Top Management Capabilities and Firm Efficiency: Relationship via Resources Acquisition

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Abstract

Considering the deficiency of resources in SMEs, a number of studies have been shown interest in the determinants of external resources acquisition but the results are fragmented. Particularly, the role of Top Management Capabilities (TMC) in resource acquisition and efficiency in the SME sector has been neglected. This study discusses the role of TMC–being intangible resources in SMEs' efficiency with a mediating role of resource acquisition. This research is quantitative in nature and collected cross-sectional data through a structured questionnaire from 311 owners and managers of Pakistani SMEs. After analyzing the model using AMOS, the results indicate that TMC significantly facilitate firms in resource acquisition and enhance their efficiency; however, resource acquisition partially mediates the relationship between TMC and SMEs efficiency. This research recommends that SMEs should focus on TMC (instead of blindly investing money in other strategies) in order to acquire valuable tangible and intangible resources that are necessary for long term survival and efficiency. Further implications are discussed for owners, managers and practitioners.

Keywords: *Top management capabilities, Resources acquisition, SMEs, firm efficiency*

1. Introduction

One of the major reasons of SMEs failure is "lack of resources". Therefore, acquiring valuable resources has become a major focus of SMEs in both the developed and under-developed economies. Scholarly interest has diverted from studying the characteristics of firms' resources as a source of competitive advantage to understanding the managerial capabilities through which firms acquire, manage, configure, orchestrate, and transform their resources (Huy & Zott, 2019; Ying, Hassan & Ahmad, 2019). Although, adequate resources are essential but insufficient to achieve a competitive advantage, which requires the top managers to acquire and efficiently manage the requisite resources (Sirmon & Hitt, 2003). As argued by the Upper Echelon Theory

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(originally presented by Hambrick & Mason, 1984), organizations' outcomes and success depend on TMC and competencies (Hambrick & Mason, 1984). For last several decades, a number of studies have discussed the role of top management in organizations' outcomes and performance in developed and emerging economies (Anwar, Khan & Khan, 2018a; Dezsö & Ross, 2012; Haleblian & Finkelstein, 1993; Smith, Smith & Verner, 2006) and have discussed a variety factors that influence SMEs innovative activities and performance (e.g. Gul & Nouman, 2009; Nouman, Taj & Gul, 2017). More precisely, one stream of literature discussed and emphasized on the direct influence of TMC on firm's performance (Dezsö & Ross, 2012; Nadolska & Barkema, 2014; Nielsen & Nielsen, 2013) while the other stream believed in indirect influence and claims that the relationship between TMC and performance can be mediated by other relevant factors such as dynamic capabilities (Hermano & Martín-Cruz, 2016), operational activities (Gudergan & Wilden, 2018), knowledge sharing (García-Sánchez, García-Morales & Bolívar-Ramos, 2017) and human resources (Collins & Clark, 2003). However, it is yet to be explored either TMC directly influence firms' efficiency or resources acquisition plays any role to fully comprehend the link. We, therefore, seek a requisite gap in the literature of Upper Echelon Theory to examine the role of TMC on firm performance with a mediating role of resource acquisition.

It is inevitable for businesses to gain the requisite resources for the smooth operation of the allied activities necessary for running the businesses, particularly in this hyper-turbulent business environment. For instance, in emerging economies such as Pakistan, around half of the SMEs fail in the initial stages of the business cycle, just because of lack of resources, capabilities and support (Shah, Gul & Aziz, 2011). In China, 67% of ventures fail in their infancy while an overall 85% of ventures fail within the first 10 years of their operations (Parnell, Long & Lester, 2015). The situation is no different even in the developed economies, for example in the USA, the failure ratio of SMEs is on the peak that every year in the USA, around 700,000 ventures are initiated out of which only 10% become successful (Sambasivan, Abdul & Yusop, 2009). One of the major reasons for these debacles is attributed to the lack of requisite resources (Anwar, Rehman & Shah, 2018b; Jiang, Liu, Fey & Jiang, 2018). This high failure ratio warrants the identification of the specific factors which could facilitate the SMEs in acquiring resources to avoid their debacles, particularly in their infancy. Surprisingly, these failures are more prominent in the developed economies, where these small industries are incubated by the government through various platforms. The incubation services are for their initial stages, however, the long term survival and competitiveness largely depend on the acquisition capabilities of these SMEs to acquire their requisite resources from their external environment. Apparently, the inabilities of these SMEs in acquiring adequate external resources

are attributed to the high cost, time-consuming and lack of internal capabilities (Ying et al., 2019). SMEs do not receive satisfactory support from government and institutions, particularly in the developing economies (Songling, Ishtiaq, Anwar & Ahmed, 2018), therefore the only source of their resources is their external environment which is shared by all other competitors, and only the managers' capabilities can win them their resources. Therefore, drawing on the UET theory (Hambrick & Mason, 1984) and Resourced Based View (Barney, 1991), this research is conducted to examine the role of TMC – being an intangible and less expensive resource – to enable the firms to acquire external resources to enhance their efficiency. There is no universal definition of SMEs across the globe. These discrepancies are attributed to the underlying dimensions which are used to define the SME. For example, it is often defined on the basis of three major dimensions; a number of employees, total assets and an annual turnover (Anwar et al., 2018a; Dar, Ahmed & Raziq, 2017). Some important definitions of SMEs across the globe are provided and compared in Table 1. However, in the context of Pakistan, the Small and Medium Enterprise Development Authority (SMEDA) defined SMEs based on the above three criteria, such as those ventures which have less than 250 employees, paid-up capital up to Rs. 25 million and annual sales up to Rs. 250 million (Dar et al., 2017). This definition is comparable to the definitions used by other authorities across the globe as mentioned in Table-1, therefore, we relied on the definition of the SMEDA for selection of the sample of this study. In addition, the operationalization of other variables of the study is provided in the Table-2, below.

This research aims to contribute to the upper echelon and RBV theories by examining the indirect relationship between TMC and firms' efficiency through the mediating role of resource acquisition. First, SMEs in emerging economies are unable to invest a huge amount in big projects because of a lack of financial capabilities (Kapetaniou & Lee, 2018), which forces them to go for cheap resources which are often insufficient for their operations (Anwar, 2018). In such situations, it is argued that the top management's capabilities to gain the requisite effective and efficient resources for the businesses may enhance the survival of their businesses. Second, in general, senior managers of SMEs cannot acquire a sustainable competitive position in a turbulent due if they face resource constraints. For instance, the Resource Base View (RBV) theory suggests that unique, rare and inimitable resources enable a firm to gain a sustainable competitive position and superior performance in dynamic markets (Barney, 1991). This research assesses the importance of TMC that has recently been discussed in the context of RBV theory by Badrinarayanan, Ramachandran and Madhavaram (2019). Similarly, Upper Echelon Theory also identified the top managers' abilities as one of the important factors in a firm's sustainability and competitiveness (Hambrick & Mason, 1984) but research is scant about the role of TMC in acquiring

external resources in the context of the RBV and Upper Echelon theories. Third, in a highly competitive environment, small firms rely on their internal capabilities (e.g. management capabilities) to respond to external changes (Yang, Ishtiaq & Anwar, 2018). This study implicates that the top managers of emerging SMEs are the focal points to acquire external resources in the competitive market where the resources are scarce. For instance, Eesley, Hsu and Roberts (2014) argued that TMC can spur a new venture performance in a competitive environment. The top management support is not only essential for high performance but also helpful for innovation in an organization (Heyden, Sidhu & Volberda, 2018). We aim that the TMC help in acquiring external tangible and intangible resources that can be considered very crucial for their firms' efficiency.

