunity and knowledge sharing behavior

When people interact with each other in a social setup, trust and friendship is developed among them. This social relationship builds confidence and people are more willing to share their knowledge with others in a given social setup (Rathi & Given, 2017). The exchange relation and the bond among individuals serve as a valuable opportunity to mutually share their experience, knowledge and expertise (Kang & Kim, 2017). Informal arrangements like coffee breaks, water coolers, social activities, having lunch together create informal opportunities and are part of informal mechanisms that reduce distrust and bring people together (Huang et al., 2013). As a result, mutually comfortable workplace relations are formed and that interaction concludes at effective transfer of knowledge (Intezari et al., 2017). Knowledge sharing opportunities have a positive influence on knowledge sharing behavior (Huang et al., 2013). Hence, it is hypothesized that

H2: Knowledge sharing opportunity has a positive influence on knowledge sharing behavior.

2.8 Informal knowledge governance mechanism and knowledge sharing behavior

Social exchange theory posits that both formal and informal mechanisms are necessary for mutually valuable exchange process. However, selection of a specific mechanism by an organization depends upon the national and the organizational culture. Collectivistic countries like China relies on informal mechanisms and individualistic cultures like US are comfortable with formal ones (Yang, 2011; Huang et al., 2013). Pakistan is a collectivistic society (Khilji, 2003; Durmusoglu et al., 2014); so it will be more convenient to adapt the informal mechanisms for knowledge sharing.

Knowledge sharing is a social process (Tsai et al., 2017). Informal knowledge governance mechanisms set the norms of behavior and inculcate social pressure that leads people to share their knowledge with organizational members (Matic et al., 2017). Huang et al. (2013) suggest that informal knowledge governance mechanisms have a positive impact on knowledge sharing behavior of expatriates. Hence, it is proposed that.

H3: Informal knowledge governance mechanism has a positive influence on knowledge sharing behavior.

2.9 Informal knowledge governance mechanism as a moderator

Recent studies have shown the relevance of SET for the role of organizational culture and governance mechanisms in enhancing the positive effects on knowledge sharing behavior (Abbasi & Dastgeer, 2018).

Informal arrangements like coffee breaks, water coolers, social activities, having lunch together are part of informal mechanisms that reduce distrust and bring people together (Huang et al., 2013). Differences in organizations that adapt informal mechanisms and those who do not can be seen in the quantity and quality of knowledge shared (Yang, 2011). In a clan culture (Suppiah & Sandhu, 2011), presence of knowledge supportive mechanisms, drives people to willingly share their knowledge because of the

trust and confidence between that is the core of a social exchange (Huang et al. 2013).

Workplace behavior is directed by the situational clues provided by the organizational culture regarding the norms of behavior embedded in an organizational value set (Paro & Gerolamo, 2017). It does not always happen that knowledge is not being shared intentionally; sometimes active knowledge sharing is just not occurring (Henttonen et al., 2016).

Informal mechanisms bring people closer as more social interaction is involved (Huang et al., 2013). Those who are more socially active will have the tendency to voluntarily transfer the knowledge to peers and others in the organization (Serenko & Bontis, 2016) specifically when the organizational culture is knowledge oriented (Aquilani et al., 2017) like the clan culture. Hence, it is proposed that H4: Informal knowledge governance mechanism moderates the positive relationship between clan organizational culture and knowledge sharing behavior such that the relationship is stronger when informal knowledge governance mechanism is in place and weaker in absence of informal knowledge governance mechanism.

2.10 Knowledge sharing opportunity as a moderator

A knowledge supportive organizational culture encourages people to share their knowledge (Aquilani et al., 2017). How effectively the knowledge is transferred depends upon other organizational factors (Kang & Kim, 2017). Social

exchange theory posits that people are more satisfied when they obtain something of value as a result of exchange process (Serenko & Bontis, 2016). Individual differences in recognizing and utilizing the organizational opportunities can have influential role in accrediting opportunity loss as significant (Matic et al., 2017).

High opportunity seekers have the ability to seek multiple ways to achieve the desired goals (Huang et al., 2013). They are more confident (Kang & Kim, 2017) and build strong social relations to exchange something of value (Tsai et al., 2017). They find a supportive organizational culture as cultivating more benefits as a result of exchange (Durmusoglu et al., 2014) in terms of knowledge transfer (Amayah, 2013) and are less likely to hoard their knowledge (Intezari et al., 2017).

