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The Top Managers of SMEs Can Derive the Disruptive Innovation Through Knowledge Process Capabilities and Creativity of Subordinates

[a]Khurram Zafar Awan, [b] Muhammad Ibrahim Abdullah, [c] Muhammad Usman

[a]PhD Scholar, Department of Management Sciences, COMSATS University Islamabad, Lahore Campus, Pakistan
[b] Associate Professor, Department of Management Sciences, COMSATS University Islamabad, Lahore Campus, Pakistan
[c] Associate Professor, NUST Business School, National University of Sciences and Technology, Islamabad, Pakistan

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ABSTRACT

Globalization trends have been increasing all over the world and firms are overly emphasizing advanced technologies in the business world for gaining competitive advantages. While disruptive innovation is also a trigger for these firms to adapt and capture lower-end markets. This is a big challenge for the top managers of organizations to derive disruptive innovation by encouraging their subordinates for utilizing the knowledge process capabilities and creating novel ideas. The purpose of this study was to examine the relationship of knowledge process capabilities with disruptive innovation of the manufacturer and service sector small and medium enterprises. Data was collected from 194 senior managers of manufacturer and service sector SMEs in Pakistan (N = 194) and valid scales were used for measuring all constructs of this study model. SPSS and AMOS programs were used for analyzing the CFA of the measurement model and SEM of the study model. The study results indicated significant and positive relationships between knowledge process capabilities and subordinate creativity and disruptive innovation. Furthermore, subordinate creativity was completely mediated in the relationship between knowledge process capabilities and disruptive innovation. This study contributed to the literature on knowledge management and innovations. This is a cross-sectional study and can guide SMEs to adopt disruptive innovation for capturing low-end markets where lower-stream customers are demanding cheap products/services. Through practicing this study model, practitioners, researchers, and CEOs of SMEs can foster disruptive innovation.

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Corresponding author's email address: khurramzafarawan@gmail.com

1. Introduction

Due to rapidly changing business environment, each organization is practicing to adapt optimal innovation. Firms foster innovative strategy for growing its business across the borders and ultimately purpose to capture global markets (du Plessis, 2007). Due to rapidly changing customers' needs, fast technological change and extensive competitive pressure, innovation has become more complex. Many organizations are finding the ways for bringing sustainable innovative changes but ignore the disruptive innovation (Christensen et al., 2013). The lower stream customers are demanding lower price and quality products or services in low-ended national & international markets(Hang & Chen, 2021). The just overly emphasis on continue innovation by small and medium and multination enterprises can leave gap in the low ended markets through ignoring the lower stream customers' demands (Hopp et al., 2018). The demands of these customers force the firms to focus on disruptive innovation.

Disruptive innovation is conceptualized as the exploration of new products and exploitation of existing products, which are lower price and lower performing including services, which are affordable and easily accessible by all types of customers (Christensen, 1997). In the current era, the numerous markets of developing countries are demanding cheap products or services (Hang & Chen, 2021) due to high inflation rates. However, very rare studies empirically investigated how disruptive innovative strategy could be successfully implemented by SMEs (Christensen et al., 2013; Feder, 2018; Govindarajan & Kopalle, 2006b; Sadiq et al., 2022; Wang et al., 2022).

Therefore, current study focuses on how to design the strategy for fostering the disruptive innovation. The purposes of this study to encourage the employees for effectively management of knowledge process capabilities which can improve their learning capabilities. Knowledge process capability involves four elements i.e. knowledge acquisition, knowledge conversion, knowledge application and knowledge protection. Organizations acquire knowledge by engaging activities like learning and development, systematization and saving it (Gold et al., 2001).

Individual creativity can increase by utilization of their knowledge management, technical and spatial skills (Amabile, 1998). Knowledge sharing by the employees with each other can foster their creativity and shape creative behavior through functional flexibility and psychological empowerment (Yasir et al., 2021). Knowledge management positively influences the employee creativity through dynamic learning capabilities(Allameh et al., 2020).

Recently the empirical studies also investigated the significant and positive relationship of knowledge with employee creativity (Arif et al., 2022; Lee, 2018; Rhee & Choi, 2017). The knowledge workers who are collaboratively developing their self-capabilities can foster the disruptive as technological innovations(Schmitt, 2019). Knowledge can be shared by practicing more and more, studying new ways, and lastly summarize the learning (Alavi & Leidner, 2001).

Thus, this study followed s*ocial learning theory*(Bandura, 2006)which stated the learning capabilities could not possible without evaluating the social actions, personal perceptions and emotions. Knowledge can play vital role for learning. It is very clear that formal and informal knowledge can shape the behavior of people, and after learning new ways, people can create new ideas for the development of organizations. SLT supports the argument that employees of SMEs can learn through effectively management of their knowledge under the support of top management.

Furthermore, they can produce innovative ideas for personal and organizational development.

Additionally, knowledge process has direct as well as indirect influences on innovation and organization performance by increasing innovation capability(Mardani et al., 2015). So, it should be the main priority of the leaders to play their role for effective knowledge process capabilities toward innovation and better organizational performance(Nawab et al., 2015). The leaders should manage the formal and informal knowledge develop learning environment, which can further positively affect the organization innovation(Karkoulian et al., 2013). Knowledge is also directly affecting the innovation management and sustainable activities(Dávila et al., 2019) and effectively management of disruptive innovation(Alberti-Alhtaybat et al., 2019) of small medium enterprises. Many scholars have been suggesting that knowledge process capabilities by the employees can further support organizational innovation specifically management of disruptive business innovation (Ilbiz, 2020; Lin et al., 2018; Lovrenčić & Sekovanić, 2019; Salavati et al., 2015). This assumption also followed cognitive learning theory(Bandura, 2006)which explains the influencing factors (external and internal) that can affect the personal mental process (retrieving, storing, observing, attending, memorizing and interpreting the new knowledge) and further shape the individual behavior toward innovative form.

Lastly, after improvement of learning capabilities, subordinates can generate new and novel ideas in the exchange further they strive to bring disruptive innovative change in their SMEs. The knowledge process capabilities do not just have direct effect on innovation despite this innovation can be encouraged by increasing employee creativity and absorptive capacities(Zhao et al., 2021).

The empirical study found significant and positive affect of knowledge process on firm innovation and individual creativity whereas individual creativity played mediation role in the relationship of knowledge process capabilities with firm innovation (Imran et al., 2018). Human resource management practices and knowledge management can foster innovation capabilities of SMEs by motivating the employees for generating novel ideas and innovation (Parwita et al., 2021). The HR practices can increase efficiency of task performance additionally knowledge hiding, creativity and individual innovation have mediation effects in the direct relationships of HR practices with innovation (El-Kassar et al., 2022).

Knowledge management positively influences the firm innovation and employee can support this relationship through individual creative and innovative work behavior(Ndwiga, 2019). The knowledge process capabilities of employees can foster the firm innovative performance, competitiveness, and culture through individual creative contributions (Byukusenge et al., 2016; Naidoo, 2010; Uzkurt et al., 2013).

