Information Technology Capability a Tool to Expedite Higher Organizational Performance

Mobeen Zahra¹, Dr. Waseem Ul Hameed², Dr. Muhammad Fiaz³, Muhammad Farhan Basheer⁴

Abstract

The major purpose of this study is to examine the mediating role of knowledge management between information technology capability and organizational performance in small and medium-sized enterprises (SMEs). SMEs have been broadly acknowledged as the springboard for supporting economic development, however, the organizational performance of Pakistani SMEs is low which require significant level of information technology capability. Total 1500 operational, functional and upgraded registered SMEs are involved in the manufacturing of textile to meet the local and international commitments. The population of this study was based on these SMEs. The nature of this study is quantitative on cross-sectional research design. Most of respondent were manager, senior officer, and executives. Total 300 questionnaires were distributed by using sample random sampling. Data were analyzed by using PLS-SEM. The findings of the study have shown the agreement with the proposed hypotheses of the study and found that information technology capability has positive effect on organizational performance. Additionally, knowledge management is playing a mediating role. Therefore, this study will be helpful for owner and managers of SMEs in textile sector accessing the importance of information technology and knowledge management for better performance.

Keywords: Information Technology Capability, Knowledge Management, Organization Performance, SMES.

1. Introduction

Small and medium-sized enterprises (SMEs) have been broadly acknowledged as the springboard for supporting economic development (Bianchi, Glavas & Mathews, 2017; Gray & Jones, 2016). Because SMEs have significant contribution in economic development (Azarloo et al., 2017). They have also been featured by many micro and other smaller businesses in an unorganized way (Ngoma et al., 2017; Mahmood & Hanafi, 2013). Everchanging environment has made the economies to realize the importance of SMEs and pushed them to accelerate the growth of their small and

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medium enterprises. Pakistan is also facing a similar challenge and shifting its focus from heavy industry to small and medium industry.

Small and Medium Enterprise Development Authority (SMEDA) which accounts for the development of 90 percent SMEs across the Pakistan. According to SMEDA the SMES employee 80 percent of total labor force and made 40 percent of contribution in GDP. SMEs have recognized as crucial components of national economic growth and development in both developed and developing economies (Aigboduwa & Oisamoje, 2013; Akinwale, 2018; Ogunyomi, & Bruning, 2016). SMEs' contribute to GDP of many nations' economy, for instance, 53 percent in Japan and Germany, 51 percent in UK, 45 percent in India, 50 percent in Poland, 45 percent in South Africa and approximately 49 percent in Korea (Ismail, Abdul-Halim, & Joarder, 2016). SME's are also used as a tool to reduce poverty, create employment and major driver of economic growth through wealth creation and serves a major variable for economic private sector, development and partnership (Mahmood & Hanafi, 2013; Scutotto, Del, Bresciani, & Meissner, 2017).

The declining performance of Pakistani SMEs coupled with declining Pakistani ranking to 138th out of 189 countries in the business Index has become a matter of grave concern for Pakistani policy makers (Hameed & Naveed, 2019). The Pakistani SME sector continues to face problems in growth as well as competitiveness (Wahga, Blundel & Schaefer, 2015). As SMEs contribute about 40 percent in GDP and employing major portion of population. Despite their contribution in employment generation as well as innovation through technological enhancement, SMEs in Pakistan have been facing challenges such as inadequate skills for entrepreneurship, lack of market orientation (Husain et al., 2016).

Many information technology (IT) experts have shifted their focus on resource-based view (RBV) to be one of the key theoretical perspectives to answer the inquiry related to how and why IT affects the organization performance (OP) (Palacios-Marqués et al., 2015, Pérez-López & Alegre, 2012). It was argued that using resources to implement strategies, the capabilities could be leveraged to attain competitive advantage (Barney & Clark, 2007). This definition has been argued to become the most widely used among IT scholars in recent years (Liu et al. 2013). Whereas the influence of IT on performance is still a least explored area in developing countries. To put it straightforward terms, little or no attention has been given to explore the role of IT capabilities in fostering the performance of SMEs in developing countries like Pakistan.