Members who value knowledge sharing opportunities utilize them in a cost effective manner (Huang et al., 2013) because they believe that the social exchange process would be more efficient when maximum output, in this case knowledge would be transferred by utilizing minimum resources (Serenko & Bontis, 2016). Therefore, it is proposed that

H5: Knowledge sharing opportunity moderates the positive relationship between clan organizational culture and knowledge sharing behavior such that the relationship is stronger when more knowledge sharing opportunities are provided and weaker when lesser knowledge sharing opportunities are provided.

Figure 1 shows the conceptual framework of the study.

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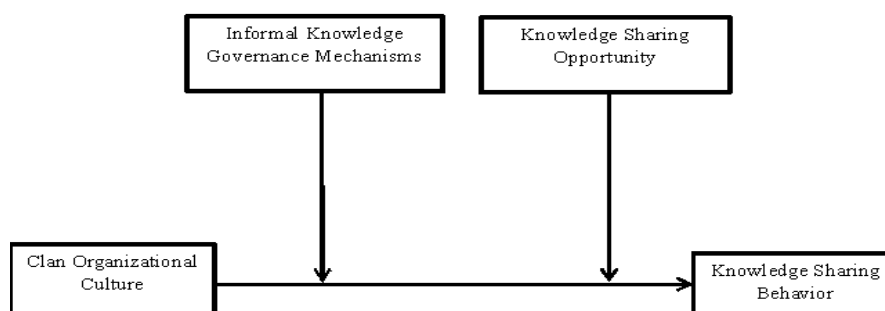


Figure 1: Conceptual Framework of the Study

3. Methodology

3.1 Sample selection

There is dearth of studies that examine knowledge management processes in developing countries like Pakistan and even scarce in higher education sector (Haq & Anwar, 2016). Social exchange theory explains that attitudes and behaviors of people are different when a sample is drawn from a collectivistic society like Pakistan (Hur, Moon & Ko, 2016). Data for this study was collected through structured survey from faculty members of universities and higher education institutions working in both public and private sectors in Islamabad/Rawalpindi.

3.2 Measures

Self-reported instruments were used to measure all latent constructs. Harman's one factor test was used to deal with Common Method Bias (CMB) that is introduced due to self-report measures. The total variance explained was less than 50% that shows there is no issue of CMB in data set. All the variables were assessed on seven point Likert scale with "1" strongly disagree to "7" strongly agree.

3.2.1 Clan organizational culture

The study used six item scale adopted from Cameron and Quinn (1999) organizational culture assessment instrument (OCAI) originally developed and developed by Cameron and Quinn (1999) to measure different dimensions of organizational culture. As this study examines only one of the four dimensions of CVF framework, hence only six items were used to measure clan organizational culture. Examples of items include "Loyalty, mutual trust and commitment are shared values among employees".

3.2.2 Knowledge sharing behavior

Knowledge sharing behavior was measured using seven item scale adopted from Bock, Zmud, Kim and Lee (2005). Example of items includes "I usually share my knowledge and experience when I participate in meeting or discussion".

3.2.3 Knowledge sharing opportunity

KSO was measured using four item scale adapted by Huang et al. (2013). Scale was developed from Cabrera and Cabrera (2005) and Ipe (2003).

3.2.4 Informal knowledge governance mechanisms

This study used the three item scale adapted by Huang et al. (2013) to measure IFKGMs. Scale was originally developed by Bjorkman et al. (2004). Example of IFKGMs include "There are leisure activities for colleagues to make friendship".

3.3 Pilot study

Sekeran and Bougie (2016) recommend that in order to improve subsequent survey and results, a pilot study should be one on small scale that traces initial trend in data. Before carrying out the survey, 60 teachers from 3 universities pilot tested the questionnaire. Survey questionnaire was revised on the basis of feedback from pilot study.

3.4 Sample Size

Disproportionate stratified random sampling technique was used to collect data. Departments were randomly selected and teachers were randomly selected to participate in the survey. A sample size of 200-300 is considered sufficient for regression analysis (Sekeran & Bougie, 2016). Hair et al. (2010) suggest that size of sample must be ten times greater than the total number of variables in the framework. For this study, initially 400 survey forms were floated among faculty members of 10 universities/Higher Education Institutions (HEIs). Returned questionnaires were 290, and size of valid survey was 279. Response rate was 69.75%.

