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The Mediating Role of Dynamic Capability between Entrepreneurial Competencies and Performance in Information & Communication Technology Firms of Pakistan

Dr. Naveed Mushtaq
Assistant Professor, Noon Business School
University of Sargodha, Pakistan
naveed.mushtaq@uos.edu.pk

Maryam Liaqat
MS. Scholar, Noon Business School
University of Sargodha, Pakistan
maryyam.liaquat@yahoo.com

Mr. Ahmed Saeed
Assistant Professor, Noon Business School
University of Sargodha, Pakistan
ahmed.saeed@uos,edu.pk

Mr. Azhar Hussain
MS. Scholar, Noon Business School
University of Sargodha, Pakistan
azharosja@gmail.com

Abstract
The purpose of this study was to explore the role of entrepreneurial competencies as combination of five sources (analytical, innovation, operational, relationship, commitment) in an organization and how it leads toward firm performance through key mediating effect of dynamic capability and moderating effect of external integration. A sample of 200 supervisors is collected from SMEs (ICTs). The result showed that dynamic capability mediates between capabilities analytical, innovation, operational, relationship, and organization performance respectively. Whereas commitment capability has a direct impact on Organization performance. Furthermore, external integration positively moderates between dynamic capability and organization performance. Therefore, this study enriched our understanding of the mechanism through which entrepreneurial competencies leverage the firm performance in the most dynamic and turbulent business environment. This study also suggested that the managers/ leaders and supervisors of organization can better promote their competency skills in presence of dynamic capability and external integration that could further lead towards better organization performance.
Keywords: SMEs, Innovation, Performance, Capabilities

INTRODUCTION

Entrepreneurs are the key players of the economy (Aruna & Sunil, 2020) as they stimulate economic growth (Singh and Gaur 2018) by creating new jobs (Litwin & Phan, 2013), developing new technologies (Zhu, Wittmann, & Peng, 2012), increasing production, cutting down high unemployment rates (Remeikienė, & Startienė (2009) and developing new innovations (Seman, et al., 2018).

As most of the entrepreneurial businesses start from SMEs and are considered as shield to the economic shocks and fluctuations (Hyder & Lussier, 2016). Scholars also think thatf SME's performance is highly dependent upon the way entrepreneurs operate their business (Mohsin, Halim, & Farhana, 2018).

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SME performance is crucial aspect of any economy as emphasized by Zafar & Mustafa (2017) by adding that, in the developed economies the SMEs contributes 55% and 65% to Gross Domestic Product (GDP) and employment, respectively. Researchers in the past have focused more on competency approach as compared to other approaches (Brophy & Kiely, 2002) for investigating the behaviors that influence the business performance of entrepreneurs. More strategic challenges that could influence SME performance of entrepreneurs include low level of organizational capabilities and limited entrepreneurial competencies (Hashim,. Raza, & Minai, 2018).Tehseen & Ramayah (2015) emphasized that entrepreneurial competencies are not only the decisive factors of SME success but it is also a strategic weapon which can lead a firm to become a world class organization. Quite unfortunately, the mechanism through which different entrepreneurial competencies enhance SME performance is not well documented in literature (Tehseen et al., 2019). particularly Innovation performance yet need more academic work.

Therefore, this study firstly contributes to literature by providing empirical test in order to understand which competencies have a greater role in increasing SME performance. Secondly mostly studies have used entrepreneurial competencies as a uni-dimensional construct in the past and have reported inconsistent relationship between entrepreneurial competencies and SME performance. We argue from the RBV-DC perspective that resources are important but not sufficient as dynamic capabilities (DC) can transform these resources to gain competitive edge (Barney, 1991).

LITREATURE REVIEW

Entrepreneurial Competencies

Today it is widely acknowledged that entrepreneurship has a substantial role in business success of SMEs (Mohsin, Halim, & Farhana, 2017). Characteristics of entrepreneurs included self-images, motives, and social roles, specific and generic knowledge as well skills that may or may not be related to an individual (Truninger, et al, 2018). Additionally, these characteristics are considered as unconscious attributes but few of them are innate whereas remaining can be acquired by training and development process (Muzychenko, 2008). Mitchelmore and Rowley (2010) defined characteristics such as self-image, social roles, attitudes, and traits are referred as "internalized elements" and (Muzychenko, 2008) described other characteristics acquired by practical learning (knowledge, skills, and experience) or theoretical, referred as "externalized elements". Few researchers (Garavan & McGuire, 2001) explained that internal elements are difficult to change while externalized elements can be developed by education programs and proper training and needed to be implemented. The most essential competency of entrepreneur is considered as innovation competency. Moreover, Chandler and Jansen (1992) recommended that entrepreneur has roles of reorganization and envision of innovation. Thus, this category has entrepreneurial activities such as developing, actively seeking, and spotting innovation.