Knowledge management has become most valuable due to several reasons. Studies have undertaken the link between knowledge management (KM) and OP. For instance, Seleim and Khalil (2007) showed a study to inspect the relationship between KM (acquisition, application, creation, transfer, and documentation) and OP (effectiveness) in 30 Egyptian software firms. They showed that all dimensions of KM influenced significantly OP. On a similar note, Zaied et al. (2012) examined the relationship between KM (structural KM, technical KM, cultural KM, and human KM) and OP in Egypt. The findings indicated a significant influence of KM elements on OP.

The role of IT is significant, and its competence was considered as a main component in an organization to improve performance (Pebrianto, 2013; Liu et al., 2013). However, lack in IT is one of the major problems in most of the SMEs (Ayandibu & Houghton, 2017). Moreover, IT capability construct was related to the OP through increasing efficiency, decreasing long-term cost, evolving reliability in service and
decreasing errors (Tippins & Sohi, 2003). Based on the available literature, the researcher had not come across any study that integrates KM as mediators between information technology capabilities and OP in Pakistan. Even though there have been many studies that attempted to attain the relationship between KM, IT and OP of SMEs, there is the need to have a more comprehensive study with a very sound approach that will look into SMEs performance with the mediating role of KM in the relationship between information technology capability (ITC) and OP.

The goal of this study is to scrutinize the mediating role of KM in the relationship between ITC and OP. To achieve the goal of the study, the study has following objectives;
1. To explore the relationship between ITC and OP.
2. To explore the relationship between ITC and KM.
3. To explore the relationship between KM and OP.
4. To explore the mediating role of KM between ITC and OP.

The present study is being carried out on SMEs in textile sectors in Pakistan. In author knowledge, this will be the first study, which is studying the mediating role of KM in the relationship between ITC and OP. As per recommendations (Dada & Fogg., 2016) SMEs sector has paid less attention about IT.

2. Literature Review and Hypothesis Development

2.1 Influence of Information Technology Capability on Organization Performance

Many IT experts have shifted their focus on RBV to be one of the key theoretical perspectives to answer the inquiry related to how and why IT affects OP (Karimi Mazidi et al., 2014; Liu et al., 2008; Liu et al., 2013; Pérez-López & Alegre, 2012). A more recent quantitative study conducted by Ong and Chen (2013) discussed about the influence of IT capability on various constructs of OP. Their study that covers 480 matched-firms and secondary data from Information Week and CompStat database reveals that IT capability significantly influences all the three constructs. They suggest that the significant level of firm value is higher than that OP, indicating that IT capability was more related to firm value than performance.

Many prior studies (e.g., Bhatt & Grover, 2005; Santhanam & Hartono, 2003) have documented the relationship between ITC and firm performance which indicates that the relationship is well established (Chege, Wang, & Suntu, 2019; Sabherwal et al., 2019). However, the nature of relationship is still a mystery as many scholars reported a negative while other have reported a positive relation between these two variables. Based on the study of theory and empirical research first hypothesis can be formulated, namely.

\[ H_1: \] ITC has a significant influence on OP.

2.2 Influence of Information Technology Capability on Knowledge Management Capability

Chung et al., (2016) indicates that the IT also enhances the ability of organizational memory. As an organization that creates knowledge at every stage, both declarative and procedural, IT collects a lot of valuable information. IT provides an ideal mechanism
for linking individuals, which is also considered as a part of the organizational memory (Mesa et al., 2013). Ramadani et al., (2017) argues that IT systems create excellence by transforming the company-specific knowledge in a particular asset that is almost impossible to imitate by competitors.