Data was collected from all levels of university teachers, i.e., research associates, lecturers, assistant and associate professors and professors. Language of survey was English as respondents were qualified enough to respond the questionnaire in English language. Respondents belonged to tin cities Rawalpindi and Islamabad from both from public and private sector. 67.3% respondents were male, between the age of 26 and 35, mostly lecturers from public sector.

Table 1: Factor Loadings, Discriminant and Convergent Validity

| Construct | Item | Loadings | S.E. | t-value | CR | AVE | MSV | ASV |
|-----------|--------|----------|--------|---------|------|------|------|------|
| COC | COC1 | 0.728*** | .063 | 14.561 | 0.93 | 0.70 | 0.59 | 0.27 |
| | COC2 | 0.772*** | .049 | 20.097 | | | | |
| | COC3 | 0.864*** | .050 | 19.814 | | | | |
| | COC4 | 0.871*** | .050 | 19.973 | | | | |
| | COC5 | 0.874*** | .049 | 20.097 | | | | |
| | COC6 | 0.885 | | | | | | |
| KSB | KSB1 | .828*** | .070 | 14.058 | 0.92 | 0.63 | 0.57 | 0.35 |
| | KSB2 | .064*** | 14.494 | 14.583 | | | | |
| | KSB3 | .061*** | 13.249 | 16.640 | | | | |
| | KSB4 | .060*** | 15.859 | 15.859 | | | | |
| | KSB5 | .056*** | 16.640 | 13.249 | | | | |
| | KSB6 | .059*** | 14.583 | .059 | | | | |
| | KSB7 | .753 | | | | | | |
| KSO | KSO1 | .875*** | | | 0.92 | 0.80 | 0.78 | 0.42 |
| | KSO2 | .900*** | .054 | 21.107 | | | | |
| | KSO3 | .912*** | .057 | 21.708 | | | | |
| IFKGMs | IFKGM1 | 0.673*** | .064 | 11.564 | 0.81 | 0.59 | 0.54 | 0.28 |
| | IFKGM2 | 0.812*** | .064 | 14.660 | | | | |
| | IFKGM3 | 0.813 | | | | | | |

COC=Clan organizational culture, KSB=knowledge sharing behavior, KSO=knowledge sharing opportunity, IFKGM=Informal knowledge governance mechanism, SE= Standard Error, CR=Composite Reliability, AVE=Average Variance Extracted, MSV=Maximum Shared Variance, ASV=Average Shared Variance.

Table 1 gives the factor loadings, discriminant and convergent validity for all the items and latent constructs. The thresholds for these values are as follows:

Reliability

· CR > 0.7

Convergent Validity

· AVE > 0.5

Discriminant Validity

· MSV < AVE

· ASV < AVE

Values for CR (Composite Reliability), AVE (Average Variance Extracted), MSV (Maximum)

Shared Variance), ASV (Average Shared Variance) given in Table 1 meet the above criteria. It indicates that there is no issue of discriminant and convergent validity.

4. Results

Table 2 shows the sample descriptive statistics, bivariate correlations and Chronbach α (reliability) for all variables. Zero-order bivariate correlations were in the desired direction. Chronbach α is above the threshold value 0.7 for all latent constructs.

Table 2: Mean, Standard Deviation, Reliability, Correlations

| | | Mean (7-point scale) | SD | 1 | 2 | 3 | 4 |
|-------|---|----------------------|---------|--------|--------|--------|------|
| COC | 1 | 4.9857 | 1.28669 | 0.92 | | | |
| KSB | 2 | 4.8938 | 1.27803 | .593** | 0.92 | | |
| KSO | 3 | 4.8835 | 1.52605 | .725** | .589** | 0.90 | |
| IFKGM | 4 | 4.9678 | 1.42203 | .638** | .670** | .640** | 0.79 |

** Correlation is significant at the 0.01 level (2-tailed), n=279.

Values on the diagonal represent the chronbach α , reliability of latent constructs.