Table 1: Definitions of SMEs in different Countries

Country	Industry types	Definitions of SMEs
Canada	SME	Independent firms having less than 200 employees q
France	SME	<500 employees
Germany	SME	<100 employees
Hong Kong	Manufacturing	< 50 employees
Indonesia	SME	< 100 employees
Ireland	SME	< 500 employees
Italy	Small enterprises	< 200 employees
Japan	Manufacturing, mining and transportation	< 300 employees or invested capital less than 10 million yen
	Construction	< 100 employees or capitalization less than 30 million yen
	Whole sale trade, Retail trade and services	< 50 employees or capitalization less than 10 million
Korea	Manufacturing	< 300 employees
	Mining & transportation	< 300 employees construction
Malaysia	SMIs	< 75 full time workers or with a shareholder fund of < RM 2.5 million (US $ 1 million)
	SIS	Manufacturing establishments employing between 5 and 50
	MIS	employees or with a shareholders fund up to RM 500,000

		Manufacturing establishments
Netherlands	Small enterprises	< 10 employees
	Medium enterprises	10-100 employees
Philippines	Small enterprises	< 200 employees, revenue < P 40 million
Singapore	Manufacturing	Fixed assets < S$ 15 million
	Services	< 200 employees and fixed assets
		< S$ 15 million
Spain	Small enterprises	< 200 employees
	Medium enterprises	< 500 employees
Sweden	SME	Autonomous firms with
		< 200 employees
Switzerland	SME	No fixed definition
Taiwan	Manufacturing, mining and construction industries	< NT$60 million of sale volume and < 200 employees
	Service industries	< NT$80 million of sale volume
		< 50 employees
Thailand	Labour intensive sector	< 200 employees
	Capital intensive sectors	< 100 employees
United Kingdom	SME	No fixed definition
United States	Very small enterprises	< 20 employees
	Small enterprises	20-99 employees
	Medium enterprises	100- 499 employees
Vietnam	SME	No fixed definition, generally
		< 200 employees

Table 2: Operationalization of the Variables

Variable	Operationalization	Source
Top Management Capabilities	"the capabilities with which managers build, integrate, and reconfigure organizational resources and competences" (p. 1012)	Adner and Helfat (2003)

Resource Acquisition	Firm's ability to capitalize on its network and ability to acquire external tangible and intangible resources such as technological, financial, managerial, informational and human resources etc.	Jiang et al., 2018; Ying et al., (2019).
Efficiency	Output to input ratio: in terms of profitability, return on investment and return on assets etc. OR producing/earning more with the least of resources.	Martin and Javalgi, 2016

Sources: Adner and Helfat (2003); Jiang et al., (2018); Ying et al., (2019); and Martin and Javalgi (2016)

2. Theoretical Background

The present study unleashes the importance of TMC in the acquisition of resources that can spur SMEs' efficiency. The model is based on two major theories; UET and the RBVT. For instance, UET sheds light on top managers' background and psychological features that can influence organizations' performance (Hambrick & Mason, 1984). In the present study, we emphasize on demographics factors while parsimoniously skip the psychological factors of top managers due to little importance in our model. To put the claim of UET into detail, the demographic characteristics such as age, education, experience and competencies of top managers affect their business performance (Hambrick & Mason, 1984; Anwar, Shah & Khan 2018c). Managerial competencies enable them to seize new opportunities, get information about customers and markets, build a network and acquire necessary resources that result in high profitability (Gillis, Combs & Yin, 2018; Koryak et al., 2015). Because lack of competences hinder venture growth and results in a low performance (Kapetaniou & Lee, 2018). Therefore, SMEs need intellectual, capable, competent and skilled staff to make effective strategic decisions. In a similar debate, the RBVT states the worth of tangible and intangible resources in the competitiveness and performance of a business (Barney, 1991). Some studies give more weight to tangible resources (Kim, Shin & Min, 2016; Schriber & Löwstedt, 2015) while others rely on intangible resources (Anwar et al., 2018a; Bharadwaj, Chauhan & Raman 2015; Huy & Zott, 2019). Indeed both are necessary for a long term survival—and hereby used in this research. The theory further demonstrates that an enterprise with sufficient resources; rare, unique and immutable delights a superior position in the dynamic market. A common problem reported in SMEs is lack of resources, hence acquiring external resources becomes a key effort to boost operational activities (Anwar et al., 2018b). However, it is not easy to acquire external resources, enterprises must-have capabilities and skilled managers to make it happen (Ying et al., 2019). Therefore, it is crucial to assess how SMEs get efficiency through TMC and resources.

3. Hypotheses Development

3.1 Top management capabilities and firm's efficiency

The top management team is the central factor that significantly influences a firm's efficiency (Pegels & Yang, 2000). TMC are the firm-level indicators that affect a firm's performance (Bathula & Singh, 2015). TMC are not only important for the high performance of a firm but also influence innovative and operational activities (Salehi, DashtBayaz, & Moghadam, 2018). Upper Echelon theory suggests that a firm's success and performance are influenced by the top management team rather than bottom or middle-level managers (Hambrick & Mason, 1984; Tseng & Lee, 2014). The former, begin the strategic decision-makers, must have the capability to recognize and seize any new opportunity arising out of the external environment that is essential for high profitability and sustainability (Adner & Helfat, 2003; Helfat & Martin, 2015). Not only the managerial skills but also the intellectual capabilities of the top management influence the embeddedness of resources' fusion among firms (Laud, Karpen, Mulye & Rahman, 2015; Díaz-Fernández, Gonzalez-Rodríguez, & Simonetti, 2015). Hence, for procurement of opportune resources, firms improve their external capabilities and internal social capital (Du, Guariglia & Newman, 2015), especially in the emerging markets, where senior managers are relatively more autonomous to use different sources such as networking and social capital to configure their firm performance by winning the requisite resources (Kotabe, Jiang & Murray, 2017). Top management involves themselves in multidimensional activities such as project planning, budgeting and evaluation which are helpful for effective business operations (Hermano & Martín-Cruz, 2016). For instance, more intellectual top managers can seize the best position in the market as compared to less intelligent managers (Díaz-Fernández et al., 2015). Senior management involvement is necessary for firm performance because they not only take part in the strategic level decision making but also active in the operational level decision making and operations of their business (Hermano & Martín-Cruz, 2016). Therefore, we hypothesize the first hypothesis as:

H_1: Top management capabilities have a significant positive influence on firms' efficiency in the SMEs of Pakistan

3.2 Top management capabilities and resources acquisition

The important characteristics of the managers, which overshadowed all other attributes of the managers when it comes to the top management are their personality traits (Peterson, Smith, Martorana & Owens, 2003). Some of the attributes are inevitable for a good manager to lead his team and run the business both efficiently and effectively. For example, in terms of personality, not all managers actively par-

ticipate in organizational change and activities, due to their introvert nature. While, the extrovert and managers exhibiting high scores on the openness are more inclined towards the change process and are capable of persuading the followers to adopt the change (Anwar et al., 2018c; Peterson et al., 2003). More precisely, the more persuading nature of a manager would help him win the important and inevitable resources for the firm over his competitors (Helfat & Martin, 2015). The top management team establishes different types of a network with external bodies in order to gain useful resources which are necessary for the efficient performance of the firm (Kauppila, 2015; Sirmon & Hitt, 2003).

In the context of the emerging economies such as Pakistan, in the absence of any institutional support from the government, SMEs face severe resource constraints. In such situations, top managers' idiosyncratic capabilities such as business experience, financial literacy and intellectual capital facilitate them in acquiring external tangible and intangible resources (Ying, Hassan & Ahmad, 2019). Especially in the initial stages of their operations, they need financial capital for operational activities. Hence, managerial capabilities such as human capital, skills, education and experience assist them in acquiring external financial resources (Ko & McKelvie, 2018). Some managers acquire external resources very proactively which in turn boosts their firm's profitability (Helfat & Peteraf, 2015). Top managers' skills and capabilities are significantly related to resource acquisition (Spithoven & Teirlinck, 2015). Hence, it can be argued that competent managers are needed to acquire and manage resources in productive ways to increase efficiently utilize the available resources. Therefore, based on these assertions we hypothesize the next hypothesis as:

H_2: Top management capabilities have a significant positive influence on the acquisition of resources in the SMEs of Pakistan.

3.3 Resources acquisition and firm's efficiency

According to the RBV theory, a firm with unique and rare resources gain a sustainable competitive position over other firms in the hyper-turbulent market (Barney, 1991). Various resources and capabilities are needed at different levels of business operations, therefore, it is imperative for the managers involved at each level to proactively pursue their goals and make efforts to gain the requisites resources for efficient and effective performance of their assigned roles and operations (Zhang, Liu, Tan, Jiang & Zhu, 2018). The top management requires the entrepreneurial capabilities to assess the current scenario of resources and to seek the opportunities in the external environment that are arising out of the changes in the external environmental demographics (Koryak et al., 2015). Entrepreneurs persistently struggle to acquire enough resources to make a sustainable competitive position in a dynamic market (Zott &

Huy, 2007). In a dynamic market, a firm with adequate resources and capabilities can gain a highly competitive status over other firms (Camisón et al., 2016). Management capabilities and entrepreneurial activities are significantly related to each other which resultantly configure the high growth of business firms (Sahimi, Rizal, Husin & Kamarudin, 2017). Adequate resources enable firms to make effective strategies and plan for the improvement of efficiency (Ferreira & Fernandes, 2017). Drawing on the RBV theory, sufficient resources enable firms to perform their operational activities efficiently that can stimulate their overall organizational performance (Barney & Arikan, 2001). For instance, Jiang et al., (2018) argued that adequate resources are very crucial for the smooth running of operational activities which in turn accumulates at the organizational level to improve its financial performance. Similarly, resource acquisition has been considered very profitable for SMEs' sustainable competitive position (Pulka, Ramli, & Bakar, 2018; Ying et al., 2019). Based on these assertions, we also argue that the acquisition of the external resources is important for the firms' performance, therefore, we state the next hypothesis as:

H_3: Resources acquisition has a significant positive influence on efficiency of the SMEs of Pakistan

3.4 TMC, Resources acquisition and firms' efficiency

There is no doubt that top management plays a noteworthy role in the performance of a firm, however, the links between the TMC and the firm's efficiency is not so straightforward. There are different studies that considered different black boxes for the explanation of the association between the TMC and the SMEs' efficiency; for example, Hermano and Martin-Cruz (2016) identified the dynamic capabilities of the top management as a mediator between the TMC and the firm's efficiency. Similarly, Huynh, Gudergan and Wilden (2018) also claimed that top management influences the dynamic capabilities of a firm which ultimately affects the firm's performance. They further argue that to achieve a highly sustainable competitive position, a firm needs to have enough resources and capabilities and conclude that to gain a competitive advantage over the competitors it is inevitable to lead others in acquiring the useful and requisite resources (Camisón et al., 2016). Many firms rely on the knowledge and competencies of their managers because competent managers can acquire and seize a more favorable position in resource acquisition and which in turn enhances the high productivity and efficiency of firms (Bharadwaj et al., 2015). Management capabilities are helpful to reduce spurious costs that are aligned with various activities and help firms in the creation of new opportunities that are essential for business profit and success (Gillis et al., 2018; Koryak et al., 2015). To acquire valuable resources, organizations need skilled and active HR managers who

in turn help in the improvement of firm performance (Antila & Kakkonen, 2008). Managers' dynamic capabilities serve as a catalyst for mobilization of the resources in an efficient way to provide maximum outputs (Huy & Zott, 2019).

TMC such as networking and interaction do not directly influence firm performance but initially, it (e.g., capabilities) helps in bringing resources from the external environment and then uses these resources to enhance their profitability (Jiang et al., 2018). This notion is further enriched by Ying et al. (2019) who scrutinized that resource acquisition is the significant mediator between top managers' intangible capabilities and sustainable competitive position in SMEs. Similarly, it is also argued that competent marketing managers help firms to build easy ways to access various resources that can configure business growth and sustainable performance. Managers are deemed as the success factors which enable a firm to achieve its target goal, sustainable position and high profitability by acquiring valuable resources (Richey, Kiessling, Tokman & Dalela, 2008). Therefore, based on these assertions we also hypothesize the same mediating relationship and states the next hypothesis as:

H_4: Top management capabilities increases the chances of resources acquisition, which resultantly increases the efficiency of the SMEs of Pakistan.
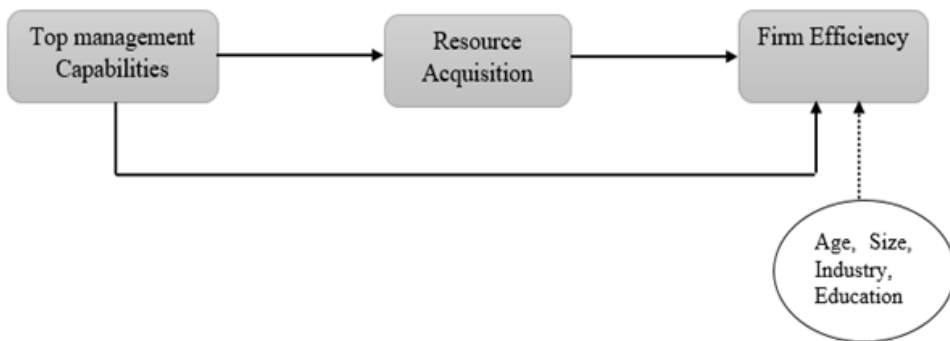
Conceptual Model is shown in figure 1.