According to indirect relation of knowledge process capabilities on disruptive innovation by subordinate's creativity, this theory followed social exchange theory(Blau, 1964) which illuminates that the subordinates want to gain rewards (intrinsic and extrinsic) from their respective Boss in the exchange of generating novel ideas and increasing individual creative performance. They can generate creative ideas through knowledge management further in the exchange of this practice to formulate innovative strategies and gain appreciations from their immediate supervisor on these valuable contributions.

This study will be help full for the CEOs and managers of SMEs who are striving to find best solutions to capture global markets and want to gain competitive advantage. This can guide the leaders and managers of SMEs that how can capture low-ended market through implementation on disruptive innovation. The CEOs/managers can motivate their related subordinates for generative innovative ideas for acquiring lower stream customers' demands in the low-ended markets. Furthermore, this creative session by the subordinates can also foster the all types of innovation according to market demands.

2. Theory and Hypotheses Development

2.1 Knowledge process capabilities and subordinate creativity

Knowledge is the broad terminology relates to personal metal processes about any object, condition and process and after learned from these activities, individuals can enable to contribute regularly in their relevant fields and to fulfill their demands and satisfactions(Alavi & Leidner, 2001). The term knowledge can explain by following two themes:

- "A condition of understanding gained through experience or study".
- "The sum or range of what has been perceived, discovered, or learned".

Knowledge process capability involves four dimensions like acquisition, conversion, application, and protection of knowledge (Gold et al., 2001).

Albert Bandura explained the concept of social learning theory which focuses the people are learning through observations, acting as role models, copying the other behaviors, perceptions, attitudes, believes and others' emotional responses (Bandura, 2006). In the current study we focus on the creative contributions by subordinates who are working under the role top level mangers. They can increase their creativity through effectively management of knowledge process capabilities (Carmeli & Azeroual, 2009). So, SLT supports this argument, knowledge management and knowledge sharing shape the individual behavior toward creativity and innovation. If an individual wants to come up with fruitful ideas employee needs to receive stated knowledge.

In order to solve problem creatively exchange of knowledge is crucial because it enhance individual cognitive capacities(Hu & Zhao, 2016). Knowledge management and sharing can reduce the useless efforts of which foster optimal innovation(Amabile, 1988). Individual innovative behavior leads to encourage the firm innovation (Naranjo-Valencia et al., 2017). Although scholars have been analyzing that motivation, supervisory encouragement and personality traits can enhance individual innovation(Anderson et al., 2014). However, individuals' innovation can increase by utilization of their knowledge management, technical and spatial skills(Amabile, 1988).

The empirical study concluded that knowledge process capability elements have meaning positive impact on individual innovation(Rahoo et al., 2020). Scholar suggested that firms should design its infrastructure and capabilities in alignment with its knowledge management practices as it helps to encourage employee's innovative behavior. Knowledge sharing by the employees with each other can foster their creativity and shape innovative behavior through functional flexibility and psychological empowerment(Yasir et al., 2021).

Knowledge management positively influences the employee creativity through dynamic

capabilities(Allameh et al., 2020). Intensity and quality of knowledge process can significantly boost the individual creativity of employees(Lee, 2018) which can further contribute in the firm innovative performance. Knowledge management behavior encourages the employee creativity whereas knowledge hiding negatively affect on creativity(Rhee & Choi, 2017). Recently an empirical study also investigated the significant and positive relationship of knowledge with employee creativity(Arif et al., 2022). On the basis of above explained literature and social learning theory, this study proposed following hypothesis:

H1: *Knowledge process capabilities have significant and positive effect on subordinate creativity.*

2.2 Knowledge process capability and disruptive innovation

Employees are the persons who do job for achieving personal and organizational goals. The workers are the important assets for the organization but not building; they play strategic roles according to designated positions in any organization(Dugguh & Dennis, 2014). Innovation is conceptualized as the creation of novel ideas which have ultimately purpose to exploration of new products, services and processes. Moreover, it supports the firm to adapt every type of changes according to market demands and produce real solutions by focusing on customers' values (Harkema, 2003).

Theories of *Organizational Cognition and Learning* defined, as the organizations are establishing knowledge sharing and learning environment among their employees. When employees manage their knowledge effectively, their learning capabilities also increase which further foster the organizational capabilities to adapt innovation (Bandura, 2006). Learning organzations emphsized on knowledge creation pratices through this organizations can foster their innovation capabilities (Nonaka & Takeuchi, 1995).

Knowledge based view believes that knowledge is the main strategic resource factor for learning organizations to increase their innovative performance and sustain their competitive position. However, it is difficult task for these organizations to establish knowledge sharing and protection mechanism without support their employees (Nickerson & Zenger, 2004; Soto-Acosta et al., 2018). Therefore, the organizations must be encouraging their employees for increasing knowledge process capabilities for the development of organizations. The extensive literature shown the knowledge process capabilities is the main pillar for bringing innovation (Andreeva & Kianto, 2011; Palacios Marqués & José Garrigós Simón, 2006).

Knowledge is most vigorous element in innovation. Knowledge management is assistance for the firms. Firms can increase their innovative capabilities through knowledge management and ultimately purpose to exploration and exploitation of products or services. Knowledge sharing is the strong and significant factor of knowledge management, which can enhance the individuals' capabilities of employees. Knowledge management increase individual innovation capabilities, which further leads toward firm innovation(Ologbo et al., 2015). Knowledge of organization is the most valuable asset to gain the competitive edge and it helps organization survival in competitive business situation.

The scholar concluded that all the elements of knowledge process capability has positive impact on organization performance with the exception of already establish process in the

organization that does not properly match with the new process to dispose knowledge (Tubigi &Alshawi, 2015).

Knowledge sharing process conceptualized as the two or more individuals exchanged their knowledge and explored something new (de Vries et al., 2006). In this process, one individual shared his/her knowledge the other(s) received it (Ardichvili, 2008). Knowledge is important for innovation management and sustainable activities(Dávila et al., 2019) and effectively management of disruptive innovation(Alberti-Alhtaybat et al., 2019) of small medium enterprises.

The knowledge workers who are collaboratively developing their self-capabilities can foster the disruptive as technological innovations(Schmitt, 2019). Many scholars have been suggesting that knowledge management capabilities by the employees can further support organizational innovation specifically management of disruptive business innovation (Lin et al., 2018; Lovrenčić & Sekovanić, 2019; Salavati et al., 2015). This study also assumed another following hypothesis based on previous studies, organization learning, and cognitive theories:

H2: *Knowledge process capability positively effects the disruptive innovation.*

2.3 Subordinate creativity and disruptive innovation

Subordinate creativity of employees defined as tendency of individual workers to create novel ideas, encourage these ideas and successfully implementation of ideas for increasing the organizational performance and firm's innovation capabilities (De Jong & Den Hartog, 2010; Huhtala & Parzefall, 2007; Janssen, 2000; Lewin & Massini, 2004). The argument is consistent with Social Exchange Theory (Blau, 1964)explains the individual wants to give something in the exchange of take something (give and take) and maintain this relationship. He/She evaluates the costs and benefits before taken appropriate decision. Hence, the creativity of novel ideas by employees is considered as production and in the exchange of this session firms can adapt innovation (Amabile, 1988).