Table 3: Model Summary and Interaction Effects

| R | R-sq | MSE | F | df1 | df2 | p |
|------------|-----------|--------|---------|--------|--------|---------|
| Model | | | | | | |
| | Coeff (b) | se | t | p | LLCI | ULCI |
| constant | 4.7194 | 0.0787 | 59.9728 | 0.0000 | 4.5644 | 4.80743 |
| IFKGMs | 0.1439 | 0.0702 | 2.0509 | 0.0412 | 0.0058 | 0.2821 |
| COC | .4011 | 0.0633 | 6.3347 | 0.0000 | .02764 | 0.5257 |
| COC*IFKGMs | .0979 | 0.0480 | 2.0421 | 0.0421 | 0.0035 | 0.1923 |
| KSO | 0.2137 | 0.0675 | 3.1672 | 0.0017 | 0.0808 | 0.3465 |
| COC*KSO | 0.0797 | 0.0268 | 2.9748 | 0.0032 | 0.0270 | 0.1325 |

Preacher and Hayes (2008) Process macro was used to analyze the results. The model 2 was specifically used for data analysis with two moderators. Table 3 shows the model summary results that describes that overall model fit is good as $p < 0.001$ and is significant with R square 0.46. It means that the predictors in the model, namely clan organizational culture, informal

knowledge governance mechanisms and knowledge sharing opportunity and the two interactions (COC and IFKGMs and CoC and KSO) explain 46% percent variation in the dependent variable knowledge sharing behavior which is really good. Remaining 54% variation is due to other factors that are not included in this model and are out of scope of this study.

Table 4: R-square Increase Due to Interaction(s)

| | R2-chng | F | df1 | df2 | P |
|------------|---------|--------|--------|-----|--------|
| COC*IFKGMs | 0.0093 | 4.1703 | 1.0000 | 273 | 0.0421 |
| COC*KSO | 0.0176 | 8.8494 | 1.0000 | 273 | 0.0032 |
| Both | 0.0380 | 8.6346 | 2.0000 | 273 | 0.0002 |

Table 4 shows the change in the dependent variable, knowledge sharing behavior due to interaction effects of two mediators independently and the change in dependent variable due to moderating effect of both variables. All the R-square changes are negligible but interactions are significant with $p < 0.05$ for interaction effect of informal knowledge

governance mechanisms and $p < 0.01$ for knowledge sharing opportunity and the combined effect of multiple moderators. Table 3 further reveals that all the tested hypotheses are supported as p value is significant for all the tested relations including moderated effects. Additionally, when zero does not lie between the lower confidence interval (LLCI) and the upper

confidence interval (ULCI), the effect is significant.

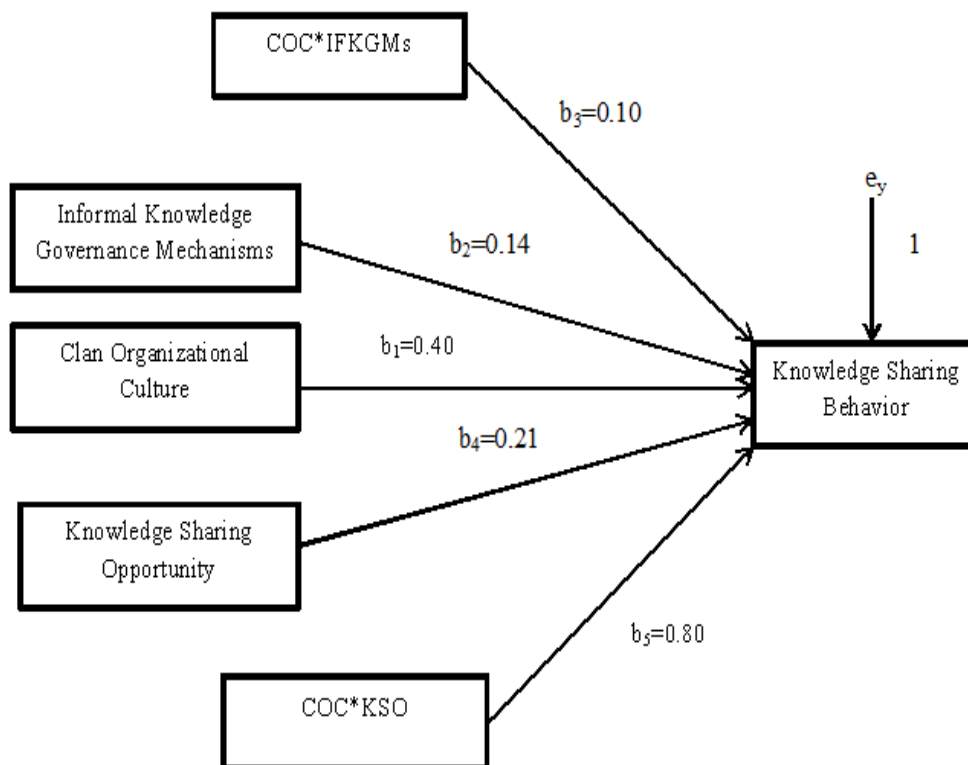


Figure 2: Statistical Diagram

COC=Clan Organizational Culture, IFKGMs=Informal Knowledge Governance Mechanisms, KSO=Knowledge Sharing Opportunity

