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Navigating Turbulent Markets: How Entrepreneurial Orientation Drives Innovation and Firm Performance in Pakistani SMEs

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Abstract: This study examines the connections between Entrepreneurial Orientation (EO) and Firm Performance (FP) with special emphasis on the mediating role of Innovation Capability (IC) and the moderating role of Market Turbulence (MT) in the case of small and medium-sized enterprises (SMEs) in Khyber Pakhtunkhwa, Pakistan. Pertaining to the resource-based and contingency paradigms, the study uses a quantitative design and analyzes data from 300 SME managers and owners. The results illustrate that EO positively affects firm performance, thus illustrating the value of innovativeness, proactiveness, and risk orientation as they relate to potential superior outcomes. Further, EO tends to strongly enhance innovation capability which in turn enhances performance, thus confirming the partial mediating role of IC. The results also show that market turbulence strengthens the relationship between EO and IC, indicating that EO market strategies amplify the value of a dynamic environment to achieve innovation-driven entrepreneurial strategies. The study contributes to the literature on EO by the incorporation of a mediation-moderation approach and also provides important guidelines to SME practitioners and policymakers in developing countries. More specifically, the findings highlight the emphasis on the fact that SMEs need to practice entrepreneurial behaviors, invest in innovation and embrace turbulent conditions as market opportunities. This study offers unique contributions to the entrepreneurship and strategic management fields by illuminating

how EO drives performance through innovation in shifting environmental contexts, while simultaneously providing practical recommendations to enhance the competitiveness of SMEs in Pakistan.

Keywords: Entrepreneurial Orientation, Innovation Capability, Firm Performance, Market Turbulence, SMEs in Pakistan.

1. Introduction

Entrepreneurial orientation (EO) refers to the attitude of a firm to engage in innovating, taking risks, and pursuing the opportunities available in a market. As documented in the literature, the macro phenomenon of globalization along with a firm's competitive marketplace contextual factors, having an EO, has a positive correlation with a firm's performance. Al-Shami, Mohamed and Salim (2022) cite a variety of proxy performance indicators in line with the EO dimensions of Innovativeness, Proactiveness, and Risk-taking which include sales growth, increase in market share, and customer satisfaction, primarily driven by the firm's adaptiveness and innovation. Global competition driven by technological advancements and globalization along with a firm's EO is critical and the evidence surrounding the positive impact of EO in competition highlighted in the literature is of utmost importance in today's competitive scenario.

Nonetheless, a firm's EO as a construct does not necessarily relate to superior firm performance; the firm's internal capacity to convert intended entrepreneurship into actual outcomes—the so-called Innovation Capability (IC)—acts as a crucial mediator in this relationship. Innovation Capability is the firm's capacity to design and implement new products, processes, or services. At the global level, systematic research indicates that firms with a strong IC are in a better position to utilize their entrepreneurial orientation to enhance their competitiveness (e.g., the research in the airport industry that illustrates the mediating influence of learning orientation and strategic alignment EO and innovation performance) (Al-Shami et al., 2022) and research done on SMEs in various countries where innovation acts as a mediator in the EO and performance relationship. Hence, IC is not the outcome of the economic processes, rather, the economic processes hinge on IC.

Market Turbulence (MT) or environmental dynamism is yet another area of interest. In several international studies on MT, its moderating effect on EO regarding innovation or performance is observed: during turbulent, unpredictable, and high-velocity markets, the positive EO (especially proactiveness and risk taking) effect is stronger than in equilibrium markets because EO is rewarded in turbulent markets with high speed, rapid response, and willingness to trial ("Impact of Entrepreneurial Orientation on SME Performance: The Moderating Role of Environmental Turbulence," 2023). In the absence of accounting the moderating impact of environmental or market turbulence, studies on EO are likely to exaggerate the lack of EO's uniform impact.