Individual level creativity of the subordinates can foster the organizational level innovation (Oldham & Cummings, 1996). Many scholars suggested the creative and novel ideas generating by the individuals in the organization can lead toward organizational innovation and it is strong source for bringing innovation (Redmond et al., 1993; Shalley & Gilson, 2004).

The innovation is existing in the organization based on two main mechanism; individual creativity mechanism and organizational innovation mechanism and both are associating with each other(Bharadwaj & Menon, 2000). The authors investigated the empirical relationships of individual creativity & innovation with the organizational innovation and explained five four phases of individual creativity as such idea generation, idea elaboration, idea championing and idea implantation ultimately through phases individual innovation leads to increase the innovation at organizational level(Perry-Smith & Mannucci, 2017). The innovation in organization could be increased through creative skills practiced by employees(Amabile, 1988).

Although, individual creativity by employees can foster innovation however it can also boost the disruptive innovation(Williams et al., 2021). Individual and team creativity is affected by human resource management technologies, digitization and disruptive innovation(Ogbeibu et al., 2021).

Study investigated the creativity in the theme of disruptive innovation and found creative performance can be increased in the era of disruptive innovation by implementation on leader-member exchange behavior(Setiawan et al., 2020). Three stages as such ideas generation, ideas incubation and ideas scaling can foster disruptive innovation successfully(O'Reilly & Binns, 2019). The logically generation, incubation and scaling of the ideas linked with creativity. Strategic departments of the firms strive to foster the disruptive innovation through creativity, entrepreneurship, and risk taking(Govindarajan & Kopalle, 2006b). The scholars also discussed the matter that individual creativity can be difficult to manage effectively by the firms when these firms are facing shifting paradigm disruptive environment from dynamic environment(Majumdar & Jain, 2015). Past studies and social exchange theory support to propose following hypothesis:

H3: *Subordinate creativity has positive effect on disruptive innovation*

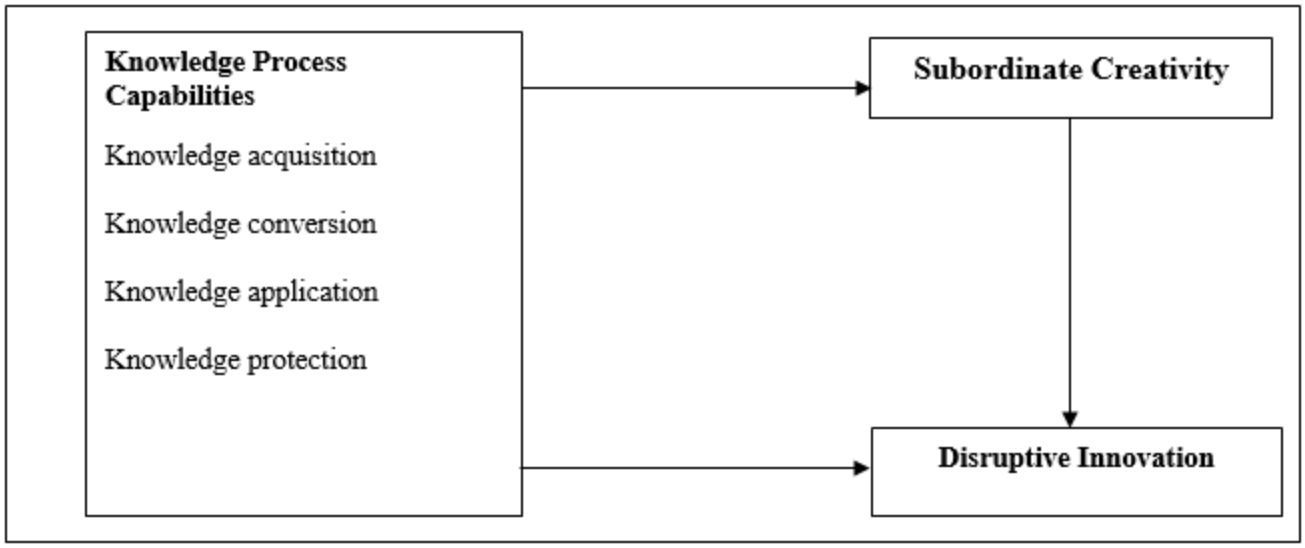
2.4 Subordinate creativity as mediator

SLT (Bandura, 2006) explains that employee behavior could be change when he/she wants to learn new knowledge and enhancing their creative skills, which has ultimately purpose to achieve their personal cognition along with the social cognition. SET(Blau, 1964) elaborates that the employee wants to gain rewards (intrinsic and extrinsic) by increasing individual creative performance and share his/her creative ideas and knowledge with the persons in the exchange of other also share their tacit knowledge with him/her. The knowledge management cannot directly affect the innovation despite this innovation can be encouraged by increasing employee creativity and absorptive capacities (Zhao et al., 2021). The empirical study found significant and positive affect of knowledge process on firm innovation and employee creativity whereas individual creativity mediated in the association of knowledge process and innovation (Imran et al., 2018). Human resource management practices and knowledge management can foster innovation capabilities of small and medium enterprises through supporting creativity and innovation of employee (Parwita et al., 2021).The HR practices can increase efficiency of task performance additionally knowledge hiding, creativity and individual innovation plays as mediating roles in the association of human resource practices and innovation (El-Kassar et al., 2022).

Knowledge management positively influences the firm innovation and employee can support this relationship through individual creative and innovative work behavior (Ndwiga, 2019). The individual creativity and innovation can mediate the relationship of KPC and firm performance, firm competitive advantages and organizational culture (Byukusenge et al., 2016; Naidoo, 2010; Uzkurt et al., 2013). The study analyzed disruptive technologies and suggested that knowledge process capabilities can encourage employee for creative and novel contributions that further lead to exploration of new products as such disruptive innovation (Prabhala & Rao, 2017). Most of the studies have been focusing on innovation between knowledge management and organizational performance whereas very few tested the relationship of employee creativity play as main role for increasing the organizational innovation including disruptive innovation through knowledge management. This study conjectured another following hypothesis:

H4: *Subordinate creativity positively mediates the relationship of knowledge process capabilities with disruptive innovation.*

Figure 1: Theoretical Framework



3. Research Methodology

3.1 Research philosophy

The positivism research philosophy was followed in this study because this is quantitative study and develops hypotheses and tests these hypotheses by using statistically techniques. Moreover, positivism ontology of this study explained the concept of knowledge process capabilities, employee creativity and disruptive innovation was real and unambiguous. Epistemology of current study described this study could be operationalized and objectively measurable by using valid instruments. Axiology of this study highlighted the researcher was contributed based on data.

3.2 Research design

The current study was explanatory (proposed hypotheses), casual (statistically testing the study hypotheses), cross sectional (first time conducted in Pakistan), and had non-contrived environment (no control over the respondents for responding accurately).

3.3 Population

The population of this study was manufacturer and service sector SMEs which are operating in Pakistan.

3.4 Sampling

Non-probability conveniently sampling technique was used to select senior managers from these SMEs for this study. 400 questionnaires were distributed among those managers of SMEs. All the senior managers have total freedom to response on the questionnaire for this study. The 237 managers were responded, while 194 responded properly and 41 did not response completely on the questionnaire. Therefore, the appropriate response rate was 48.5%.