Figure 2 shows the statistical diagram of the direct and moderating effects of predictors on the dependent variable. From Figure 2 and Table 3, we can see that

COC (b_1) = 0.40, $t(273) = 6.33$, $p < 0.001$

Hence, hypothesis 1 is accepted that clan organizational culture has a positive influence on knowledge sharing behavior. It can be interpreted as, for every one unit increase in COC, we get a 0.40 unit increase in KSB. The result is in line with previous studies (Suppiah & Sandhu, 2011) where it was found that clan culture is positively associated with knowledge sharing.

IFKGMs (b_2) = 0.14, $t(273) = 6.33$, $p < 0.05$

Hence, hypothesis 2 is accepted that informal knowledge governance mechanisms have a positive influence on knowledge sharing behavior. It can be interpreted as, for every one unit increase in IFKGMs, we get a 0.14 unit increase in KSB. This result supports the findings of Huang et al. (2013) that there is a positive influence of IFKGMs on KSB.

KSO (b_4) = 0.21, $t(273) = 6.33$, $p < 0.05$

This leads to acceptance of hypothesis 3 that knowledge sharing opportunity has a positive influence on knowledge sharing behavior. Zero does not lie in any of the LLCI and ULCI for these hypotheses. It can be interpreted as, for every one unit increase in KSO, we get a 0.21 unit increase in KSB. Findings are in compliance with what was examined by Huang et al. (2013).

Table 5: Conditional Effect of X on Y at Values of the Moderator(s):

| KSO | IFKGMs | Effect | se | t | p | LLCI | ULCI |
|---------|---------|--------|--------|--------|--------|--------|--------|
| -1.5924 | -0.9541 | 0.1807 | 0.0731 | 2.4719 | 0.0141 | 0.0368 | 0.3247 |
| -1.5924 | 0.0000 | 0.2742 | 0.0753 | 3.6418 | 0.0003 | 0.1260 | 0.4224 |
| -1.5924 | 0.9541 | 0.3676 | 0.1009 | 3.6440 | 0.0003 | 0.1690 | 0.5662 |
| 0.0000 | -0.9541 | 0.3076 | 0.0685 | 4.4933 | 0.0000 | 0.1729 | 0.4420 |
| 0.0000 | 0.0000 | 0.4011 | 0.0633 | 6.3347 | 0.0000 | 0.2764 | 0.5257 |
| 0.00000 | 0.9541 | 0.4945 | 0.0867 | 5.7038 | 0.0000 | 0.3238 | 0.6652 |
| 1.5924 | -0.9541 | 0.4346 | 0.0876 | 4.9618 | 0.0000 | 0.2621 | 0.6070 |
| 1.5924 | 0.0000 | 0.5280 | 0.0774 | 6.8216 | 0.0000 | 0.3756 | 0.6804 |
| 1.5924 | 0.9541 | 0.6214 | 0.0922 | 6.7412 | 0.0000 | 0.4400 | 0.8029 |

Level of confidence for all confidence intervals in output is 95.

All three predictors were mean centered prior to analysis.

For interaction 1, that is CoC and IFKGMs, 0.0808 is the LLCI and 0.3465 is the ULCI. Zero does not lie between this confidence interval and the interaction effect is significant with $p < 0.05$. Hence, hypothesis 4 is accepted and we conclude that knowledge sharing opportunities in an organization moderate the positive relationship between COC and KSB such that

the relationship is stronger if more opportunities are provided to organizational members for sharing knowledge.