Information technology (IT) acted as KM enabler. As IT and KM has significant relationship with each other (Tahir, 2020). With the advancement in IT has made the process of knowledge creation, storing and dissemination much easier than before. IT and tools such as document management system, database engines, retrieval engines, data mining, knowledge portals, workflow systems, help-desk applications, chat rooms, conferencing software, emails, messaging and electronic publishing systems (Gray & Tehrani, 2003; Marwick, 2001) have been used to facilitate KM and integration. It eases the dissemination of valuable knowledge across geographic proximity (Decarolis & Deeds, 1999). Nonaka and Takeuchi (1995) specifically defined IT as the mode of dissemination of explicit knowledge, which can be internalized by individual to gain better understanding. IT is also recognized as an intermediary tool and act as knowledge integrator (Dixon, 2000). With the help of IT, the organization can manage both their explicit as well as tacit knowledge (Hansen et al., 1999). More centralized and common knowledge repositories can be developed to store the explicit knowledge that can be retrieved and shared by people within the organization. In general, organization’s KM initiatives can be linked to three common applications of IT: (1) best practices coding and sharing; (2) organizational knowledge repositories development; and (3) knowledge networks creation.

IT, which comes with appropriate document classification, will make the process of managing and retrieval at ease. Knowledge can be easily shared among organizations. Nevertheless, an organization needs to have proper processes and methodologies to manage their knowledge repositories else garbage in, garbage out. There were number of models that have been applied investigating the IT usage behavior and among most frequently used is Technology Acceptance Model (TAM) (Davis, 1989). TAM specifically identified two components; perceived ease of use (PEOU) and perceived usefulness (PU) in determining the individual behavioral intention towards IT usage.

Noor et al. (2005) conducted a study where TAM was used as a conceptual model. Their results showed positive effect with intention to share behavior. Hsu and Lin (2008) also included TAM in their study to investigate the effect of social factors on blog usage behavior. The findings showed ease of use has positive relationship with enjoyment, together with reputation and altruism towards blogging attitude. Both cases showed that IT does play a role in encouraging people to share and disseminate knowledge. Furthermore, based on the study done by Handzic et al. (2008), it was indicated that IT played a relatively greater role to support the knowledge codification than personalization KM strategy. Based on the above discussion, it is likely indicated that IT has an impact on the effectiveness of KM and therefore this study has included IT as one of the factors to investigate its effect on SMEs in Pakistani context.

\[ H_2: \] IT has a significant influence on KM.

2.3 Influence of Knowledge Management on Organizational Performance
Agbim et al. (2013) indicated that KM capabilities were positively related to OP. In another study, Kharabsheh, Magableh, and Sawadha (2012) inspected the relationship between KM activities (communication, knowledge capturing and acquisition, the capability to experiment and create new knowledge, training and competences development, and knowledge management policies) and OP in 13 pharmaceutical companies in Jordan. They found a positive and direct association between KM activities and OP (Lombardi, 2019; Martinez-Martinez et al., 2019).

Guided by RBV of the organizations are intentionally adopting KM, expecting to acquire and sustain high levels of OP (Anantatmula, 2007). Jantunen (2005) maintained that knowledge of firm acts as a strategic asset, assisting the firm in the maintenance of its competitive capability in a fast-paced environment. Knowledge management helps to facilitate people to innovate, cooperate and select efficient decision. In other words, KM main goal is propelling people to focus on high quality knowledge (Du Plessis, 2005).

Knowledge management scholars are of the consensus that effective KM is the root of competitive advantage and enhanced performance (Wong, 2004). However, despite its significance, only a few studies have highlighted the relationship between the two (e.g., Anantatmula, 2007; Boumarafi & Jabnoun, 2008; Choi & Lee, 2003; Liu, Chen, & Tsai, 2004; Marques & Simon, 2006; Zack et al., 2009) even though there is evidence that KM is related to OP. For instance, Gold, Malhotra, and Segars (2001) showed that knowledge infrastructure ability had a significant and favorable impact on OP.

Knowledge management has become invaluable owing to several reasons. To achieve success in the present ever-changing global economy, organizations need to decrease the overall time of operations. In a recent empirical study, Agbim et al. (2013) examined the impact of KM abilities on OP (revenue growth, costs, profit margins, cash flow, and operating income) in Nigeria. The results specified that KM capabilities were positively related to OP.