Figure 1: Conceptual Model

4. Methodology

4.1 Research design, sample and population

To achieve the objectives, this study is attributed as a quantitative study, which is based on a survey to collect cross-sectional data of the top management of SMEs in Pakistan. We collected data from 311 SMEs operating in the three major cities of

Pakistan; Islamabad, Peshawar and Lahore. We selected SMEs from these three cities as most of them have their head offices in these cities (Anwar, 2018). We obtained registered firms lists from Islamabad Chamber of Commerce and Industries (ICCI), Sarhad Chamber of Commerce and Industries (SCCI), and Lahore Chamber of Commerce and Industries (LCCI) which have around 4000, 3900 and 5980 registered firms, respectively; making a total population of 13880 SMEs. Based on the probability-based sampling formula, a sample size above 300 is a good representative (Krejcie & Morgan, 1970). Additionally, Osborne, Costello and Kellow (2008) suggested a ratio of 10 to 15 respondents to one item as an acceptable criterion for deciding the sample size to get unbiased estimates. Following this criterion (18 items x 15 = 270 responses), we distributed 700 questionnaires among the firms, randomly selected from the list of the firms obtained from the relevant chamber's registered firms' lists, to get a response of at least 270. We requested the owners and top managers of the randomly selected firms to fill the survey as they are more aware of their strategic planning and performance. This research followed a hard copy approach for data collection because an email survey gives a lower response rate in Pakistan (Anwar, 2018). Another reason for choosing this approach is to approach directly the respondents in their working stations and to get their responses as either they have little time to fill the online surveys or do not bother to respond to emails. We received 311 usable questionnaires from the selected SMEs with a response rate of 44.43%. The descriptive profiles of the firms participated in this study are shown in Table-3.

Table 3: Description of the SMEs participated in the Research

Description	No. of firms	Percentage
Size of the firms		
20-50 employees	75	24.1
51-100 employees	62	19.9
101-150 employees	55	17.7
151-200 employees	57	18.3
201 to 250 employees	62	19.9
Age of the firms		
10 years and less	124	39.9
11-20 years	102	32.8
21 and above years	85	27.3
Nature of Industry		
Manufacturing	112	36.0
Trading	124	39.9

Services	75	24.1
Education of Owners/Managers		
Intermediate and less	52	16.7
Bachelor	114	36.7
Master	97	31.2
MS / MPhil	46	14.8
PhD	2	0.60
Total	311	100

4.2 Measures

Top Management Capabilities: TMC are measured as multi-dimensional concepts and encompass a variety of management capabilities. To gain comprehensive insights, we modified the items used in the prior studies (e.g. Nadolska & Barkema, 2014; Ruiz-Jiménez & Fuentes-Fuentes, 2016) and merged the total six items to measure TMC. The previous study has reported reliability statistics of 0.90 for the construct of the TMC (e.g., Ruiz-Jiménez & Fuentes-Fuentes, 2016).

Resource Acquisition: Firms with tangible and intangible resources that facilitate a competitive advantage. We used measures used by Campbell and Park, (2016), Ying et al. (2019) and Lee, Tuselmann, Jayawarna and Rouse (2018) in the SMEs perspective where six items were used (slightly modified) for resource acquisition (tangible & intangible resources). The previous study established its reliability as Cronbach's Alpha for this measure was 0.93 (Ying et al., 2019).

Firm Efficiency: In the case of large firms, data are available and various proxies are used to measure efficiency. However, in SMEs, different self-reported approach has been used to measure performance, productivity and competitiveness. We adopted the measures used in the prior study (e.g. Martin & Javalgi, 2016) and modified as per the study's requirements. Owners/managers were asked, "we have significantly improved our return on investment, return on assets and market share etc. using the least resources since the last three years as compared to our major competitors". Cronbach's Alpha was reported 0.87 by Martin and Javalgi, (2016), hence a reliable instrument for measuring the Firm's Efficiency.

All the variables are measured with 5 points Likert scales (e.g., strongly disagree - 1, disagree - 2, neutral/average - 3, agree - 4 & strongly agree – 5).

4.3 Control Variables

To control for the effects of the demographics of the SMEs, and to reduce spurious

results, we controlled for the age of firms, size of firms, nature of industry and education of top management. Since the nature of the industry is a categorical variable, we performed a separate group difference analysis in AMOS. We did not find any significant differences between the manufacturing, trading and service group. Hence, we dropped the nature of the industry to be controlled. Size has insignificant while age and education show a significant influence on firm efficiency.

5. Data Analysis and Results

5.1 Exploratory factor analysis

Since the items are slightly modified therefore we conducted Exploratory Factor Analysis (EFA) to validate the scales. We executed EFA on the 18 items using *Varimax* Rotation with *Kaiser* Normalization method. The results of the EFA are provided in Table – 4. The results of the sample adequacy indicate that the sample is enough to execute EFA as *Kaiser-Meyer-Olkin* (KMO) value is greater than 0.70 (Barrett & Morgan, 2005). Communalities values were acceptable for each items (e.g., > 0.50). Further results of EFA confirmed the convergent and construct validity as each item was significantly loaded on its respective factor with satisfactory value as shown in Table – 5.

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.877
Bartlett's Test of Sphericity	Approx. Chi-Square	3794.477
	Df	153
	Sig.	0.000

5.2 Descriptive statistics

Descriptive statistics, provided in Table – 6, shows that the average mean values of the items are around 3 and the standard deviation is about 0.50. The data are normal as none of the items has skewness and kurtosis values greater than -/+2 which confirmed the normality of the data (George & Mallery, 2010).