3.6 Measurements

Knowledge process capabilities, employee creativity, and disruptive innovation variables were measured through valid instruments. All the items of structure questionnaire for measuring study variable were arranged in 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

3.6.1 Knowledge process capabilities

The knowledge process capabilities variable was measured by using valid instrument(Gold et al., 2001). This instrument was consisted on four dimensions as such knowledge acquisition practices, knowledge conversion practices, knowledge application practices, and knowledge protection practices. This study adopted five items of each dimension of knowledge process capabilities. The current study also analyzed the Cronbach's alpha reliability of knowledge acquisition (0.89), knowledge conversion (0.86), and knowledge application (0.83) and knowledge protection (0.88).

3.6.2 Disruptive innovation

Disruptive innovation was measured by adopting 4 items scale adapted(Govindarajan & Kopalle, 2006a). The respondents responded on this scale after understanding the concept of disruptive innovation. Cronbach's alpha reliability of this scale was 0.91.

3.6.3 Subordinate creativity

Measured the subordinate creativity using 4 items scale was adapted (Farmer et al., 2003). Cronbach's alpha reliability of this scale was 0.94.

4. Results and Analyses

The SPSS v.23.0 used for data management, analyze the normally distribution of data, respondents' profile, common method bias, and descriptive statics of respondents' data and Cronbach's alpha reliability of the respondents' data. Managed and prepared all data by using several following processes:

- Coded the data by using five-point Likert scale i.e. 1 for strongly disagree and 5 for strongly agree.
- The study data was carefully entered in SPSS (only managers who responded completely on the study questionnaires) and generated spreadsheet. Therefore, data did not find any missing value.
- Finally, treated the reverse coded items and transformed after computation on SPSS (subtract 6 from each reverse item).

4.1 Demographic Profiles

Table 1 shown the frequency and percentage of respondents who responded on the questionnaires and differentiated them on the basis of demographical characteristics as such gender, age, education, experiences, department and management level. Out of 194 respondents, 143 were male and 51 were female. Most of the respondents (151) were 25-40 years old and many respondents (137) had MS/M.Phil. degree. Most respondents (99) had less than 5 years experiences and followed others (70) had less than 10 years' experience. Most of the respondents (117) were working as strategists and others (61) followed were working as general managers. The most respondents (131) were middle level managers and followed (63) were working in top-level management of the firms.

Table 1: Demographic Profile of Respondents (N=194)

Demographical Characteristics	n	%	Demographical Characteristics	n	%
Gender			**Age**		

Male	143	73.3%	Below 25 years	18	9.3%
Female	51	26.3%	25-40 years	156	80.4%
			Above 40 years	20	10.3%
Education			**Experience**		
Graduation	37	19.1%	<5 years	99	51%
MS/M.Phil.	137	70.6%	6-10 years	70	36.6%
PhD	20	10.3%	11-15 years	21	10.8%
			Above 16 years	04	2.1%
Department			**Management Level**		
Finance/Accounting	9	4.6%	Top Level	63	32.5%
HRM	7	3.6%	Middle Level	131	67.5%
General Management	61	31.4%			
Strategic Unit	117	60.3%			

Note: N (Sample Size = 194), n presents the No. of respondents and % shows percentage of respondents w.r.t. socio-demographic characteristics.

4.2 Data Normality Testing and Descriptive Statistics

The normal distribution of all study variables has been analyzed through frequency distribution histogram(Elliott & Woodward, 2007), normal P-P plot (Field, 2009), absolute values of skewness and kurtosis (Altman & Bland, 1996; Field, 2009; Kim, 2013), the statistics and significance level of Kolmogorov-Smirnov and Shapiro-Wilk tests(Elliott & Woodward, 2007) by using SPSS.

Table 2: Data Normality and Descriptive Statistics

Variables	Skewness			Kurtosis			Descriptive Statistics	
	Statistic	SE	Z-Skewness	Statistic	SE	Z-Kurtosis	μ	σ
DIN	-0.058	0.18	-0.32	-0.298	0.35	-0.85	4.22	0.62
SCR	-0.362	0.18	-2.01	-0.609	0.35	-1.74	4.21	0.76
KAQ	0.035	0.18	0.19	-0.27	0.35	-0.77	3.52	0.77
KCN	0.087	0.18	0.48	-0.146	0.35	-0.42	3.42	0.67
KAP	0.084	0.18	0.47	-0.172	0.35	-0.49	3.44	0.64
KPT	0.028	0.18	0.16	-0.249	0.35	-0.71	3.48	0.71

Note: N (Sample Size = 194), Statistics shows value of skewness and kurtosis, SE indicates standard error, Z-skewness presents absolute values of skewness, Z-kurtosis presents absolute values of kurtosis, μ presenting mean value, σ presents standard deviation, KPC presenting knowledge process capabilities, DIN presenting disruptive innovation, SCR presenting subordinate creativity, KAQ presenting knowledge acquisitions, KCN presenting knowledge conversion, KAP presenting knowledge application, KPT presenting knowledge protection.

Table 2 indicated data was not deviated from the normal distribution. The results revealed that all absolute values of skewness of (DIN (-0.32), SCR (-2.01), KAQ (0.19), KCN (0.48), KAP (0.47), KPT (0.16) and kurtosis of DIN (-0.85), SCR (-1.74), KAQ (-0.77), KCN (-0.42), KAP (-0.49), KPT (-0.71) were less than 3.29 and greater than -3.29 (Kim, 2013). Hence, the study data was normally distributed and further study can perform CFA and SEM on AMOS.

The descriptive statistics has also shown in table 2 which described the mean values and

standard deviations of the respondents' data on DIN (μ=4.22, σ=0.62), SCR (μ=4.21, σ=0.76), KAQ (μ=3.522, σ=077), KCN (μ=3.42, σ=0.67), KAP (μ=3.44, σ=0.64), and KPT (μ=3.48, σ=0.71).

4.3 Assessment of Measurement Model

When study purpose to analyze the structural equation model, firstly must be assess the common method biasness, confirmatory factor analysis (convergent validity and discriminate validity) of measurement model (Henseler et al., 2009; Podsakoff et al., 2003).

4.4 Common Method Bias

Self-report surveys and socially desirable responses by the respondents on questionnaire could be created problem of common method bias. Common method bias problem can inflate the relationships between variables of measurement model(Conway & Lance, 2010). Although there is other many sources which could control the common method bias problem in the data and model (Podsakoff et al., 2003). However, two following techniques were used in this study to control common method biasness problem (Podsakoff et al., 2003):

- Performed confirmatory factor analysis of one-factor model and six-factor model and examined the chi-square differences and goodness of model fit indices. If the model fit indices of one-factor model do not better than and significant chi-square differences as compared to study main CFA model (six-factor model) then no common method bias problem exists in the study model.

- Determined the variation of single component (Harman's single factor) in the measurement model. If the variation of single component less than 50% then no common method bas problem presents in the study data.