Additionally, (Chandler & Jansen, 1992) suggested the significance of managerial roles as a human competence of entrepreneur. These competencies described the ability of an entrepreneur to develop, lead, organize, control, and monitor the internal and external resources of firm in various areas.

Relationship competencies deals with cooperation, interpersonal skill, trust, communication, connections, and persuasive ability at individual to group and person to person-based interactions (Man et al., 2002). Therefore, entrepreneur must have competencies of interpersonal abilities, building relationship, persuasive, and communication (Man &Lau 2000). Research showed that small firms are dependent on relationships or networks, as they gain support and advice from experts and professionals such as consultants, lawyers, and accountants (Ramsden & Bennett, 2005), customers, suppliers, government bodies, research and training institutions (Ritter & Gemunden, 2004).

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Organizational Performance

Performance measurement system of organization plays an important role to achieve business excellence Organizational performance is considered as most vital variable of management research as well as main indicator that shows organizational success (Hashim et al., 2018). According to (Mohamad, Ramayah, & Wang, 2015) a firms position in the market place is determined through organization performance which includes but not limited to different types of financial ratios such a ROA, ROI, ROE, Tobins Que etc as well as non-financial measures that are not presentable by contemporary financial measures (Mohamad, Ramayah, & Wang, 2015).

Relationship between entrepreneurial competency and organizational performance

Scholars (Man & Lau. 2005) are of the opinion that multiple elements such as self-image, attitudes, social role, personality and traits which have roots in an individual's background gives birth to different entrepreneurial competencies possessed by an entrepreneur. Gartner &Starr (1993)emphasized that bond between competencies and performance is much stronger as compared to the entrepreneurial facets. Authors such as (Man et al., 2008; Man et al., 2002) showed that entrepreneur's behavioral, psychological and demographic characteristics, behaviors; technical and managerial skills are main determinants of performance and failure or success of small and medium enterprises. Entrepreneurship with such competencies is concomitant with the new or innovative, continued existence and advancement of SME's (Emami, & Dimov, 2017). In addition (Albiol-Sanchez, & van Stel, 2016) also emphasized that SMES perforamnce is highly corealted to an entrepreneur's competencies. Empirical studies that have clubbed entrepreneurial competencies as unidimensional construct have shown positive association with firm performance (Tehseen & Ramayah, 2015;). On the other hand, findings (Lopa and Bose, 2014) in an empiriciall study found no link between competencies of an entrepreneurial performance. Hence, it leaves big question mark on the the inconssitancy of the outcomes of the studies in literature. Therefore, authors like Yusoff, Ahmad, & Halim, (2016) have suggested that there is further need to investigate how individual entrepreneurial competencies play a critical role toward firm's performance. Based on the theoretical grounding and discussed literature above it is proposed that:

H1 to H5: Competency of an entrepreneur is direct positively related to organizational performance of SME's.

Note: Competency Includes, analytical,relational, commitment, operational and Innovative competency.

Dynamic Capability as a Mediator

Theoretically, from Dynamic capabilities view point, DC aids in reshaping, restructuring and integrating firms' resources to address environmental changes as required by a firm to fulfill customer needs and be competitive (Lagat & Frankwick, 2017). Additionally, Lu et al. (2010) stressed on the complexity of the link that could be present between firm capabilities, its resources and performance. Therefore, examining the mechanism through which DC can play a critical role in this relationship would open new avenues (Parida et al., 2015). Thus, the firm's different ways are dependent on organizational capabilities that are shaped inside the firms. We can conclude that organizational capabilities enable the firms to deal with organizational problems by firm-specific way (Dosi, Nelson & Winter 2000). Gartner and Starr (1993) described that there are three entrepreneurial behaviors such as building ongoing goods and services that enable future resources, developing organizational processes and structure required for producing goods and services along with obtaining material, informational, human, and financial resources. These behaviors are linked with external and internal resources of organization that make up firm's capabilities. Based upon the above following hypothesis are generated.

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H6: DC has positive relationship with performance of SMEs..
H7a to H7e: DC mediates the relationship between competency and performance of SME's..