In evaluating the relationship between KM and performance, Zack et al., (2009) observed that KM was connected to the dimensions of OP. Other scholars also showed a positive association between KM and OP in the US. As shown earlier, empirical evidence shows that HRM practices were found to enhance KM (e.g., Agbim et al., 2013; Gharakhani & Mousakhan, 2012; Gholami, Asli, Nazari-Shirkouhi, & Noruzy, 2013; Kharabsheh, Magableh, & Sawadha, 2012; Seleim & Khalil, 2007; Zaied et al., 2012). Based on the argument of RBV and the empirical evidence, the following hypothesis is proposed;

\[ H_3: \text{There is a positive relationship between KM and OP.} \]

2.4 The Mediating role of Knowledge Management in the relationship between Information Technology Capability and Organization Performance

The organizations always put their performance as their priority in sustaining the competitive advantage and KM representing organizational most important competitive advantage factor (P.F. Drucker, 1993). Lee and Sukoco (2007) postulate that for many organizations, their performance improvement does not only depend on the success of tangible assets deployment and natural resources but also on how knowledge is been managed effectively. This is supported by Gloet and Barrell (2003) who highlighted that
organizations treat KM as their path towards competitive advantage where indirectly it has an impact to their bottom line. There are various methods in measuring OP from the views of different stakeholders’ perspectives. From the financial perspective, more often organizational success is linked to tangible units of financial outcomes like profit and cost saving (Thurbin, 1994), economic value-added, cash flow and net operating income, whereby Dixon (1999), Thurbin (1994) and Smith (1999) measured financial perspective from the aspect of assets, budgets, products and services, operations, markets and human resources. In addition, from the customer perspective, OP will be measured from the value proposition that it brings such as customer satisfactions with the possibility of generating more sales (Chen, Huang, & Cheng, 2009). The measurements covering both the value that the customers are getting such as quality of products, response time and service performance as well as the outcomes of these value propositions. From the internal process perspective, it focuses on all key processes and activities that an organization need to provide in order to give better value to the customers (Robinson et al., 2006). Moreover, innovation and learning perspective focuses on skills and capabilities development to support the internal processes (Robinson et al., 2006).

Nevertheless, knowledge is seen as crucial resources in any organization, and therefore effective KM via capabilities development could contribute to key aspects of OP (Andrew, 2001). Darroch (2005) defined effective KM as effectively and accurately usage of resources which will produce better financial performance and innovation. Whereas, Holsapple and Wu (2008) stressed the role of KM on the improvement of innovation, more organized efforts coordination, and assist in better decision-making process give an impact on OP. For a long run, KM effort is considered as an investment where in return, these organizations are expecting better OP. Therefore, KM is viewed as the critical success factor in an organization. It is hypothesized that the degree of KM implementation in an organization has positive impact on its performance (Marques & Simon, 2006). Five dimensions were measured which are: (1) growth; (2) capital profitability; (3) stakeholder satisfaction; (4) operational and financial efficiency; and (5) competitive position and all these five dimensions are statistically significant. The empirical investigation’s results of various studies confirmed a positive effect of KM on OP.

In line with the above discussion, the dynamic capability perspective, which is originally based on the RBV theory, further emphasizes on the significance of resource (Liu et al., 2008). The firms that integrate IT resources to create discrete capabilities contribute to sustainable competitive advantage. Chi and Sun (2015) described that, IT resources cannot provide organizations sustainable competitive advantage by itself, and ITC is one of the crucial factors to help organizations obtain a long-term competitive advantage. Since a firms’ capabilities are not easy to be replicated or imitated compared to firms’ resources, so it is suggested the “IT capability” term or concept to explain the value of IT as part of the capabilities of the firm.

Thus, it is clear that the role of IT capability towards the OP is complex and with diverse findings. It can be argued that the effect of the IT capability on the OP is not consistent. Therefore, attempts to investigate the effect of IT capability on the performance of organizations could provide the foundation to explain how IT capability affects OP and add to the literature. The mediating effect can also be examined by
linking the test on the independent variables under investigation. From above discussion, the following hypotheses are formulated.

\[ H_4: \] KM mediates in the relationship between ITC and OP.