Table 3 presents the results of these both techniques. The results revealed significant differences in chi-square ($\Delta\chi^2$= *2017.19,* Δ *df=15, p=0.000*) was found by comparison of one-factor model and six-factor model. It shown one factor model was not better than six-factor model. Moreover, goodness of fit indices (χ^2= *2452.126, df=377, SRMR=0.097, CFI=0.447, TLI=0.405, RMSEA=0.169*) were poorly fit with one-factor model while excellent fit (χ^2= *434.940, df=362, SRMR=0.028, CFI=0.981, TLI=0.978, RMSEA=0.032*) with six-factor model. Hence, this study results demonstrated the no common method biasness presented in the data and model.

χ^2 denotes Chi square, df abbreviates the degree of freedom, Δ shows change in value, p means probability of chidist (ABS($\Delta\chi^2$), ABS (Δdf) which is specific formula to determine the significant, SRMR presents standardized RMR, CFI presents comparative fit index, TLI presents Turker Lewis index, RMSEA presents root mean sum of error approximation.

Harman's single factor technique, which is widely used for assessing the confirmatory factor analysis (CFA) and it, is well sophisticated for testing the study hypotheses (Iverson & Maguire, 2000; Korsgaard & Roberson, 1995; Mossholder et al., 1998). Table 3 also shows the single component variation (38.268%) in the study measurement model that is less than 50%. So it means there was no any problem of common method bias in the study data. Further, this study can perform confirmatory factor analysis.

Table 3: Common Method Biasness

Model	χ^2 *(df)*	*Comparison*	$\Delta\chi^2$ *(Δdf)*	*p*	*SRMR*	*CFI*	*TLI*	*RMSEA*
Chi square difference test between two models								
Model 1 One-Factor Model	2452.126 (377)**				0.097	0.447	0.405	0.169
Model 2 Six-Factors Model	434.940 (362)**	Model1 Vs Model2	2017.19 (15)**	0.00	0.028	0.981	0.978	0.032
Harman's single factor explained total variation								
Component	**Initial Eigen values**				**Extraction Sums of Squared Loadings**			
	Total	**% of Variance**	**Cumulative %**		**Total**	**% of Variance**	**Cumulative %**	
1	4.209	38.268	38.268		4.209	**38.268**	38.268	
2	2.768	25.164	63.431					

*Note: N (sample size) =194*p<0.05, **p<0.01*

4.5 Confirmatory Factor Analysis

In confirmatory factor analysis, study examines the convergent and discriminate validities. If these validities are satisfactory the measurement model is appropriate for examining the structural equation model of the study. Convergent Validity: Convergent validity(Henseler et al., 2009) of all items (loaded their relevant latent constructs) can check by calculating the values of factor loadings of all items(Hulland, 1999), reliabilities (Cronbach's alpha and composite) and average variance extractions (AVE) (Fornell & Larcker, 1981), of every construct

Table 4: Convergent Validity of the Study Measurement Model

Variables and items	*λ*	*α*	*CR*	*AVE*
Knowledge Acquisition		0.90	0.90	0.65
Our firm has processes for acquiring knowledge about our customers.	0.76			
Our firm has processes for generating new knowledge from existing knowledge.	0.81			
Our firm has processes for acquiring knowledge about new services within our industry.	0.80			
Our firm has processes for acquiring knowledge about competitors within our industry.	0.87			
Our firm has processes for exchanging knowledge between individuals.	0.80			
Knowledge Conversion		0.89	0.89	0.62
Our firm processes for converting knowledge into the design of new services.	0.80			

Our firm processes for absorbing knowledge from individuals into the organization	0.78			
Our firm processes for distributing knowledge throughout the organization.	0.80			
Our firm processes for integrating different sources and types of knowledge.	0.77			
Our firm processes for replacing outdated knowledge.	0.77			
Knowledge Application		0.87	0.87	0.57
Our firm processes for applying knowledge learned from experiences.	0.71			
Our firm processes for using knowledge in development of new services.	0.80			
Our firm able to locate and apply knowledge to changing competitive conditions.	0.75			
Our firm makes knowledge accessible to those who need it.	0.80			
Our firm takes advantage of new knowledge.	0.72			
Knowledge Protection		0.90	0.90	0.64
Our firm processes to protect knowledge from inappropriate use inside the organization.	0.79			
Our firm processes to protect knowledge from inappropriate use outside the organization.	0.79			
Our firm processes to protect knowledge from theft from within the organization.	0.80			
Our firm incentives that encourage the protection of knowledge.	0.85			
Our firm technology that restricts access to some sources of knowledge.	0.77			
Subordinate Creativity		0.94	0.94	0.80
My subordinates try to find new ideas or methods first.	0.86			
My subordinates seek new ideas and ways to solve problems.	0.91			
My subordinates generate groundbreaking ideas related to the field.	0.92			
My subordinates are a good role model for creativity	0.90			
Disruptive Innovation		0.92	0.92	0.69
In your opinion, how disruptive were our firm's new product introductions during the past 5 years?	0.80			
Our firm rarely develops products/services that are disruptive in nature	0.81			
Our firm lags in exerting efforts to introduce disruptive products/services	0.89			
During the recent past, the products/services launched by our firm were targeted at a different segment of customers in the market	0.83			
During the recent past, the products/services introduced by our firm gradually became attractive for the mainstream customers in the market	0.82			

Threshold Values	>0.6	>0.7	>0.8	>0.5

Note: N (sample size = 194), λ= Presents factor loading score of measurements, α= Shows Cronbach's alpha, CR= denotes composite reliability, AVE= abbreviated as average variance extraction.

If the values of factor loadings of all items > 0.5, Cronbach's alpha > 0.7 (Mitchell & Jolley, 2010; Nunnally, 1978), Composite reliability> 0.8 (Henseler et al., 2009), and AVE > 0.5 (Götz et al., 2010) of every constructs the convergent validity will satisfactory exist. Table 4 presents the results of factor loadings (λ), Cronbach's alpha (α), composite reliability (CR), and average variance extractions (AVE) of study constructs and their related items.

The results revealed the factor loading scores of all items (λ > 0.5), Cronbach's alpha reliability (α > 0.7), composite reliability (CR > 0.8), and average variance extraction (AVE > 0.5) of all study constructs. Hence, it proved that the convergent validity of these all study constructs was satisfied(Henseler et al., 2009).

4.5.1 Discriminant validity

Compare the square root of AVE along with the Pearson correlation of one construct with the all other study constructs. If the square root of AVE is greater than the correlation values of this construct with all other constructs, it will satisfy the discriminant validity of that construct (Chin & Newsted, 1999).

Table 5: Discriminant Validity of the Study Measurement Model

Variables	1	2	3	4	5	6
DIN	0.83					
SCR	0.65	0.90				
KAQ	0.38	0.26	0.81			
KCN	0.43	0.33	0.45	0.79		
KAP	0.39	0.25	0.47	0.41	0.76	
KPT	0.38	0.28	0.53	0.41	0.53	0.80

***Note**: N (sample size = 194), α presenting Cronbach's alpha reliability, CR presenting composite reliability, Shaded values presetting square root of AVE (average variance extractions) of study variables, KPC presenting knowledge process capabilities, DIN presenting disruptive innovation, SCR presenting subordinate creativity, KAQ presenting knowledge acquisitions, KCN presenting knowledge conversion, KAP presenting knowledge application, KPT presenting knowledge protection.*

Table 5 presents the square root of average variance extraction values of all study variables and their correlations. The results exposed the values of square root of AVE (the diagonal shaded values) of all constructs were greater than along with their correlations of constructs with other constructs. Hence, the discriminant validity of study measurement model was satisfactory existed. Furthermore, this study determined the goodness of model fit indices of measurement model.