Note: Competency includes, analytical, relational, commitment, operational and innovative competency

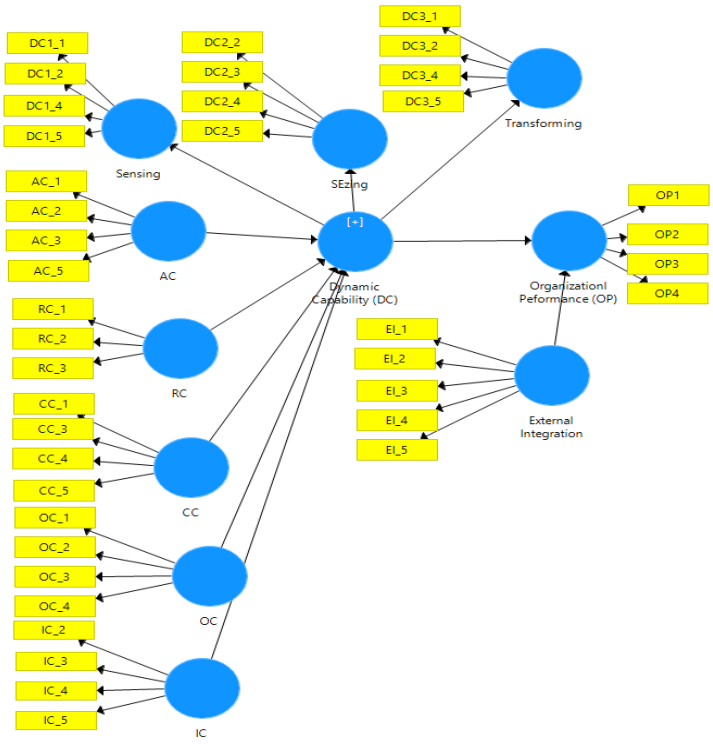

FIGURE 1 THEORATICAL MODEL

Moderating Effect of External Integration

External integration is said to be an interaction of organization with outside suppliers and customers for the sake of building relationships. It helps the organization to achieve higher business performance with respect to time, customer response and cost globally (Frohlich & Westbrook, 2001). Supplier and firm have an ongoing relationship (Li et al., 2005). Firms are dependent on suppliers to obtain raw materials and parts that are essential for manufacturing process by building collaborative relationships. In case of strategic alliance from suppliers manufacturing firms minimized their lead-time; freely share information, multi-skilled employee (Koh et al., 2007). Small and medium enterprises (SME‟s) faced deficiency of technology, knowledge, financial, and skills (Hashim, 2018); so their business success is dependent on co-operative relationships and suppliers "capabilities (Riviere, Suder, & Bass, 2018). The shortage of SME's" resources can be acquiring from external resources, closer relationship with suppliers permits the SME‟s to have latest innovation methods, technologies, process, and materials (Pressey et al., 2009). Relationships with customers is developed through process of attraction (creating relationships, loyalty (developing relationships), and interaction (maintaining relationships) (Izquierdo, Gutiérrez Cillán, & Gutierrez, 2005). Li et al. (2005) also described the importance of customer expectations measurements, number of customer interaction and customer satisfaction for building long-term customer relationships. In other words, entrepreneurs should be competent to deal with external parties for obtaining scare and critical

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resources. Consequently, effectively and efficiently relationships management with external parties enables the firm to have vital resources that are important for superior success and survival of SMEs.

So, proposed hypothesis is

H8: External integration act a as moderator between dynamic capabilities and SME Performance.

METHODOLOGY

A quantitative research design was applied for this study. The population of this study consists of business owners and senior managers currently working in SMEs in the ICT companies. In selecting the respondents, we adopted a method of purposive sampling. The measuring instrument for data collection was were adapted from previous studies which validated them in the contexts of developed as well as developing economies. Employee competency scale was adopted from (Man et al., 2002), while Innovative competency adoptd from (Man et al., 2002). This construct is operationalized as a reflective-reflective type of Hierarchical Component Model (HCM) consisting of three Lower Order Components (LOCs), such as sensing, sensing and transforming capabilities and was adopted from Kump, Engelmann, Kessler, & Schweiger, (2016). While external integration was adopted from (Demo & Rozzett, 2013. A 4-items subjective measure was used to measure organization performance adopted from Green, Medlin, and Medlin (2001). Five hundered questionnaires were handed over to different SMES through Chamber of Commerce. All SMEs were slected randomly. Out of the 500 distributed questionnaires, 180 questionnaires were returned and used for statistical analysis, indicating a response rate of 36%. Data was collected from a single informant in each SME, and thus common method variance could potentially have affected the results. Following Podsakoff, MacKenzie, Lee, and Podsakoff's (2003) suggestion, Harman's single factor test was used as a diagnostic to assess the risk. The results revealed five distinct factors that accounted for 72.28% of the total variance, with the largest factor accounting for only 46.94% of the variance. Consequently, it can be concluded that common-method variance is not likely to be a significant problem in this study.