**Figure 1. Theoretical framework of the current study**

![Theoretical framework of the current study](source: Author Compilation)

3. **Research Method**

3.1 **Research Design**

In the current study research, design is cross-sectional. The nature of this study is quantitative. Therefore, a survey was carried out to collect the data from SMEs. The surveys are conducted via email.

3.2 **Unit of Analysis**

The population process is beginning with determining the total population size. Population is referring group of people, things or event of interest to investigate while sample is subset of population as cited in Sekaran and Bougie (2013). The target populations were registered SMEs which are involved in textile manufacturing and registered in Lahore and Faisalabad Chamber of commerce and industry, Pakistan. The sampling frame was obtained from the Lalitpur Chamber of Commerce and Industry (LCCI) and Faisalabad Chamber of Commerce and Industry (FCCI), Pakistan that has 1500 operational, functional and upgraded registered SMEs, which are involved in the manufacturing of textile to meet the local and international commitments.

3.3 **Sampling Technique**

In a survey the target population was huge where the random sampling is more advantageous and offer produce more accurate and reliable statistically significant
results (Sekaran & Bougie, 2010; Zikmund et al., 2010). Therefore, random sampling was used, and 300 survey questionnaires were distributed among the Pakistani SMEs.

3.4 Operationalization of Variable
Measures are adapted from literature. Specifically, Narver and Slater’s (1990) measures were adapted to measure organization performance, which is validated, by Hirvonen and Laukkanen (2016). KM is defined as the processes in an organization that are used to develop knowledge in an organization (Gold et al., 2001). According to Chuang (2004), KM can be categorized into few groups: resource of structural KM, resource of cultural KM, resource of human KM, and resource of technical KM. To elaborate further, structural KM resource is based on the work of Gold et al. (2001), ITC Scale. Adopting the measurement suggested by Tippins and Sohi (2003) and validated by Pérez-López and Alegre (2012), the respondents were asked to rate the items related to ITC on a measurement scale. All the scale items are provided in appendix.

3.5 Model Specification
To test the proposed hypothesis, we have used the following model:

Direct Relation
\[ OP = \alpha + \beta_1 KM + \epsilon \]  
\[ OP = \beta_0 + \beta_1 ITC + \epsilon \]  
\[ ITC = \beta_0 + \beta_1 KM + \epsilon \]  

Mediation Models
\[ OP = \beta_0 + \beta_1 KM + \beta_2 ITC + \epsilon \]  

Where, 
\( \alpha \) is a constant 
\( \beta_1-2 \): Is the coefficient, in which every marginal change in variables on dependent variable affects correspondingly. 
\( \epsilon \) is the error terms

4. Data Analysis and Findings

4.1 Preliminary Analysis
Prior to explanation of main analysis and subsequent results, we will discuss data examination. During data, entry data was assessed and inspected for missing values as well as potential errors in data entry. During the examination, we found no such error after that we analyzed for missing values. According to Hair et al. (2007), it is almost impossible to have a large set of data with no missing value.

4.2 Measurement Model Assessment
Measurement model was examined based on PLS-SEM (Ringle, Wende & Becker, 2015). This study followed various steps of PLS-SEM by following Hameed et al., (2018). The results of CFA for our proposed model are presented in Fig 2 and Table 1. Questions KM7, KM8, KM10, KM11, KM12, KM13, KM16, KM18, KM19, KM20, OP2, ITC1, and ITC2 were dropped from the analysis because there estimated value was less than 0.50.

Figure 2. Measurement Model Assessment
We have used two measures to check reliability: one simple reliability test to found Cronbach alpha and other is the measure of composite reliability (CR), using smart PLS. The Table 1 shows the values of Cronbach's alpha. Cortina, J.M. (1993) categorized the acceptability of Cronbach's alpha as excellent if greater than 0.90, good if it is greater than 0.80 and less than 0.90, acceptable if it is greater than 0.70 and less than 0.80, questionable if it is greater than 0.60 and less than 0.70 and unacceptable if below 0.60. In our case as per results presented in Table 1, reliability the variables KM (0.886), OP (0.836), and ITC (0.901) which are good and excellent. Our next measure is CR with a cut of value 0.70. In our case as per results presented in Table 1, reliability of three variables KM (0.908), OP (0.848), and ITC (0.991) is good. Which indicates an overall excellent reliability. Factor loadings is shown in Figure 1. According to Brown, J. D. (1996) “the degree to which a test measures what it claims, or purports, to be measuring”. Moreover, AVE should be above 0.5 (Fornell & Larcker, 1981).