4.5.2 Measurement Model Fit

If the values of χ^2/df< 3, CFI > 0.90, TLI > 0.90, SRMR < 0.06, and RMSEA < 0.08, then it shows measurement model is acceptable with the study constructs (Hair, 2010; Kline, 2015). Table VI presents the results of goodness of the model fit indices of measurement model.

The results of χ^2/df (1.20), CFI (0.98), TLI (0.98), SRMR (0.028), and RMSEA (0.08) were existed under threshold values. Hence, the measurement model of this study was acceptable for

further SEM analysis (Hair, 2010; Kline, 2015). Before the direct and indirect analysis, study requires to test the fitness of overall study structure equation model(Hair, 2010).

Table 6: Model Fit Indices of Measurement Model

Model fit Indices	χ^2/df	p-value	CFI	TLI	SRMR	RMSEA
	1.20	*0.005*	*0.98*	*0.98*	*0.028*	*0.032*
Threshold Values	*< 3*	*< 0.05*	*> 0.90*	*>0.90*	*<0.06*	*<0.08*

***Notes**: χ^2/df presents ratio of chi square and degree of freedom, p-value presents significant level, CFI presents comparative fit index, TLI presents Turker Lewis index, SRMR presents standardized root mean square residual, RMSEA presents root mean square error of approximation.*

4.6 Structure Equation Model

If the values of χ^2/df< 3, CFI > 0.90, TLI > 0.90, SRMR < 0.06, and RMSEA < 0.08, then it shows structure equation model is acceptable with the study model (Hair, 2010; Kline, 2015).

Table 7: Model Fit Indices of Structure Equation Model

Model fit Indices	χ^2/df	p-value	CFI	TLI	SRMR	RMSEA
	1.19	*0.007*	*0.98*	*0.98*	*0.032*	*0.031*
Threshold Values	*< 3.00*	*< 0.05*	*> 0.90*	*>0.90*	*<0.06*	*<0.08*

***Notes**: χ^2/df presents ratio of chi square and degree of freedom, p-value presents significant level, CFI presents comparative fit index, TLI presents Turker Lewis index, SRMR presents standardized root mean square residual, RMSEA presents root mean square error of approximation.*

4.7 Direct effects

The current study followed path analysis technique for testing the direct relationships of knowledge process capabilities with disruptive innovation and employee creativity and analyzing the relationship of employee creativity with disruptive innovation. The direct effects of study variables predict the significant and positive/negative effects of exogenous variable on endogenous variable.

This technique examines the significant (t-value and p-value) regression coefficient (β) which measure the how much unit increases/decreases in dependent variable when one-unit increases/decreases in independent variable (Sobel, 1982). Additionally, it explains the significant variation (R^2) in dependent variable due to effect of independent variable. The decision (study hypothesis confirmed/not-confirmed) can make based on significant/not-significant direct relationships exist between these study variables.

Table 7 shows the results of goodness of the model fit indices of structure equation model. The results of χ^2/df (1.19), CFI (0.98), TLI (0.98), SRMR (0.032), and RMSEA (0.031) were conformed the threshold values. Thus, the structure equation model of this study was excellent fitted (Hair, 2010). Consequently, study further can analyze the direct and indirect effects of study constructs.

Table 8: Direct Relationships and Hypotheses Testing

Paths	β	SE	C.R.	P	R^2	Hypotheses/ Decision
KPC → SCR	0.40	0.13	4.29	0.000	0.16	H1: Supported
KPC → DIN	0.58	0.13	5.60	0.000	0.33	H2: Supported
SCR → DIN	0.64	0.07	8.67	0.000	0.42	H3: Supported

***Note**: N(sample size)=194, β shows the regression path coefficients, R^2 shows the squared multiple correlation, C.R. (t-statistics) presents the significance region and the P shows significance level, KPC presenting knowledge process capabilities, DIN presenting disruptive innovation, SCR presenting subordinate creativity.*

4.7.1 Knowledge Process Capability and Subordinate Creativity

Table 8 shows the direct relationship of knowledge process capabilities with subordinate creativity. The study results revealed significant and positive effect (β= 0.40, C.R = 4.29, p = 0.000) of knowledge process capabilities on subordinate creativity which described 0.40 unit increases in creativity of subordinates when one unit tend to increase the knowledge process capability. Moreover, the squared multiple correlation (R^2=0.16**) explained 16% significant variation in the creativity of subordinate due to knowledge process capabilities. Hence, the relationship between knowledge process capabilities and creativity of subordinate was significant and positive and hypothesis H1 is supported that "*knowledge process capabilities has significant and positive effect on subordinate creativity"*.

4.7.2 Knowledge Process Capability and Disruptive Innovation

Table 8 also presents the direct relationship of knowledge process capabilities with disruptive innovation. The study results exposed significant and positive effect (β= 0.58, C.R = 5.60, p = 0.000) of knowledge process capabilities on disruptive innovation which described 0.58 unit increases in disruptive innovation when one unit tend to increase the knowledge process capability. Moreover, the squared multiple correlation (R^2=0.33**) explained 33% significant variation in the disruptive innovation due to knowledge process capabilities. Thus, the relationship between knowledge process capabilities and disruptive innovation was significant and positive and hypothesis H2 is supported that "*knowledge process capability has significant and positive effect on disruptive innovation*".

4.7.3 Subordinate Creativity and Disruptive Innovation

Table 8 also demonstrates the direct relationship of subordinate creativity with disruptive innovation. The study results uncovered the significant and positive effect (β= 0.64, C.R = 8.67, p = 0.000) of subordinate creativity on disruptive innovation which described 0.58 unit increases in disruptive innovation when one unit tend to increase the subordinate creativity. Moreover, the squared multiple correlation (R^2=0.42**) explained 42% significant variation in the disruptive innovation due to subordinate creativity. Consequently, the relationship between subordinate creativity and disruptive innovation was significant and positive and hypothesis H3 is supported that "*subordinate creativity has significant and positive effect on disruptive innovation*".

4.8 Mediation Analysis

The current study also developed a hypothesis for testing the mediation analysis. The study investigated the mediation effects of subordinate creativity in the relationships between knowledge process capabilities and disruptive innovation (H4).

This study followed the four following rules for testing the mediation analysis(MacKinnon, 2012):

- The significant relationships between independent variable and mediating variable,
- The significant relationship between mediating variable and dependent variable,
- The significant variable of independent variable on dependent variable whereas mediating variable controlled.
- The significant coefficients for indirect path between independent variable and dependent variable through mediating variable. The bias corrected percentile method uses to analyze the indirect effects is significant or not.

Table 8 presents the significant and positive effects of knowledge process capabilities on employee creativity (H1) and disruptive innovation (H2) and effect of subordinate creativity on disruptive innovation (H3). Hence, this study was successfully followed these rules. Therefore, the study could be performed further mediation analysis.