5.3 Confirmatory factor analysis

We also performed Confirmatory Factor Analysis (CFA) to examine the items' standardized loading, validity and reliability, followed by estimation of the structural model through AMOS to test the hypotheses of the study. The estimation of the measurement model (see Figure 2) is conducted through the CFA. First, we ensured the fitness of the model (see Table 9) such as CMIN/DF that is less than 3 (Hair,

Table 5: Factor Loadings: Exploratory Factor Analysis

Items	1	2	3
tmc1	0.787	0.053	0.000
tmc2	0.748	0.049	0.170
tmc3	0.799	0.053	0.037
tmc4	0.779	0.112	0.184
tmc5	0.807	0.019	0.134
tmc6	0.769	0.094	0.027
ra1	0.019	0.865	0.258
ra2	0.041	0.910	0.186
ra3	0.077	0.876	0.113
ra4	0.036	0.803	0.306
ra5	0.161	0.833	0.127
ra6	0.100	0.808	0.241
ef1	0.072	0.161	0.746
ef2	0.096	0.146	0.781
ef3	0.131	0.133	0.833
ef4	0.032	0.258	0.735
ef5	0.157	0.164	0.854
ef6	0.079	0.241	0.610

Extraction Method: Principal Component Analysis. a. 3 components extracted.

ra=resource acquisition, fe=firm efficiency, tmc = top management capabilities

Table 6: Descriptive Statistics

Items	Minimum	Maximum	Mean	S.D	Skewness	Kurtosis
ra1	2	5	3.68	0.571	-0.291	-0.072
ra2	2	5	3.71	0.573	-0.619	0.527
ra3	2	5	3.71	0.569	-0.442	0.226
ra4	2	5	3.72	0.557	-0.443	0.246
ra5	2	5	3.70	0.566	-0.461	0.201
ra6	2	5	3.75	0.542	-0.585	0.542
tmc1	2	5	3.70	0.554	-0.559	0.264
tmc2	2	5	3.66	0.532	-0.599	-0.221
tmc3	2	5	3.69	0.528	-0.682	0.093

tmc4	2	5	3.66	0.568	-0.582	0.125
tmc5	2	5	3.72	0.539	-0.591	0.356
tmc6	2	5	3.65	0.553	-0.498	-0.143
ef1	2	5	3.78	0.486	-1.155	1.618
ef2	2	5	3.80	0.505	-0.609	0.884
ef3	2	5	3.78	0.513	-0.990	1.495
ef4	3	5	3.84	0.457	-0.608	0.802
ef5	2	5	3.80	0.521	-1.037	1.919
ef6	2	5	3.81	0.461	-0.645	0.448

Note: Ra=resource acquisition, fe=firm efficiency, tmc = top management capabilities

Anderson, Babin & Black, 2010; Hu & Bentler, 1999). The GFI, AGFI, CFI, NFI and TLI values are higher than 0.90 that shows the acceptable model's fit (Hair et al., 2010; Hu & Bentler, 1999). RMR and RMSEA are also in the acceptable ranges e.g. less than 0.08 (Hair et al., 2010; Hu & Bentler, 1999). All the items have adequate standardized factor loading (above 0.70, $p < 0.001$) on their relevant factors, as shown in Table – 7. Additionally, the convergent validity of the factors is also ensured as shown in Table – 8, which are in acceptable values (above the threshold value of 0.50) (Hair et al., 2010; Hu & Bentler, 1999). Discriminant validity (see Table – 8) is also ensured as the values are above the threshold value of 0.70 (Hair et al., 2010; Hu & Bentler, 1999). Composite reliability (see Table – 8) of all the factors is in acceptable ranges i.e., > 0.70 (Hair et al., 2010; Hu & Bentler, 1999). Thus all the criteria of the measurement model have achieved, therefore the reliability and validity of the instruments are established.

Table 7: Factor Loadings: Confirmatory Factor Analysis

Item	Items	Estimate
	Top Management Capabilities	
tmc6	The firm's managers achieve better total control of the firm's general performance.	0.697
tmc5	The firm's managers perceive new opportunities and potential threats.	0.768
tmc4	The firm's managers develop a system of strategic plans throughout the organization that is effective for the organization's general development.	0.798
tmc3	The use of management by objectives has increased in the firm.	0.770
	The extensive, effective use of quantitative techniques in decision making has increased.	0.754

tmc1	The firm's managers resolve conflicting opinions, improve coordination and effective collaboration between key executives, generate enthusiasm, and motivate the management unit sufficiently to achieve improved performance.	0.739
	Resources Acquisition	
ra6	Financial support	0.797
ra5	Business strategy advise	0.756
ra4	Social capital	0.852
ra3	Physical resources (e.g. technologies, equipment etc.)	0.809
ra2	Corporate social responsibility	0.944
ra1	Industry information	0.899
	Firm Efficiency	
ef6	Reaching the venture financial goals	0.554
ef5	The venture margin	0.905
ef4	Market growth	0.664
ef3	Return on Assets (ROA)	0.847
ef2	Return on sales (ROS)	0.716
ef1	Return on investment (ROI)	0.705

Note: Ra=resource acquisition, fe=firm efficiency, tmc = top management capabilities
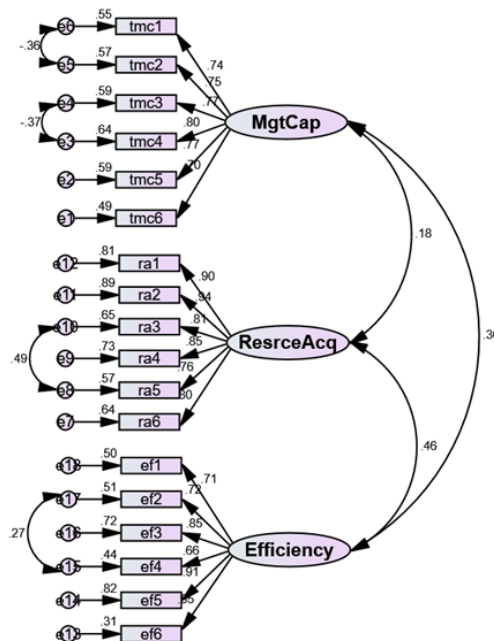

Figure 2: Measurement Model

5.4 Common Method Variance (CMV)

We relied on cross-sectional data which is prone to the problems of common method bias. To examine the prevalence of the CMV, we performed Harman's one-factor test in SPSS using Principle Component Analysis (PCA). The results indicated three factors that have eigenvalues greater than 1 of which the first factor explained only 36.92% variance which is less than 50% (Podsakoff & Organ, 1986), therefore, the common method is not a problem in this study and can interpret the results of this study confidently being unbiased.

5.5 Correlation

We executed the Pearson correlation in SPSS to check the relationships between the variables of the study. The correlation matrix is provided in Table 8, which shows that TMC have significant positive association with both the firm's efficiency (r = 0.321, p < 0.01) and resources acquisition (r = 0.189, p < 0.01). In addition, there is a significant and positive relationship between resource acquisition and the firm's efficiency (r = 0.489, p < 0.01).

Table 8: Correlation Coefficients

Factors	AVE	√AVE	C.R	Size	Age	education	TMC	RA	Firm Efficiency
Size	-	-	-	1					
Age	-	-	-	0.068	1				
Education	-	-	-	-0.034	0.165**	1			
TMC	0.57	0.75	0.89	-0.015	0.157**	0.149**	1		
RA	0.71	0.85	0.94	0.072	0.229**	0.099	0.189**	1	
Firm Efficiency	0.55	0.74	0.88	0.068	0.442**	0.364**	0.321**	0.489**	1

**. Correlation is significant at the 0.01 level (2-tailed). AVE=average variance extracted, C.R=composite reliability, TMC = Top Management Capabilities, RA=resource acquisition

5.6 Structural model estimation

Hypotheses of the study were tested through the structural model using AMOS. To gain valid insights, we executed a separate model for each relationship. The estimation and their interpretations are provided in the relevant sections.