Table 1. Measurement Model Results

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Management (KM)</td>
<td>0.886</td>
<td>0.908</td>
<td>0.511</td>
</tr>
<tr>
<td>Organization Performance (OP)</td>
<td>0.836</td>
<td>0.884</td>
<td>0.603</td>
</tr>
<tr>
<td>Information Technology Capabilities (ITC)</td>
<td>0.901</td>
<td>0.919</td>
<td>0.577</td>
</tr>
</tbody>
</table>

Source: Author Compilation
Moreover, Table 2 shows that the discriminant validity. Discriminant validity was examined through square root of AVE. Square root of AVE is shown in bold format that is more than below values. Thus, discriminant validity is attained.

### Table 2: Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>ITC</th>
<th>KM</th>
<th>OP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology Capabilities (ITC)</td>
<td>0.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Management (KM)</td>
<td>0.496</td>
<td>0.706</td>
<td></td>
</tr>
<tr>
<td>Organization Performance (OP)</td>
<td>0.601</td>
<td>0.535</td>
<td>0.777</td>
</tr>
</tbody>
</table>

Source: Author Compilation

4.3 **Structural Model Assessment**

Structural equation modeling (SEM) was preferred to test various hypotheses. It is shown in Figure 3. All the equations in the proposed model which are consistent with manifest or latent which are also known as observed and unobserved respectively can be solved this powerful tool of SEM can simultaneously solve by this powerful tool (Chin et al., 2008). Path analysis SEM is a technique for observed variables; it measures the direct or indirect relationship (Meyers et al., 2006). This is the reason we have preferred structural equation modeling over conventional multiple regression techniques.

This study has five (03) direct hypotheses as revealed in Table 3 and Figure 3. All direct hypotheses (H1, H2 and H3) were supported, as the t-value is greater than
Mediation outcomes is also significant. Finding has conformed hypotheses results and hypothesis $H_1$, $H_2$, and $H_3$ are accepted significantly. Mediation is given in Table 4 that support $H_4$.

### Table 3. Direct Effect

<table>
<thead>
<tr>
<th></th>
<th>($\beta$)</th>
<th>(M)</th>
<th>SD</th>
<th>T Value</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITC $\rightarrow$ KM</td>
<td>0.496</td>
<td>0.495</td>
<td>0.088</td>
<td>5.630</td>
<td>0.000</td>
</tr>
<tr>
<td>ITC $\rightarrow$ OP</td>
<td>0.445</td>
<td>0.442</td>
<td>0.062</td>
<td>7.180</td>
<td>0.000</td>
</tr>
<tr>
<td>KM $\rightarrow$ OP</td>
<td>0.315</td>
<td>0.313</td>
<td>0.063</td>
<td>5.011</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Author Compilation

### Table 4: In-Direct Effect

<table>
<thead>
<tr>
<th></th>
<th>($\beta$)</th>
<th>(M)</th>
<th>SD</th>
<th>T Value</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITC $\rightarrow$ KM $\rightarrow$ OP</td>
<td>0.524</td>
<td>0.521</td>
<td>0.089</td>
<td>5.859</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Author Compilation

5. **Discussion and Conclusion**

The results of the study highlighted a great deal of agreement with our proposed relation between ITC and OP. Which indicates that in Pakistani SMEs the role of ITC is unquestionably important (Liu et al., 2013; Pebrianto, 2013). Furthermore, it also makes us realized that IT capability provide a foundation of finding a competitive advantage (Bhatt & Grover, 2005; Chi & Sun, 2001; Liu et al., 2008, Pérez-López & Alegre, 2012; Liu et al., 2013; Karimi Mazidi et al., 2014). The findings of the study also shed a light that Pakistani SMEs increasingly realizing the role of IT capabilities in increasing the OP, which is well established in the literature. The results of the study provide support to RBV.