4.8.1 Indirect Relationship of Knowledge Process Capability and Disruptive Innovation

Table 9 demonstrates the direct and indirect effects of knowledge process capabilities on disruptive innovation. The results revealed the direct effect of knowledge process capabilities on disruptive innovation without presence of subordinate creativity was significant and positive (*direct effect=0.58, p=0.000*).

Table 9: Mediation Analysis and Hypothesis Testing

Effects	Path	Direct Effect	P	Indirect Effect	Confidence Interval		Hypothesis Decision
					Lower Bound BC	Upper Bound BC	
Direct Effect Without Mediator	**KPC → DIN**	0.58**	0.00				**Subordinate creativity fully mediated in the relationship between KPC and DIN H4: Supported**
Direct & Indirect Effects with Mediator	**Path C KPC → DIN**	0.38 n.s	0.08				
	Path A KPC → SCR	0.40*	0.01				
	Path B SCR → DIN	0.50**	0.00				
	KPC→SCR→DIN R^2 = 0.54 ΔR^2 = 0.21			0.40*0.5 =0.20	0.041	0.435	

***Note**: N(sample size)=194, n.s present not significant, *P<0.05, **P<0.01, P shows significance level, BC denotes bias corrected, KPC presenting knowledge process capabilities, DIN presenting disruptive innovation, SCR presenting subordinate creativity,R^2 means squared multiple correlation, ,ΔR^2 explains change in squared multiple correlation.*

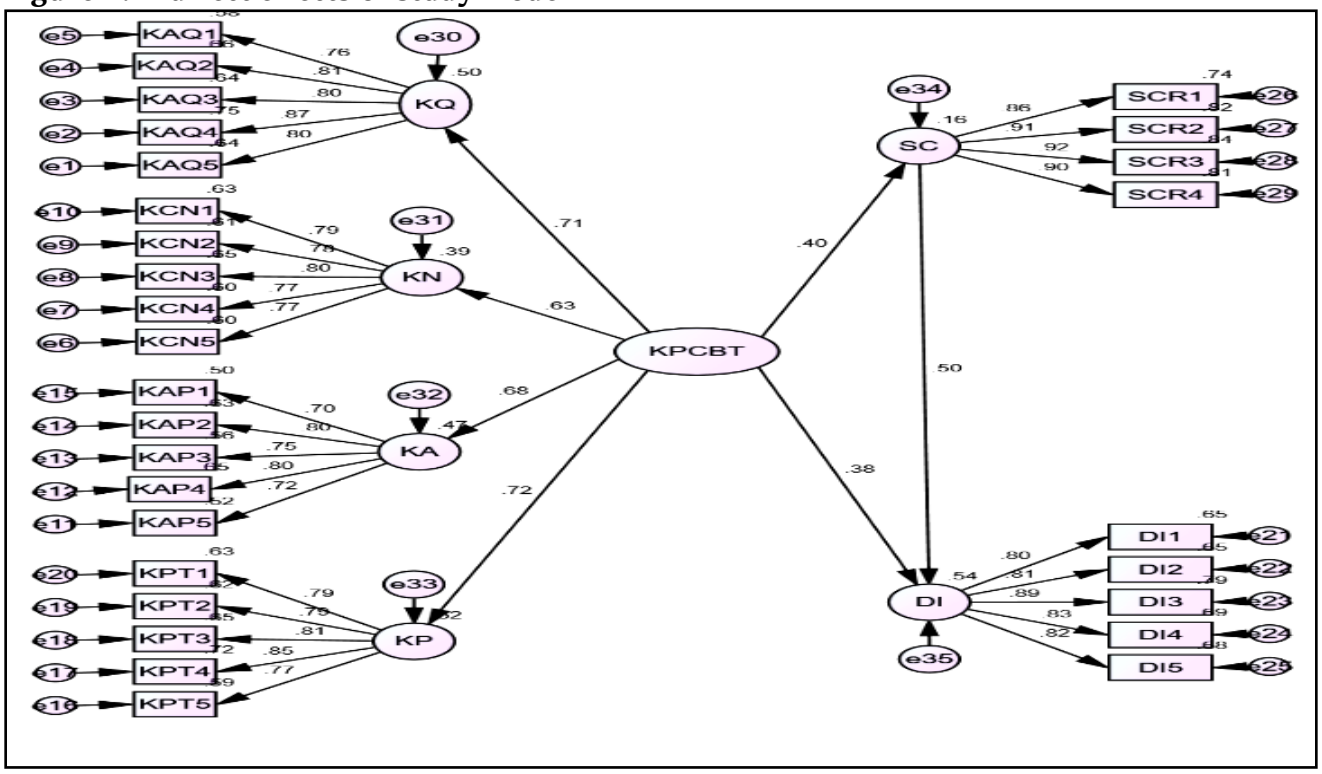
However, when mediating variable subordinate creativity was added in this model the results were changed and the direct effect of knowledge process capabilities on disruptive innovation was

reduced and no longer significant (*direct effect=0.38, p = 0.08*). While, the indirect effect of knowledge process capabilities on disruptive innovation through subordinate creativity was significant and positive (*indirect effect=0.20, LBC = 0.041 & UBC = 0.435 at 95% CI*).

Moreover, squared multiple correlation (R^2= 0.54) explained 54% variation in the disruptive innovation due to knowledge process capabilities via subordinate creativity. This variation in disruptive innovation was 23% higher than direct effect of knowledge process capabilities without existence of subordinate creativity in the study model.

Thus, subordinate creativity fully mediated (Path C is no longer significant) in the relationship between knowledge process capabilities and disruptive and H4 was supported that "Subordinate creativity has mediating effect in the relationship between knowledge process capabilities and disruptive innovation".

Figure 2: Indirect effects of study model



5. Discussion

The main purpose of current study was to determine the innovative strategies of Pakistani SMEs. The SMEs can implement on disruptive innovation (DIN) through effectively management of knowledge process capabilities (KPC) and support employee creativity (ECR) which motivate him/her for generating new and novel ideas. This study developed theoretical conceptual model based on social learning and self-exchange theories. The senior managers of SMEs strive to support their subordinates for managing their knowledge process capabilities. Moreover, knowledge process capabilities practices by subordinates can ultimately increase their learning capabilities.

The managers can also motivate and empower them to generate new and novel ideas for exploration and exploitation of products/services that lead toward bringing innovative change at

firm level. The practices of creating new and novel ideas by workers who are working under top managers calls subordinate creativity. Hence, social learning theory can guide to implement on KPC practice. If subordinates are creative and willingly generating new and novel ideas through effectively management of knowledge process capabilities, they can positively affect the firm innovation. They are motivated to create new ideas in the exchange to bring successfully firm innovation. Consequently, this study also followed the social exchange theory. Therefore, this study investigated the mediation effect of subordinate creativity in the relationship between knowledge process capabilities and innovation.

The current study results were presented significant positive direct effects of KPC with SCR (H1), which is consistent with previous studies (Allameh et al., 2020; Arif et al., 2022; Lee & Shin, 2018; Rhee & Choi, 2017). Knowledge management positively influences the employee creativity through dynamic capabilities (Allameh et al., 2020) Intensity and quality of knowledge process can significantly boost the individual creativity of subordinates (Lee, 2018) which can further contributing in the firm innovative performance. Knowledge management behavior encourages the subordinate creativity whereas knowledge hiding negatively effect on creativity (Rhee & Choi, 2017). Recently an empirical study also investigated the significant and positive relationship of knowledge with subordinate creativity (Arif et al., 2022).