5.6.1 Structural model 1

In this structural model (see Figure 3), the influence of TMC on firms efficiency

was examined. First, we ensured the fitness of the model (see Table – 9) in terms of CMIN/DF, which is less than 3 (Hair et al., 2010; Hu & Bentler, 1999). GFI, AGFI, CFI, NFI and TLI values are greater than 0.90 shows acceptable model fits as per the recommendations of the prior studies (Hair et al., 2010; Hu & Bentler, 1999). RMR and RMSEA are also in the acceptable ranges (i.e., less than the threshold values of 0.09) as recommended by Hair et al., (2010) and Hu and Bentler, (1999). The structural model estimation results, as shown in Table – 10, show that TMC have a significant and positive influence on efficiency ($\beta = 0.127$, $p < 0.05$) which supported the H_1. However, for the control variables, the only size has an insignificant while education and age have a significant influence on the firm's efficiency. R^2 shows that a 30% change in efficiency is explained by TMC while controlling for the educational background of top managers, size and age of firms as control variables.

5.6.2. Structural model 2

In the second structural model (see Figure 4), the influence of TMC on resource acquisition was examined. The goodness of fit of the model was assessed (see Table – 9), which shows a good fitness of the model a**s** the values of CMIN/DF GFI, AGFI, CFI, NFI, TLI, RMR and RMSEA are in the acceptable ranges (Hair et al., 2010; Hu & Bentler, 1999). The results (see Table 10) show that TMC have a significant influence on resource acquisition ($\beta = 0.157$, $p < 0.05$) which supported hypothesis H_2. R^2 indicates that only a 6% variation in resource acquisition is explained by TMC after controlling for the control variables; education of the top managers, size and age of firms.

5.6.3. Structural model 3

The effect of resource acquisition on firms efficiency was examined through structural model 3 (see Figure 5). The results showed that there is a satisfactory model fit (see Table – 9) as indicated by the values of CMIN/DF, GFI, AGFI, TLI, NFI, CFI, RMR and RMSEA as suggested by Hair et al., (2010). The results (see Table – 10) indicate that resource acquisition has a significant and positive effect on the firm's efficiency ($\beta = 0.280$, $p < 0.05$) thereby supports hypothesis H_3. R^2 shows that a 37% change in efficiency is explained by the resource acquisition in the firm's efficiency after controlling for the top manager's education level, the age and size of the firms.

5.6.4. Structural model 4

For testing the hypotheses of the research, we applied the structural model in AMOS (see Figure 6). The model fits (see Table 9) were ensured where CMIN/DF is less than 3 (Hair et al., 2010; Hu & Bentler, 1999). GFI, AGFI, CFI, NFI and TLI values are greater than 0.90 show acceptable model fits as per the recommendation
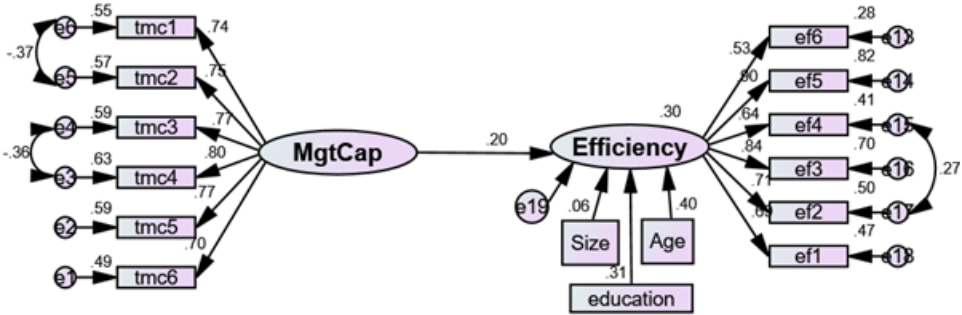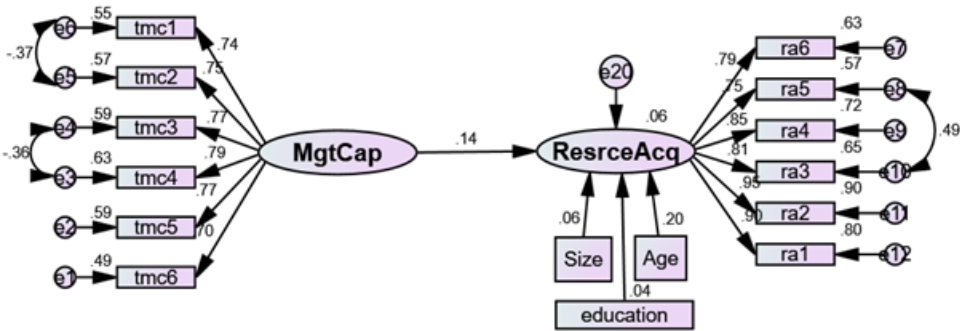
Figure 3: Structural Model 1

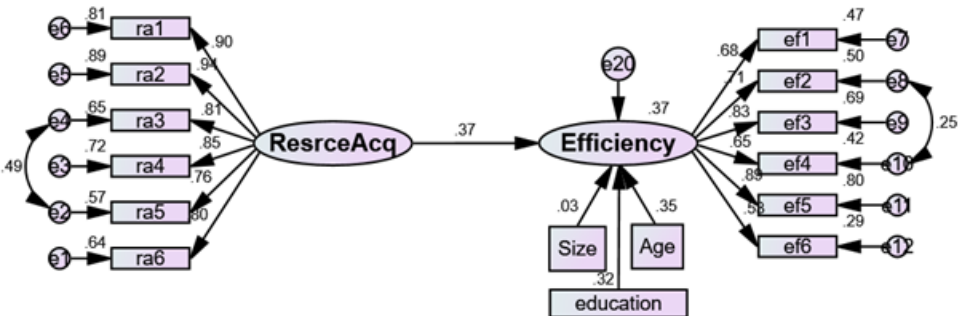

Figure 4: Structural Model 2

Figure 5: Structural Model 3

of the prior studies (Hair et al., 2010; Hu & Bentler, 1999). RMR and RMSEA values are lower than 0.08 are accepted (Hair et al., 2010; Hu & Bentler, 1999) as shown in table 9.