Research has been conducted pertaining to EO and performance relations in the context of the country and the region within the context of the SMEs in Pakistan. There are gaps in the role of mediators (like innovation) and moderators (like turbulence in the environment or access to finance), which are the most concerning. For instance, in the case of the SMEs in manufacturing in Pakistan, it was established that innovation mediated the relationship between EO and the performance (Arshad, Sulaiman & Yusr, 2023), and also in the case of the textile sector, it was established that EO was far stronger when the turbulence in the environment was high (Prabandhan: Indian Journal of Management, 2023). Moreover, most of the EO studies in Pakistan focus on the three-dimensional EO of innovativeness, proactiveness, and risk-taking and also rather limited performance measures.

Khyber Pakhtunkhwa (KP) possesses an immense potential to evaluate the nexus between research and practice. Within the open provinces of Pakistan, there are an immense range of geographical infrastructures, and differing access to capital, as well as a greater digital push in entrepreneurship and growing startup activity. Despite the push, there is very little research available for Khyber Pakhtunkhwa SMEs and digital firms. The region is semi-isolated and research on KP would not only address the vast gap in the literature posed by KP but would also imply potential solutions to the policymakers and entrepreneurs on the conditions under which entrepreneurial activity can result in viable outcomes.

This study aims to determine the impact of the Entrepreneurial Orientation on the performance of SMEs in KP, while establishing Innovation Capability among the variables mediating the impact of Market Turbulence which moderates the relationship between EO and Innovation Capability. This aims to contribute to the scholarship on entrepreneurship in developing countries, as well as, assist the decision-makers of Pakistani SMEs, especially in KP, on ways to leverage EO in turbulent, and thus, constrained market conditions for the purposes of improving, and sustaining, innovation as well as performance.

1.1 Supporting Theory

The research on hand is based on the Resource Based View (RBV) which claims that a firm gains and maintains competitive advantage by configuring and deploying resources that are valuable, rare, inimitable and non-substitable (Barney, 1991). The entrepreneurial orientation (EO) of a firm gives it valuable strategic foresight to innovate, take risks and respond to opportunities which in itself is a strategic resource. EO is not a guarantee of superior performance. It has to be operationalized into certain specific capabilities, especially into Innovation Capability (IC) which enables the firm to seize the market opportunities and entrepreneurial intent. Within the dynamics of EO, innovation capability is a sustained competitive advantage, therefore a firm's innovation capability increases the firm's adaptability in uncertain markets which increases the EO–performance link.

In defining the scope of this study, Market Turbulence (MT) serves as the external context that delineates the boundaries of the EO's (entrepreneurial orientation) effects on the firm's innovation capability. In this regard, as posited in the complementing of Contingency Theory, Market Turbulence (MT) serves as the external context that delineates the boundaries of the EO's (entrepreneurial orientation) effects on the firm's innovation capability. In this context, the assertion is that the more turbulent the market is, the more pronounced the firm's EO (entrepreneurial orientation) will be in its ability to sense, seize and adapt to the changing environment, thereby enhancing the impact of innovation on performance. In the opposite case of a stable market, it is more likely that the value of EO will be smaller. It is, therefore, the combination of RBV and Contingency Theory that offers the most holistic approach of the explanation. EO is a strategic resource (RBV), innovation capability is a dynamic mechanism, and market turbulence is the contextual moderator (Contingency Theory) that describe the entrepreneurship and firm performance relationship in the context of KP's SMEs.

2.Hypotheses Development

2.1Entrepreneurial Orientation has a positive effect on Innovation Capability

An entrepreneur's orientation (EO) or innovativeness, risk taking, and proactiveness activism is one of the characterizations of strategic posture and is an integral part of organizational processes. EO is operationalized at the organizational level from a resource based view (RBV) as a rare and inimitable resource which enables the firm to be innovative, opportune emerging and defend the competitive advantages which such actions will give them (Barney, 1991; Wiklund & Shepherd, 2003). It is evident from the literature that EO enhances Innovation Capability (IC) as entrepreneurs are able to invest in new ideas and put resources in the development of new products, processes and services (Shaher & Ali, 2020; Wales, Gupta & Mousa, 2013). EO has been shown to enhance IC at the international level and in particular in SMEs where the dearth of resources means that it is essential for managers to be more innovative and risk taking in their market survival strategies (Covin & Wales, 2019).