This study results were also revealed significant and positive impact of KPC on DIN (H2), which is sustained by previous studies (Alberti-Alhtaybat et al., 2019; Ilbiz, 2020; Lee & Shin, 2018; Lovrenčić & Sekovanić, 2019; Salavati et al., 2015; Schmitt, 2019). Knowledge is important for innovation management and sustainable activities (Dávila et al., 2019) and effectively management of disruptive innovation (Alberti-Alhtaybat et al., 2019) of small medium enterprises. The knowledge workers who are collaboratively developing their self-capabilities can foster the disruptive as technological innovations (Schmitt, 2019). Many scholars have been suggesting that knowledge management capabilities by the employees can further support organizational innovation specifically management of disruptive business innovation (Ilbiz, 2020; Lee & Shin, 2018; Lovrenčić & Sekovanić, 2019; Salavati et al., 2015).

This study results were also revealed significant and positive impact of SCR on DIN (H3), which is sustained by previous studies (O'Reilly & Binns, 2019; Ogbeibu et al., 2021; Setiawan et al., 2020; Williams et al., 2021). Although, individual creativity by employees can foster innovation however it can also boost the disruptive innovation (Williams et al., 2021). Individual and team creativity is affected by human resource management technologies, digitization and disruptive innovation (Ogbeibu et al., 2021). Study investigated the creativity in the theme of disruptive innovation and found creative performance can be increased in the era of disruptive innovation by implementation on leader-member exchange behavior (Setiawan et al., 2020). Three stages as such ideas generation, ideas incubation and ideas scaling can foster disruptive innovation successfully (O'Reilly & Binns, 2019).

This study results were shown significant positive mediations effects of ECR in the relationship between KPC and DIN (H4), which is supported by the previous studies (Byukusenge et al., 2016; El-Kassar et al., 2022; Naidoo, 2010; Ndwiga, 2019; Uzkurt et al., 2013). The HR practices can increase efficiency of task performance additionally knowledge hiding, creativity and individual innovation plays as mediating roles in the relationship between human resource practices and task

innovation (El-Kassar et al., 2022). Knowledge management positively influences the firm innovation and employee can support this relationship through individual creative and innovative work behavior (Ndwiga, 2019). The individual creativity and innovation can play mediation role in the relationship between knowledge management and firm innovation & performance, firm competitive advantages and organizational culture (Byukusenge et al., 2016; Uzkurt et al., 2013). The study analyzed the disruptive technologies and suggested that knowledge process capabilities can encourage employee for creative and novel contributions that further lead to exploration of new products as such disruptive innovation (Prabhala & Rao, 2017).

5.1 Theoretical implication

The current study followed the concept of disruptive innovation which introduced by Christensen in 1997. He explained the concept of disruptive innovation qualitatively. Afterward, Govindarajan developed a valid scale for measuring disruptive innovation quantitatively in 2006. However, very rare studies empirical investigated that how firms can implement on disruptive innovation (Christensen et al., 2015; Feder, 2018; Sadiq et al., 2022). Currently, the demand of disruptive innovation has been increasing day by day. The lower stream customers specifically in the markets of developing countries are demanding cheap products or service due to increase the inflation rates. Recently study also investigated the internal and external corporate social responsibility can positively affect the disruptive innovation in the presence of technological turbulence(Wang et al., 2022).

Therefore, we also conducted empirical study on disruptive innovation and examined the positive effect of knowledge process capabilities on disruptive innovation through subordinate creativity. This study followed the two theories as such social learning theory and social exchange theory. When employees are practicing the knowledge process capabilities they can learn and increase their interpersonal capabilities which further motivate them toward novel contributions. According to social exchange theory, the subordinate generates novel & creative ideas and contributions for deriving the SMEs toward disruptive innovation.

5.2 Practical implication

This study will be help full for the CEOs and managers of SMEs who are striving to find best solutions to capture global markets and want to gain competitive advantage. This can guide the leaders and managers of SMEs that how can capture low-ended market through implementation on disruptive innovation. The CEOs/managers can motivate their subordinate for generative innovative ideas and acquiring lower stream customers in the low-ended markets. Further, this creative session by the workers can foster the all types of innovation according to market demands. This subordinates' creativity can increase by mentoring them about effectively management of knowledge process capabilities. When subordinates will do practices on knowledge acquisitions, conversions, applications and protections obliviously, they can learn from each other and further share new ideas for increasing firm innovative performance. This study is also alert the managers toward implementation on disruptive innovation which can increase SMEs' capabilities to capture lower ended markets. Through successfully capturing the local low-end markets, SMEs will capable to export their products in international lower ended markets of developing countries. Ultimately, the SMEs can increase their sales and revenue and maximize their profit that is basic purpose of every business.

5.3 Limitations and Future Directions

There few limitations exist in this study. First, this study focuses only on Pakistani manufacturer and services sector SMEs. Other researchers should conduct this study on another SME of developing and developed countries for generalizability of this study. Second, this study conducted first time in Pakistan. It should be conduct repeatedly in different times for controlling common method biasness problem and validity of this study. This study model will be extended in the future by adding some other important variables. The creativity climate, market dynamism, strategic intention, and leadership styles can be add as predicted variable. Moreover, scholars should also check the mediation effect of work alienation, employee motivation, personal skills, and ambidexterity learning in this study model. They can also examine the moderation effect of instrumental thinking, dynamic environment, flexible culture and workforce diversity in the current study model. This study just examined the creative behavior of lower level workers (subordinates who are working in SMES under top managers). Further, another study should also investigate the innovative behavior of senior managers or strategists of SMEs and MNCs for both sustainable and disruptive innovations at the same time.

6. Conclusion

Currently many SMEs also want to capture lower ended global markets. Therefore, SMEs need to focus on disruptive innovation and are exploring and exploiting the products or services. When SMEs implement on disruptive innovation strategy, SMEs can develop their lower performing and lower price products or service for fulfilling the demands of lower stream customers. SMEs can also support their customers by provision of easily accessible ways to their services. Thus, current study develops a conceptual model through empirical research that explains how SMEs can foster disruptive innovation. In this model, knowledge process capabilities can encourage the subordinates of top managers toward generating new and novel ideas according to lower ended markets, which can further introduce theme of disruptive innovation.

Consequently, this study found significant and positive relationships of knowledge process capabilities with employee creativity and disruptive innovation. Moreover, employee creativity can further affect the disruptive innovation. The results of this study supported by past studies and further this study developed a model, which explains how SMEs can adapt disruptive innovation for increasing their sales and revenues. This study will help the managers to train and motivate their related subordinates for creating novel ideas. These novelties can explore new ways for the development of organizations and increase scale of economies. This study just focuses on lower level employees' creativity, knowledge and learning. Further, another study should also investigate the innovative behavior of senior managers or strategists of SMEs and MNCs for both sustainable and disruptive innovations at the same time.

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