The results show (see Table 11) that the indirect influence of TMC on firm efficiency is significant ($\beta = 0.062$, $p < 0.05$) while the direct influence of TMC on efficiency remained significant that partially supported H4 of the study. The control variables; education and age of firms are significant while size insignificantly influenced firm

cy also remains significant (β = 0.1561, p < 0.01).Whereas, the total linear effect of TMC on firm efficiency was statistically significant (β=0.2115, p < 0.01). Moreover the
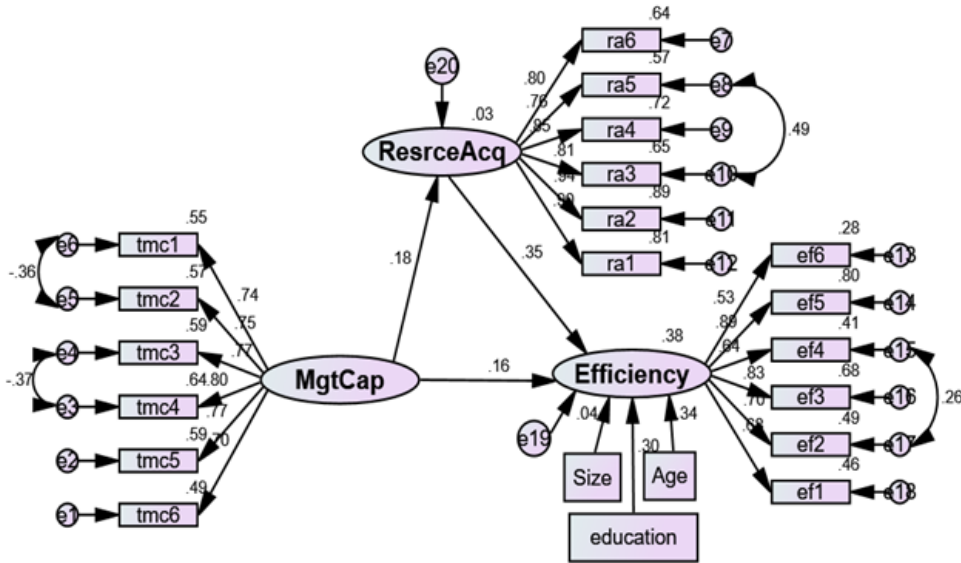

Figure 6: Structural Model 4

Table 9: Goodness of Fit Indices

Model	CMIN/DF	RMR	RMSEA	GFI	AGFI	TLI	CFI	NFI
Measurement Model	2.413	0.015	0.068	0.90	0.87	0.94	0.95	0.92
Structural Model 1	1.848	0.030	0.052	0.93	0.91	0.96	0.96	0.92
Structural Model 2	2.316	0.028	0.065	0.92	0.89	0.95	0.96	0.93
Structural Model 3	2.849	0.037	0.077	0.91	0.87	0.93	0.94	0.92
Structural Model 4	2.248	0.032	0.063	0.89	0.86	0.96	0.94	0.90

efficiency. Considering the R square, figure 3 shows that 38% variance is explained in firm efficiency by TMC with resource acquisition as a mediator.

5.7 Robustness test

To increase the validity of the results, we used PROCESS macros in SPSS as suggested by Hayes and Preacher (2013) to test the mediating effect of resource acquisition

Table 10: Hypotheses Testing (Direct Relations)

Hypotheses			Estimate	S.E.	C.R.	P
Firm Efficiency	<~	TMC	0.127	0.036	3.502	0.000
Firm Efficiency	<~	Age	0.118	0.019	6.276	0.000
Firm Efficiency	<~	Size	0.010	0.009	1.165	0.244
Firm Efficiency	<~	Education	0.078	0.015	5.250	0.000
Structural Model 2						
Resource Acquisition	<~	TMC	0.157	0.066	2.377	0.017
Resource Acquisition	<~	Size	0.019	0.016	1.146	0.252
Resource Acquisition	<~	Age	0.103	0.030	3.440	0.000
Resource Acquisition	<~	Education	0.018	0.025	0.735	0.462
Structural Model 3						
Firm Efficiency	<~	RA	0.280	0.043	6.463	0.000
Firm Efficiency	<~	Size	0.008	0.011	0.693	0.488
Firm Efficiency	<~	Age	0.141	0.021	6.556	0.000
Firm Efficiency	<~	Education	0.108	0.018	6.019	0.000

Note: TMC = Top Management Capabilities, RA=resource acquisition

Table 11: Hypotheses Testing (Mediation)

Hypotheses	Direct effect	P	Indirect effect	P	Total Effect	P
Firm Efficiency <~ TMC (through resource acquisition)	0.157	0.012	0.062	0.008	0.219	0.005
Resource acquisition <~ TMC	0.177	0.010	-	-	0.177	0.010
Firm efficiency <~ Resource acquisition	0.353	0.001	-	-	0.353	0.001
Firm efficiency <~Age	0.341	0.001	-	-	0.341	0.001
Firm efficiency <~Size	0.039	0.443	-	-	0.039	0.443
Firm efficiency <~Education	0.305	0.001	-	-	0.305	0.001

Note: TMC = Top Management Capabilities

between TMC and firm efficiency. Hypothesis 4 of this study suggested a mediating role of resource acquisition between TMC and firm efficiency. To substantiate Hypothesis 4 the model number 4 of PROCESS macros was applied with a bootstrap sample set to 2000 at a 95 percent confidence interval. The results reported below showed that the indirect effect of TMC on firm efficiency (via resource acquisition) was significant (β=0.0554, $p < 0.01$). While the direct effect of TMC on firm efficien-

results of the Sobel test (normal distribution theory) (z = 3.156, P < 0.01), approved that the indirect effect is significant so it indicates that partial mediating effect exists. Hence partially accept H4.

The result of the bootstrapping method at 95% Confidence interval indicates that the indirect effect is significant (β=0.0554, LLCI=0.0166, ULCI=0.1085). Hence we conclude with 95% confidence that resource acquisition partially mediates the relationship between TMC and firm efficiency. The R square value reported below depicts that TMC explained 29.12% variation in firm efficiency in the presence of resource acquisition. PROCESS macros results endorsed the results of SEM and confirmed that resource acquisition partially mediates the relation between TMC and firm efficiency.

Effect of top management capabilities on Firm Efficiency

1. Effect of TMC(X) on FE(Y)................................(Path c)

a. $F_{(1,310)}$ = 35.4321., P < 0.001, R^2 = 0.1029

b.   b= 0.2115, t = 5.9525, P < 0.001

Effect of top management capabilities on Resource acquisition.