Measurement of outer model

All the items in the study were considered adequate because the items loading was greater than 0.70. The reliability of the construct was assessed by using composite reliability and Cronbach's alpha. For both indices, the benchmark is 0.70. In this study, all the values of the constructs and reflective constructs were reliable. Moreover, the average variance extracted (AVE) gauges convergent validity. All the reflective constructs and their dimensions attain convergent validity by achieving the level of AVE 0.50, (Hair et al., 2019).
Finally, Table 1 shows the results of discriminant validity assessment. Discriminant validity assessed that all the reflective measure of the study and its dimensions are more strongly relates to its own measure than rest of the constructs. Table 1 shows that all the square root values of AVE are greater than the correlation values vertically and horizontally. The results of Table 2 confirm discriminant validity of the study using Fornell-Larckers.

Table 1 Composite Reliability and AVE

	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Dynamic Capability (DC) Higher Order Construct		0.928	0.937	0.654

Sensing 1	0.873	0.836	0.891	0.671
Sensing 2	0.831			
Sensing 3	0.792			
Sensing 4	0.778			
Seizing 1	0.746	0.832	0.889	0.667
Seizing 1	0.859			
Seizing 1	0.837			
Seizing 1	0.82			
Transforming 1	0.856	0.865	0.908	0.713
Transforming 2	0.856			
Transforming 3	0.823			
Transforming 4	0.841			
EAC_1	0.826	0.851	0.9	0.692
EAC_2	0.867			
EAC_3	0.845			
EAC_5	0.787			
ECC_1	0.849	0.877	0.916	0.731
ECC_3	0.857			
ECC_4	0.829			
ECC_5	0.883			
EIC_2	0.597	0.774	0.857	0.604
EIC_3	0.818			
EIC_4	0.816			
EIC_5	0.851			
EOC_1	0.748	0.841	0.892	0.676
EOC_2	0.846			
EOC_3	0.888			
EOC_4	0.799			
ERC_1	0.896	0.807	0.886	0.722
ERC_2	0.846			
ERC_3	0.805			
EI_1	0.841	0.839	0.885	0.608
EI_2	0.736			
EI_3	0.846			
EI_4	0.773			
EI_5	0.701			
OP1	0.835	0.874	0.914	0.727
OP2	0.859			
OP3	0.897			
OP4	0.817			

Table 2: Discriminant validity

	EAC	ECC	DC	EI	OP	EIC	EOC	ERC
EAC	0.831							
ECC	0.577	0.854						
DC	0.719	0.709	0.808					
EI	0.495	0.711	0.673	0.78				
OP	0.717	0.655	0.779	0.608	0.852			
EIC	0.454	0.566	0.678	0.577	0.591	0.78		
EOC	0.479	0.682	0.696	0.714	0.55	0.61	0.849	
ERC	0.732	0.658	0.722	0.568	0.754	0.49	0.577	0.85

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Structural Model

As Hair et al. (2019) note, the use of bootstrapping resamples 5000 generates standard errors and the value of t-statistics to evaluate the statistical significance of the path coefficients. The direct paths AC to DC; CC to DC; IC to DC OC to DC and RC to DC was found to be statistically significant. Similarly, The effect of AC, CC, IC & RC has a direct effect on Organizational performance (OP). The results are shown in Table 3. Moreover, the results of the study suggest that the structural model have satisfactory predictive relevance for the organization performance variable ($Q^2 = 0.472$).