Mean of COC is 4.98 as given in Table 2. Subtracting and adding standard deviation (SD) 1.29 from mean gives values of 3.69 and 6.27 approx. Table 5 gives the conditional effect of independent variable COC on dependent variable KSB at different levels of moderators. There are significant p-values at all levels of IFKGMs and KSO. As we go from lowest value - 1.59 to

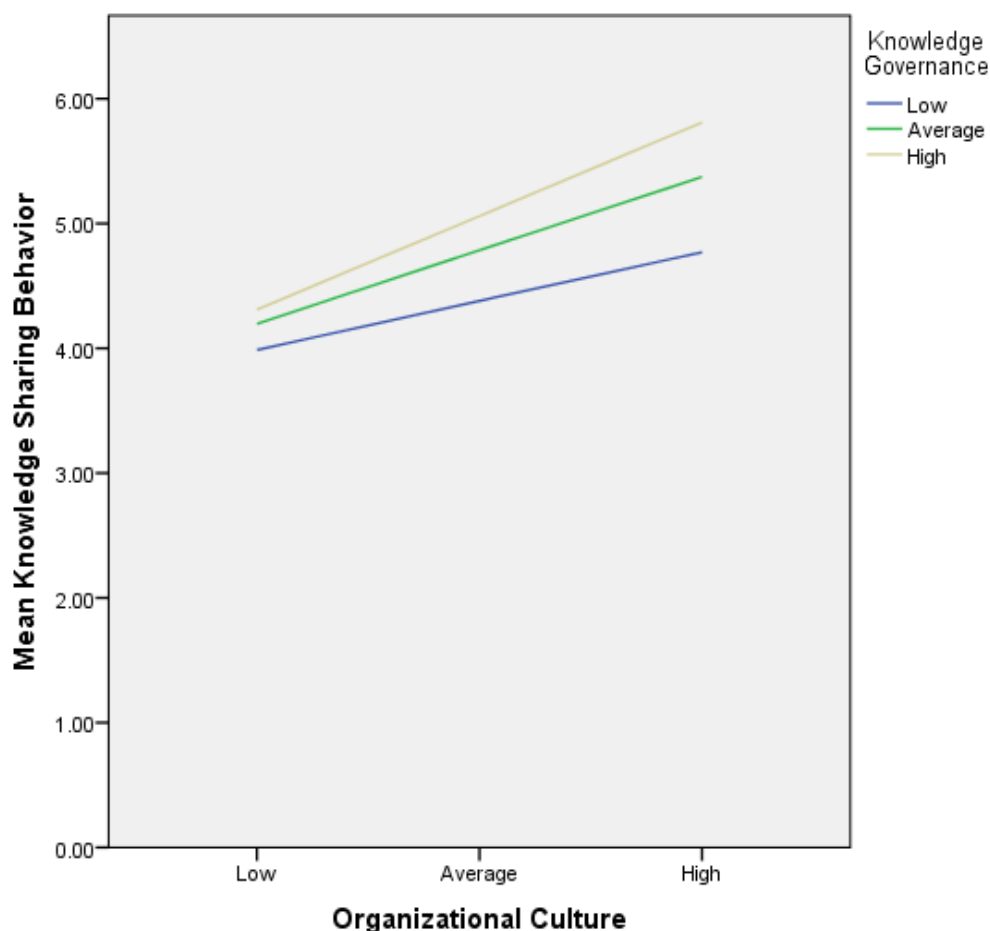


Figure 3: Moderating effect of informal knowledge governance mechanism

Slopes of lines in Figure 3. The effect of knowledge governance mechanisms on the relationship between clan organizational culture and knowledge sharing behavior is positive at all points on the line as the sloping is moving upward as we go from lowest to highest values of contextual variable IFKGMs denoted by knowledge governance in Figure 3. Hence, it is concluded that in presence of informal knowledge governance mechanisms, organizational members are more open to share their knowledge with other organizational members when the organization adopts clan organizational culture.

Similarly, for interaction 2, that is COC and KSO, 0.0035 is the LLCI and 0.1923 is the ULCI. Zero does not lie between this confidence interval and the interaction effect is significant with $p < 0.05$. Hence, hypothesis 5 is accepted and we conclude knowledge sharing opportunity moderates the positive relationship between COC and KSB such that the relationship is stronger in presence of informal knowledge governance mechanisms. Table 5 shows that at all levels of knowledge sharing opportunity, that is from lowest -0.95 to highest 0.95, p-value is significant. It can be seen in Figure 4, where slope of lines is moving in upward direction at all levels of knowledge sharing opportunity.