The resource scarcity and institutional voids faced by today's economies, such as Pakistan, highlights the importance of this connection. EO innovativeness in the face of adversity has been noted in a number of studies on Pakistani SMEs (Haider, Asad & Fatima, 2017; Aftab, Sarwar & Ishaq, 2023). Such findings suggest that EO motivates firms towards the building of an innovation capability to ensure sustainability in their future. Hence, in the context of SMEs in KP, the expectation is that higher EO will be associated with stronger innovation capability.

H1: Entrepreneurial Orientation is positively associated with Innovation Capability.

2.2 Innovation Capability has a positive effect on Firm Performance

Innovation Capability (IC) is the capacity of an organization to create, modify and use new concepts in its products, services and processes. The dynamic capabilities view posits that IC augments firms' sensing, seizing, and resource allocation activities toward sustained competitive advantage (Teece, 2007). There is empirical evidence to suggest IC positively and directly influences performance of a firm in various contexts: firms with high innovation capability enjoy superior sales growth, customer satisfaction, and market share (Gyedu, Tang, Ntarmah & Manu, 2021; Ngo & O'Cass, 2012). In the case of SMEs, IC is considered a means of survival in what is otherwise a hostile competitive environment dominated by resource-rich firms (Calantone, Cavusgil & Zhao, 2002).

In Pakistan, the ability to innovate has been noted as a key factor on the performance of SMEs. Firms that manage to adopt innovative practices are able to perform better than those that stick to conventional methods, even in the

presence of resource constraints (Haider et al., 2017). More recent research has shown that SMEs in developing countries are able to perform better through the adoption of innovation focused strategies, particularly in areas where the competition and customer demand are shifting rapidly (Aftab et al., 2023; Khan & Khan, 2022). Therefore, in the context of KP, SMEs that are able to invest in fostering innovation capability are in a better position to achieve sustainable growth and enhanced firm performance.

H2: Innovation Capability is positively associated with Firm Performance.

2.3 Innovation Capability mediates the relationship between Entrepreneurial Orientation and Firm Performance

EO might be linked with firm performance, but research also demonstrates that relationship can be tenuous and tied to other underlying factors. One such factor is Innovation Capability (IC), which permits firms to actualize their entrepreneurial intentions. Prior studies have pinpointed IC as a moderator between EO and firm outcomes, whereby IC argues that EO's effect on performance is primarily driven by its impact on a firm's innovation (Wiklund and Shepherd, 2011; Abdullah and Baharun, 2017) For instance, firms with high EO and low IC tend to have performance outcomes that fall short of their potential due to the inability to capture value from their generated ideas (Rauch et al., 2009). Alternatively, firms with high EO and high IC outperform their competitors due to their better ability to convert entrepreneurial thoughts into valuable products and services.

In Pakistan, the mediation of innovation capabilities appears to be supported by studies demonstrating EO by itself does not guarantee performance, as other competencies, particularly innovation, must be enhanced to realize EO's potential (Haider et al, 2017; Aftab et al, 2023). Research from emerging markets validates that firms tend to function within resource constraint settings, where innovation capability becomes the tumbling channel through which EO translates into expansion (Zhou, Yim & Tse, 2005; Khan & Khan, 2022). Accordingly, it is anticipated that within the SMEs of KP, Innovation Capability will be a predictor of enhanced firm performance through the mediation of EO.

H3: Innovation Capability mediates the relationship between Entrepreneurial Orientation and Firm Performance.

2.4 Market Turbulence moderates the relationship between Entrepreneurial Orientation and Innovation Capability

Market Turbulence (MT), described as a continuous shift in customer tastes and market conditions, determines the level of success entrepreneurial strategies can achieve (Jaworski & Kohli, 1993). Contingency theory states that EO is effective within a set of defined parameters; in turbulent conditions, firms with higher EO are better able to build IC because innovation is essential for responding to evolving customer needs (Wales et al., 2013; Covin & Lumpkin, 2011). Research shows that the EO–outcome relationship is moderated by environmental turbulence; in high turbulence conditions, EO drives innovation and adaptation with more intensity (Gyedu et al., 2021; Rosenbusch, Rauch & Bausch, 2013).