The findings of the study have provided the support to our proposed hypothesis that ITC has positive and significant impact on KM. The results are consistent with the prior findings of Chung et al., (2016), who found that the IT also enhances the ability of organizational memory. As an organization that creates knowledge at every stage, both declarative and procedural, IT collects a lot of valuable information. IT provides an ideal mechanism for linking individuals, which is also considered as a part of the organizational memory (Mesa et al.,2013). Ramadani et al., (2017) argues that IT systems create excellence by transforming the company-specific knowledge in a particular asset that is almost impossible to imitate by competitors.

The third hypothesis of the study, which is about the relationship between KM and OP, is accepted significantly. The findings of the study are consistent with the study Agbim et al. (2013) which examined the impact of KM competences on OP (revenue growth, costs, profit margins, cash flow, and operating income) in Nigeria. Kharabshah, Magableh, and Sawadha (2012) inspected the connection between KM activities (communication, knowledge capturing and acquisition, the capability to experiment and create latest knowledge, training and competences development, and knowledge
management policies) and OP in various pharmaceutical companies in Jordan. They found a positive and direct relationship between KM practices and OP. Guided by RBV of the firm organizations are intentionally adopting KM, expecting to acquire and sustain high levels of OP (Anantatmula, 2007).

The findings of our study are in line with the findings of many prior KM scholars are of the consensus that effective KM is the root of competitive advantage and enhanced performance (Wong, 2004). However, despite its significance, only a few studies have highlighted the relationship between the two (e.g., Anantatmula, 2007; Boumarafi & Jahnoun, 2008; Choi & Lee, 2003; Liu, Chen, & Tsai, 2004; Marques & Simon, 2006; Zack et al., 2009) even though there is evidence that KM is related to OP. For instance, Gold, Malhotra, and Segars (2001) showed that knowledge infrastructure ability had favorable effect on OP. As shown earlier, empirical evidence shows that HRM practices were found to enhance KM (e.g., Agbim et al., 2013; Gharakhani & Mousakhani, 2012; Gholamip et al., 2013).

The outcomes of the study have highlighted a great deal of agreement with our proposed relation between KM, IT and OP. The results are consistent with the findings of Ramadani et al., (2017) argues that IT create excellence by transforming the company-specific knowledge in a particular asset that is almost impossible to imitate by competitors. Therefore, outcomes of the study revealed that ITC has positive effect to expedite OP in Pakistani SMEs and KM is playing a mediating role to boost OP.

5.1 Study Implications, Limitations and Future Directions

This study provides theoretical implications by introducing KM as a mediating variable. It contributes in the literature by investigating that KM support ITC towards OP. This study will be helpful for owner and managers of SMEs in textile sector accessing the importance of ITC and KM for better performance. It provides significant clues for practitioners while making the strategies for performance of organization. However, this study has several limitations. Firstly, this study is only based on survey based in which a questionnaire is used. The addition of interviews may lead to better results. Therefore, future research should be on mix method approach. Secondly, this study is only based on Pakistan. This study can be improved by comparing the various other countries with each other’s. Thirdly, this study used cross-sectional research design due to shortage of resources. Future research should be on the longitudinal research design to get more accuracy in results.
References