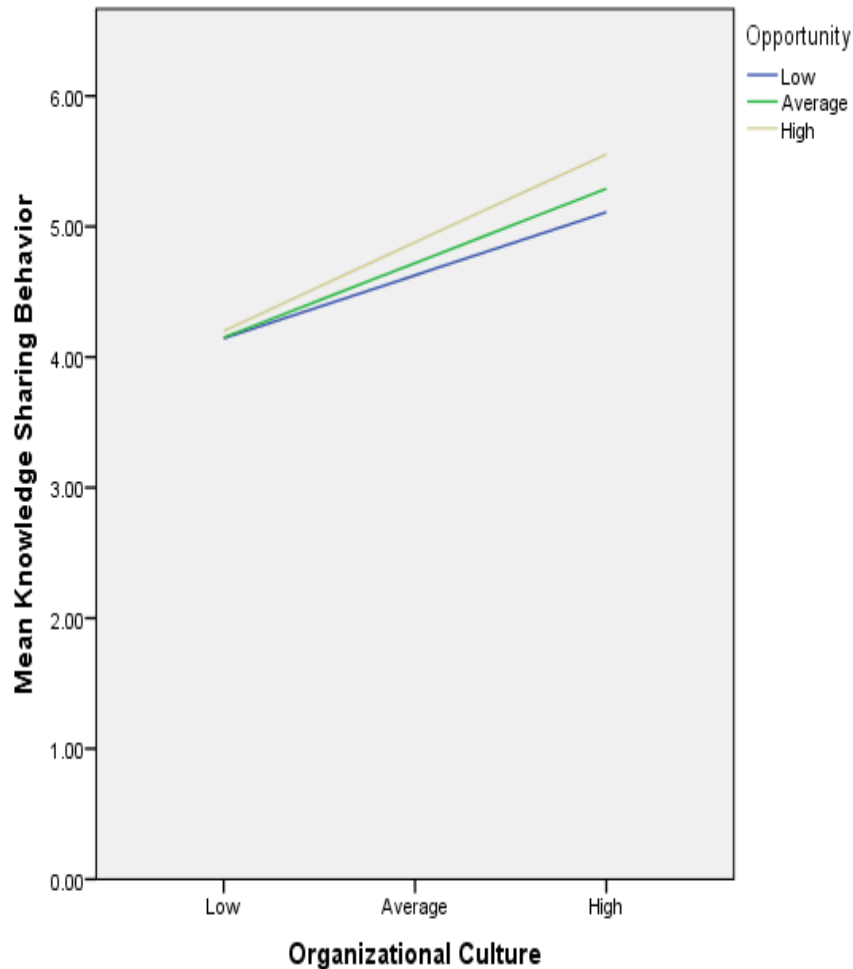


Figure 4: Moderating effect of knowledge sharing opportunity

Hence, conditional effect of COC on KSB is given by following equation:

$$\begin{aligned} \text{Conditional effect of COC on KSB} &= b_1 + b_3\text{IFKGMs} + b_5\text{KSO} \\ &= 0.40 + 0.10 \text{IFKGMs} + 0.21 \text{KSO} \end{aligned}$$

Keeping the value of KSO constant, there would be an increase of 0.10 unit in KSB for every unit increase in IFKGMs, and keeping the value of IFKGMs constant, there would be an increase of 0.21 unit in KSB for every unit increase in KSO.

It can be concluded from above that presence of knowledge sharing opportunities had a moderating conditional effect on the relationship between COC and KSB. When an organization provides knowledge sharing opportunities to its members, interaction effects are more visible in a clan organizational culture, as people are more interactive and willing to share their knowledge with other organizational members. Studying the interaction effects is an attempt to fill the gap that organizational processes and individual factors that hinder or help knowledge sharing in a certain

organizational culture are examined as suggested by (Aquilani et al., 2017).

5. Discussion

How IFKGMs and KSO predict KSB? These were the research questions to examine the effect of organizational level variable on knowledge sharing behavior of employee at workplace. Overall model is significant and all the examined relationships are significant and in the intended direction. Although previous research is in general agreement of the influence of organizational culture on knowledge sharing behavior (Matic et al., 2017), there are some exceptions. Many studies have studied the underlying mechanisms that effect knowledge sharing (Huang et al., 2013) but very few studies

have explored the contextual factors that hinder or support knowledge sharing in a given culture. This study tested the moderating effect of two contextual variables on the relationship between organizational culture and knowledge sharing behavior to understand the conditions that enhance the chances of inter-organizational knowledge transfer.

As the SET posits knowledge sharing is an exchange process. There must be some conditional factors that affect the knowledge outcomes. The findings affirm that adapting flexible and knowledge supportive organizational culture enhances the probability that the employees will be willing to share knowledge at their workplaces. Choice of the right type of organizational typology and mix of right conditions is unavoidable to improve the knowledge related outcomes in any organization. The study thus supports the idea that informal governance arrangements and ample opportunities in an organization have a multiplicative effect on knowledge sharing behavior.