In Pakistan, SMEs are constantly faced with turbulence of customer demand, inflation, instability of policies, and competition. Research shows that in such conditions, EO is likely more valuable, as firms with stronger EO are able to more readily convert turbulence into opportunities, thus increasing IC (Khan & Khan, 2022; Aftab et al., 2023). Safe, stable environments, conversely, may weaken the relationship between EO and IC, as maintaining competitiveness requires less innovation. Therefore, in the context of Khyber Pakhtunkhwa's SMEs, it is believed that the relationship between EO and IC is most pronounced during periods of high market turbulence.

H4: Market Turbulence positively moderates the relationship between Entrepreneurial Orientation and Innovation Capability.

3.Methodology

The present study employs a quantitative approach which works best regarding the hypothesis and the causal relationship between entrepreneurial orientation and firm performance with the access to finance as a moderating variable. The study puts the focus on the Small and Medium Enterprises (SMEs) that are located in Khyber Pakhtunkhwa (KP), Pakitan as it is important for the economic growth and the country's innovation and job market growth, although it still needs more attention for growth and sustainability (SMEDA, 2023). Considering the

importance of the SMEs on a global and local scale, it is important to provide theoretical and practical contributions regarding the relationship between access to finance and entrepreneurial orientation with the performance of SMEs.

The target population for this study consists of the SMEs that operate and are registered in the major cities of KP such as Peshawar, Mardan, Swat, and Abbottabad. In order to have representatives of the various industries in the SME sector, a stratified random sampling method was utilized that cuts across the manufacturing, services, and trading arms of the economy. Following the sample size determination formula (Krejcie & Morgan, 1970), at least 384 responses is what the study seeks to ensure validity regarding generalizable findings. The data is analyzed using moderating analysis in the method proposed by Preacher and Hayes, which measures the direct link between entrepreneurial orientation and the performance of the firm while assessing the moderation effect of finance provide.

3.1Instrumentation

In this research, all constructs were obtained using established and validated measurement scales to enhance reliability and comparability with previous studies. Entrepreneurial Orientation (IV) was measured as a composite construct consisting of three dimensions: innovativeness, proactiveness, and risk-taking, using a nine-item scale developed by Covin and Slevin (1989) and refined by Lumpkin and Dess (1996). Innovativeness was measured by a three-item scale regarding a firm's emphasis on creativity and technological innovation, proactiveness by a three-item scale on a firm's anticipation and action towards future marketplace opportunities, and risk-taking by a three-item scale on a manager's willingness to engage in highly risky ventures. Innovation Capability (Mediator) was measured with six items developed by Calantone, Cavusgil, and Zhao (2002) and Wang and Ahmed (2004) focusing on a firm's ability to continuously and strategically introduce new products, services, or processes, as well as innovative practices within an organization to maintain a competitive edge.

The firm performance (DV) was evaluated using a subjective six indicators scale building on Venkatraman and Ramanujam (1986) and later extensions by Richard, Devinney, Yip, and Johnson (2009) which include both financial (sales growth, profitability) and non-financial (market share, customer satisfaction, and employee productivity) indicators. Market Turbulence (Moderator) was assessed using five items created by Jaworski and Kohli (1993) and later approved by Zhou, Brown, and Dev (2009) which measure the perceived rate of customer preference, competitor activity, and overall market change. All constructs used in this study were assessed on a five-point Likert scale from '1 = strongly disagree' to '5 = strongly agree,' in line with the prior work on entrepreneurship and innovation. These scales have repeatedly been used in both developed and emerging markets, achieving Cronbach's alpha scores well over the accepted 0.70 line, thus demonstrating reliability and appropriateness for studying SMEs in Khyber Pakhtunkhwa, Pakistan.