Table 3 Structural Model Analysis

Direct Effects	Beta Values	T Statistics	P Values	Significance	Indirect Effects	Beta Values	T Statistics	P Values	Significance	Mediation Type
EAC -> OP	0.148	1.79	0.07	*	EAC-DC-OP	0.134	2.782	0.006	***	Partial Mediation
ECC -> OP	0.214	2.35	0	***	ECC - DC-> OP	0.026	0.838	0.216	NS	No Mediation
EIC-> OP	0.152	2.52	0.01	**	EIC -> DC -> OP	0.075	2.579	0.01	***	Partial Mediation
EOC -> OP	-0.092	1.27	0.20	NS	EOC -> DC -> OP	0.061	2.283	0.03	**	Full Mediation
ERC -> OP	0.33	3.69	0.00	***		0.102	3.93	0.00	***	Partial Mediation
EIC -> DC	0.246	4.43	0.00	***						
EOC -> DC	0.2	3.18	0.00	***						
ERC -> DC	0.31	4.62	0.00	***						
ECC -> DC	0.125	1.68	0.09	*						
DC -> OP	0.304	2.83	0.01	***						
EAC -> DC	0.442	6.75	0.00	***						

*P<0.10; ** p<0.05; *** p<0.01; NS: Not Significant

Test the mediation hypothesis (H7a, H7b, H7c, H7d, H7e) use an application of analytical approach suggested by Rucker & Preacher, 2019). Table 3 shows the effect of independent variable on mediator variable and the effect of mediating variable on dependent variable. Table 3 also shows the results of indirect effect. Furthermore, the application of bootstrapping allows for testing the mediation hypothesis (Iyer, Davari, and Paswan, 2018). Using Bootstrapping 5000 resamples the mediation results were concluded in light of the Table 3.

Moderation Analysis

The interacting effects of EI (External Integration) knowledge on the relationship between dynamic capability and the endogenous construct organization performance were examined and reported. Table 4 shows the results of indirect relationship among dynamic capability and organization performance via the interaction of the moderator EI (External Integration) as the main hypothesis proposed below.

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Table 4 Moderation Analysis

	Original Sample (O)	T Statistics (|O/STDEV|)	Significance
Moderating Effect 1 ->Organizational Performance (OP)	0.323	6.698	***

*P<0.10; ** P<0.05; *** P<0.01; NS: NOT SIGNIFICANT

The hypothesis H8 is supported; thus, External Integration acts a moderator (β=0.323; t=6.698; p< 0.0001) as shown in Table 3. The effect size was found to be 0.2 which is small according to (Chin, Marcolin, & Newsted, 2003) but meaning full.

DISCUSSION

The nucleus of the past researchers on entrepreneurship is entrepreneur itself and one prevalent approach practiced by the most researchers is competency approach. As past research opens the black box on ways entrepreneurial competencies could enhance SME performance, we argue dynamic capability along aside external integration have a significant role in this relationship. In the context of Pakistan lack of management and competency skills are essential aspects that need to be taken care off, so that an entrepreneur can manage, re-strategize and revamp their internal knowledge domains to meet external pressures that change time to time. We propose based on the findings of this research that even entrepreneurial competencies are important factor yet other things such as development of organizational capabilities and integrating with the key external players could overcome the shortcomings of entrepreneurs and enhance SME performance. Our results indicate that entrepreneurial competencies lead to organization performance. The relationship between analytical competency and organizational performance is found to be positive and significant which is consistent with the past study of (Man et al., 2002). The relationship between relationship competency and organizational performance is found to be positive and significant which is also consistent with past findings of (Man et al., 2002) study. Similarly, the relationship between commitment competency and organizational performance is found to be positive and significant and these results are also in line with (Man et al., 2002). While an insignificant relationship between operational competency and organizational performance as well as is innovation competency and organizational performance found which is contrary to past findings of the (Man et al., 2002) study. Our results also declare empirically that analytical competency leads to organizational performance in presence of dynamic capability. Similarly, relationship commitment competency as well as operational competency leads to organizational performance in presence of dynamic capability. Another important finding of this research is that innovation competency doesn't lead to organizational performance. Organization capability leads to organization performance hence there is a direct relationship between mediator and dependent variable and empirically this relationship is found to be significant. We also found that external integration moderates the relationship between organization capability and organization performance. Therefore, more emphasis must be placed on choosing the right external partners as they are an add on to internal capability of the firm and help in reshaping internal capabilities and nourishing entrepreneurial competencies.

FUTURE RESEARCH RECOMMENDATIONS

Despite a number of valuable contributions, this study also had some limitation. As the research design was Cross sectional, study was conducted at one time period and it didn't explore that how the entrepreneurial competency and its outcomes changes over different time periods in an organization so future research must be conducted on the longitudinal studies. Another limitation is Sample of the study, as the data were collected from different sectors not covered all the sectors, the

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results must be tested on some other sample of organization. The present study was conducted in Pakistani context and results may differ as the culture change. Therefore, it limits the generalizability of the results. The impact of demographic variables can be tested, for Different age group, gender differences, as the present study included these demographics as control variable.

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