Findings of the study suggest that informal opportunities to discuss and share problems, social get together, coffee breaks and the like create a synergistic effect by providing the organizational members with an opportunity to meet up and discuss several issues and help to find ways to resolve them. These opportunities are a form of social exchange that help to develop mutual trust and let people share their knowledge with others more confidently. Moderating effects of two contextual variables, IFKGMS and KSO was in the desired direction at all three levels of moderating variable, i.e., low, average and high. It signifies that presence of the opportunities and informal arrangements to share knowledge have a considerable positive impact on quality and quantity of knowledge shared even if opportunities are not ample enough or informal mechanisms are infrequently utilized.

Our assertion that IFKGMS and KSO acts as a catalyst in organizations by multiplying the effect of organizational culture on KSB needs further investigation. Social exchange theory asserts that human behavior is about certain cost benefit analysis and selection of best alternatives. In the field of management sciences and organizational behavior, this theory is used to explain reciprocal, mutually satisfying exchange process. Satisfaction or value gained could be in terms of

knowledge gained by one individual and the recognition of the knowledge holder as a knowledge source. When both realize that they have something valuable to offer, exchange takes place. Social exchange process generates many opportunities to bring knowledge source and the recipient closer together and hence the result, greater willingness to transfer and receive knowledge.

Findings of the study suggest that research in Western context (Huang et al., 2013) is generalizable to Pakistani context. IFKGMS are not something documented like formal mechanisms but they have reasonable influence in strengthening the effect of organizational culture on KSB. This study is consistent with the call to test the theories developed and tested in Western culture, in a non-Western context. This examination is consistent with Intezari et al. (2017) for future research in the field of knowledge management. This study validated previous studies by generalizing examined relations and added to the literature by examining the contextual effects of multiple mediators. It also highlighted the need for exploring more boundary conditions by introducing distinct contextual factors like cultural norms in future studies involving KSB.

6. Limitations and Future Directions

Future research should explore the role of other plausible contextual factors in the relationship between organizational culture and knowledge sharing behavior. For example, moderating effect of formal knowledge governance mechanism, knowledge sharing motivation and/or ability can be tested in future studies. Other cultural types from the framework may be examined like hierarchy, market and adhocracy. Impact of personality traits on knowledge sharing behavior may be examined in future studies. This study examined the relationships through lens of SET, future studies may utilize different theoretical paradigms. Opportunity is one of the components of Ability Motivation Opportunity (AMO) framework (Applebaum et al., 2001). Future studies may utilize the additive and multiplicative versions of the AMO framework. Common method bias was dealt in the study but future studies can address this problem by utilizing dyad as a unit of analysis.

The items in the survey instrument are susceptible of social desirability bias. The fundamental cause behind shared methods

variance is participant's social desirability (Podsakoff, Mackenzie & Podsakoff, 2012; Hur et al., 2016). By directly measuring social desirability bias, future studies can control its effect. To detect the seriousness of this issue, for partial correlation, desirability can be introduced as a marker variable providing more concrete relationships among organizational culture and knowledge sharing behavior. Another limitation is that sample was drawn from higher education sector in Pakistan that lowers the external validity. Future studies should draw samples from other industries like, IT, financial institutes, medical, services and manufacturing industries to check the external validity of the results. One of the limitations of the study is although individual behavior is a demonstration of organizational behavior; this study did not employ any controls for organizational effect that may apparently involve differences at organizational level. A multi-level model approach like hierarchical linear modeling may be used to avoid confusion in methodology.

7. Implications for Researchers and Practitioners

The study provides valuable implications for practitioners in the field of knowledge management. Managers should address the contextual factors that contribute to KSB. Cultural values and norms should be knowledge conducive. Organizational and individual factors should be aligned and embedded in the culture to reap the advantages of knowledge management and related processes. Knowledge sharing is a social process where both receiver and knowledge holder gain something of value. The right combination of organizational factors with selection of right individuals leads to greater willingness to share knowledge. Organizations should be prudent in this dynamic era to hire individuals who socialize and understand the organizational values and norms of behavior. There should be enough interaction opportunities for individuals to develop friendship and trust so they are more comfortable to share their power source, i.e. knowledge with people at their workplace without fearing losing their knowledge power. Knowledge holders should be duly acknowledged and their contribution in the form of knowledge, experience and expertise be recognized.

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