2. Influence of TMC(X) on RA(M).............................(Path a)

a. $F_{(1,310)}$ = 11.4621, P < 0.001, R^2 = 0.0358

b.   b= 0.2153, t = 3.3856, P < 0.001

Effect of top management capabilities and Resource acquisition on Firm Efficiency

3. Influence of TMC(X) and RA(M) on FE........(Path c' & b)

a. $F_{(2,309)}$ = 63.8057, P < 0.001, R^2 = 0.2912.

b.   Influence of M(RA) on Y(FE) :b = 0.2572, t= 9.099, P < 0.01

c.   Influence of X (TMC) on Y(FE):b = 0.1561, t= 4.852, p < 0.01

4. Sobel test (Normal theory test)

z = 3.156, P < 0.01,

5. Total effect of TMC(X) on FE(Y)

b= 0.2115, t = 5.9525, P < 0.001

6. Direct effect of TMC(X) on FE(Y)

b= 0.1561, t = 4.8524, P < 0.001

7. Indirect effect of TMC(X) on FE(Y) through RA(M)

b= 0.0554, P < 0.001, BootLLCI=0.0166 ,BootLLCI=0.1085

Note: Note: TMC = Top Management Capabilities, RA=resource acquisition, FE=firm efficiency

6. Discussion and Conclusion

The model of this research was based on empirical evidence collected from the owners/managers of Pakistani SMEs through a structured questionnaire. Though the contribution of the prior research should not be underweighted, but this research has tested the upper echelon and RBV theory in a turbulent environmental setting using empirical evidence. However, prior studies have mainly focused on the qualitative approach and have emphasized on developed economies. For instance, upper echelon theory (e.g. developed by Hambrick & Mason, 1984) emphasized on the top management role in organizational outcomes and performance. This study confirmed that TMC help in the acquisition of useful, rare and imitable external resources which in turn significantly enhance SMEs' efficiency. In other words, we argue that TMC are essential for acquiring external tangible and intangible resources that are necessary for the firm's productivity. In addition to this, this study also contributes to RBV theory which states the role of unique resources in business success and superior performance (e.g., Barney, 1991). We scrutinized that adequate resources (tangible and intangible) spur SMEs' efficiency. In general, the present research favors the upper echelon theory and RBV theory in the following manner.

We found that TMC significantly enhances the firm's efficiency that supported H_1 of the study. In line with Bathula and Singh (2015) who concluded that top management involvement is vital for enhancing high efficiency and success. Similarly, Salehi et al., (2018) also argued that TMC are not only prominent for high profitability but also very crucial for boosting operational activities. Additionally, Zhao, Zha, Hou and Liang (2019) claimed that in emerging economies such as China, the top management team significantly influences operational activities and plays a crucial role in the improvement of firm efficiency. We also confirmed in this research that TMC is a significant predictor of SMEs' efficiency.

We also scrutinized that TMC help in acquiring valuable resources that supported the H_2 of the study. Consistent with Kauppila, (2015) who claimed that top managers

establish different network ties with external bodies to obtain useful resources. More-over, Helfat and Peteraf, (2015) that all managers are not so intellectual to gain valuable resources, some managers are more competent in acquiring necessary resources. Hence, we confirmed that TMC facilitate firms in obtaining external resources. This research favors the findings of Alcalde-Heras, Iturrioz-Landart and Aragon-Amonarriz (2019) who scrutinized that SMEs should strengthen their managerial network to acquire external useful resources that are essential for growth and effectiveness.

This research endorsed that resource acquisition significantly upsurges firms efficiency that supported H_3. In this context, Camisón et al., (2016) argued that a firm with useful and valuable resources is more efficient and competitive as compared to the firms face resources shortage. Moreover, the findings favor Ferreira and Fernandes, (2017) who scrutinized that adequate resources enable firms to build effective strategies that are beneficial for the firm's efficiency. This research favors the notion of Anwar et al., (2018a) who claim that sufficient resources spur firms' productivity while lack of resources leads to failure. Therefore, top managers should focus on requiring external tangible and intangible resources to survive in the long run.

This study scrutinized that resource acquisition partially mediates the relationship between TMC and firms efficiency that supported H4. Unlike Gudergan and Wilden (2018) who pointed out that TMC first influence dynamic capabilities which in turn affect firms outputs. The results partially endorse Bharadwaj et al., (2015) who demonstrated that that top managers struggle to make competitive positions through the acquired resources which in turn spur organization productivity and profitability. Additionally, Camisón et al., (2016) also claimed that top managers use their skills and competencies to manage resources that can configure the operational process.

6.1 Implications for theory

This research has come up with a few significant implications for owners, managers and practitioners who build strategies and policies for business success and long-term survival. We argued that firms need to invest in TMC which in turn help in acquiring useful resources. In other words, we recommend adequate investment in TMC—being intangible resources instead spending much money in tangible assets. Because, on one side, SMEs have not sufficient financial resources to invest in tangible resources and on the other side, investment in tangible resources is riskier than investment in intangible assets. Alternatively, TMC can enable firms in access to rare, unique and immutable resources that are necessary for efficiency and long-term growth. In the emerging market like Pakistan, many firms (especially SMEs) are unable to survive in the long run due to a lack of resources and lack of government support. Moreover, many SMEs have not enough resources to boost their operational

activities. Hence, TMC can provide an excellent opportunity to acquire expensive external resources easily to compete in the market and gain high profit. For high productivity and competitiveness, adequate resources are very crucial in the SME sector. The implications of this research are not limited to the emerging market Pakistan, but it also suggests valuable information for SMEs operating in other developing and developed countries. As pointed out by Anwar et al., (2018b), the failure ratio of ventures is not only high in an emerging market but also in on the peak in stable economies. Lack of resources and capabilities are reported as major reasons across the globe. The findings urge caution, given the challenges associated with sustaining and surviving into competitive markets to achieve desirable outcomes e.g. efficiency through TMC, rather believing in irrelevant and insignificant predictors. When top managers of a firm are not capable of configuring their internal activities and building a broad network with external bodies (e.g. suppliers, customers and government etc.), they may not be able to access external resources. Hence, SMEs need to have capable and competent managers in the top hierarchy and less competent in the bottom or perhaps in the middle. Hence, the findings may be deemed being the priority to facilitate firms in boosting their operational activities to enhance their efficiency. To summarize, we argue that the SME sector should give priority to TMC over other activities to bring up external tangible and intangible resources. Additionally, we also advise the government and responsible authorities to support SMEs financially and non-financially to acquire efficient outputs.

6.2 Limitations and future research

Having a simplistic model, this research ascends with a few precious implications but still some constraints are aligned. For instance, we focused on the emerging market Pakistan, instead of considering the neighbor countries (e.g. China) to articulate the results in a better way. We used the role of TMC in resource acquisition and SMEs efficiency rather than considering the role in other tangles. In this research, the ambiguous question either TMC significantly facilitate in acquiring tangible or intangible resources is not answered. Hence, we recommend future studies to explore the role of TMC in tangible, intangible, financial and non-financial resources to provide a clear picture. A recent study of Heyden et al., (2018) claims that management characteristics are very beneficial for innovation which may raise a question "do TMC facilitate in technological and management innovation in a different environmental setting?" to be answered in future research. We focused on the firm's efficiency; future studies can be considered other dimensions of performance such as innovative performance, environmental performance and market performance etc. Evidence from developing and emerging markets (being a comparative study) are also recommended to discover critical potential implications.

To conclude the results showed that TMC significantly affect resource acquisition and firms efficiency. However, resource acquisition partially mediates the relationship between TMC and SMEs' efficiency. We recommend owners and managers to pay considerable attention to TMC instead of believing blindly in tangible resources.

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