Appendix

Survey Items

Table A: Knowledge Management (KM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>STK1</td>
<td>Our organization structure facilitates the discovery of new knowledge</td>
<td>Chuang (2004)</td>
</tr>
<tr>
<td>STK2</td>
<td>Our organization structure facilitates the creation of new knowledge</td>
<td></td>
</tr>
<tr>
<td>STK3</td>
<td>Our organization has reward system for sharing knowledge.</td>
<td></td>
</tr>
<tr>
<td>STK4</td>
<td>Our organization facilitates knowledge exchange across functional boundaries.</td>
<td></td>
</tr>
<tr>
<td>STK5</td>
<td>Our organization employees are readily accessible</td>
<td></td>
</tr>
<tr>
<td>CTK1</td>
<td>Employees understand the importance of knowledge.</td>
<td>Chuang (2004)</td>
</tr>
<tr>
<td>CTK2</td>
<td>Employees are valued for their individual expertise.</td>
<td></td>
</tr>
<tr>
<td>CTK3</td>
<td>Employees are encouraged to interact with other groups.</td>
<td></td>
</tr>
<tr>
<td>CTK4</td>
<td>The benefits of sharing knowledge outweigh the costs</td>
<td></td>
</tr>
<tr>
<td>CTK5</td>
<td>Employees are encouraged to explore and experiment</td>
<td></td>
</tr>
<tr>
<td>TNK2</td>
<td>Our organization establishes process knowledge.</td>
<td></td>
</tr>
<tr>
<td>TNK3</td>
<td>Employee uses technology to cooperate with inside person</td>
<td></td>
</tr>
<tr>
<td>TNK4</td>
<td>Use technology to search for new knowledge</td>
<td></td>
</tr>
<tr>
<td>TNK5</td>
<td>Use technology to retrieve knowledge about its products and processes.</td>
<td></td>
</tr>
<tr>
<td>TNK6</td>
<td>Use technology to retrieve knowledge about its markets and competition.</td>
<td></td>
</tr>
<tr>
<td>TNK7</td>
<td>Employees can understand not only their own tasks but also others’ tasks</td>
<td>Source: Author Compilation</td>
</tr>
</tbody>
</table>

Table B: Information Technology Capability (ITC)

<table>
<thead>
<tr>
<th>Code</th>
<th>Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITK1</td>
<td>Our institution IT department staff is knowledgeable on IT operations.</td>
<td>Tippins &amp; Sohi (2003) &amp; Pérez-López &amp; Alegre (2012)</td>
</tr>
<tr>
<td>ITK2</td>
<td>Our institution IT department staff is able to solve IT-related problems in the branch.</td>
<td></td>
</tr>
<tr>
<td>ITK3</td>
<td>Our institution IT department staff is knowledgeable on new computer-based innovations.</td>
<td></td>
</tr>
<tr>
<td>ITB1</td>
<td>Our institution has an independent Management Information System (MIS) department.</td>
<td>Tippins &amp; Sohi (2003) &amp; Pérez-López &amp;</td>
</tr>
<tr>
<td>ITB3</td>
<td>Our institution’s branches are linked by a computer network through Wide Area Network (WAN).</td>
<td>Alegre (2012)</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>ITB4</td>
<td>Our institution is able to customize software applications if necessary.</td>
<td></td>
</tr>
</tbody>
</table>

**IT Operation**

<table>
<thead>
<tr>
<th>ITP1</th>
<th>We routinely utilize computer-based systems to access information concerning our banking operations.</th>
<th>Tippins &amp; Sohi (2003) &amp; Pérez-López &amp; Alegre (2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP2</td>
<td>We employ computer-based systems to analyze customer and market information.</td>
<td></td>
</tr>
<tr>
<td>ITP3</td>
<td>We frequently utilize decision-support system when managing customer information.</td>
<td></td>
</tr>
<tr>
<td>ITP4</td>
<td>We have set procedures for collecting customer information from online sources before disbursing a loan. (e.g. from SFD database)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author Compilation

### Table C: Organization Performance (OP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP1</td>
<td>Overall performance of our organization last year was</td>
<td>Hirvonen &amp; Laukkanen (2016); Narver and Slater (1990)</td>
</tr>
<tr>
<td>OP2</td>
<td>Overall performance of our organization relative to competitors last year was</td>
<td></td>
</tr>
<tr>
<td>OP3</td>
<td>Overall sales growth of our organization relative to major competitors last year was</td>
<td></td>
</tr>
<tr>
<td>OP4</td>
<td>Through the last year, our unit cost of service delivered was</td>
<td></td>
</tr>
<tr>
<td>OP5</td>
<td>Customer satisfaction level on services provided by our organization last year was.</td>
<td></td>
</tr>
<tr>
<td>OP6</td>
<td>All the employees of our organization have a level of job satisfaction that last year was.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author Compilation