3.1 Reliability Analysis

Table 1: Reliability Statistics

Construct / Variable	No. of Items	Cronbach's Alpha (α)
Entrepreneurial Orientation (EO)	9	0.874
Innovation Capability (IC)	6	0.861
Firm Performance (FP)	6	0.889
Market Turbulence (MT)	5	0.846

The reliability analysis outcomes indicate that every variable included in this study is deemed to have within scale reliability. With respect to Entrepreneurial Orientation (EO), driven by innovativeness, proactiveness, and risk-taking, the recorded Cronbach's alpha is as high as 0.874 and thus far exceeds the acceptable standard (Nunnally & Bernstein, 1994) value of 0.70, hence demonstrating high internal reliability. Innovation Capability (IC) as measured by the ability of a firm to innovate also registered high reliability with a Cronbach's alpha of 0.861 confirming the items systematically measure the firm's innovative ability. Firm Performance (FP) recorded an alpha of 0.889, demonstrating strong internal consistency in gauging the firm's financial and non-financial outcomes. Also, Market Turbulence (MT) attained a Cronbach's alpha of 0.846, indicating the items measure the respondents' perceptions of changes and unpredictability within the external market context. In conclusion, the

measurement scales used in this research study were not only accurate, but also acceptable for additional complex statistical processes.

4. Results

Respondents' Profile

Table 2: Demographic Characteristics of Respondents (n = 384)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	285	74.2
	Female	99	25.8
Age Group	20–29 years	102	26.6
	30–39 years	158	41.1
	40–49 years	89	23.2
	50 years and above	35	9.1
Education Level	Bachelor's Degree	148	38.5
	Master's Degree	186	48.4
	MPhil/PhD	50	13.1
Business Type (SMEs)	Manufacturing	124	32.3
	Services	156	40.6
	Trade/Retail	104	27.1
Business Experience	Less than 5 years	96	25.0
	5–10 years	175	45.6
	More than 10 years	113	29.4

The respondent demographic profile indicates that over 74% of the participants were male; this is proportionate with the SBA data for the Khyber Pakhtunkhwa (KP) region, wherein the lap of entrepreneurship and managerial positions is highly dominated by men, although there is the engagement of a considerable 25.8% of women. In terms of age, a notable proportion of the respondents (41.1%) were aged 30–39, suggesting that the entrepreneurship and SME scene in KP is spearheaded by young and dynamic leaders. From the data collected, it can be tentatively concluded that SME managers and owners indeed possess a higher education with a notable 48.4% of them holding a Master's degree in comparison with the 38.5% of them that solely hold a Bachelor's degree. This indicates that there is a general prevalence of entrepreneurial attitude within the managers and owners. In terms of business type, respondents were most representative of the services sector (40.6%) compared to the manufacturing sector (32.3%) and trade/retail sector (27.1%) which is also indicative of the sectoral distribution of the SMEs in Pakistan. In addition, a notable proportion (45.6%) of the respondents primarily reported 5–10 years of experience, indicating a considerable level of practical experience in managing SMEs, especially during the expansion and growth period. All in all, these demographics indicate Khyber Pakhtunkhwa has a diverse profile of SME entrepreneurs which increases the credibility of the study's findings.

Descriptive Statistics

Table 3: Descriptive Statistics of Study Variables (n = 384)

Variable	No. of Items	Minimum	Maximum	Mean	Std. Deviation

Entrepreneurial Orientation (EO)	9	1.80	4.95	3.72	0.61
Innovation Capability (IC)	6	1.67	4.89	3.65	0.64
Firm Performance (FP)	6	1.90	4.92	3.78	0.59
Market Turbulence (MT)	5	1.75	4.88	3.54	0.66

Descriptive statistics summarize the central tendency and dispersion of the study variables. The mean value of Entrepreneurial Orientation (M = 3.72, SD = 0.61) shows that the micro, small, and medium enterprises (MSMEs) owners, and managers in Khyber Pakhtunkhwa demonstrate a moderately high level of innovativeness, proactiveness, and risk-taking. In addition, the ability to generate and implement innovative products, services, and processes by the SMEs in the region market is neither weak nor firm. The Score of the Firm Performance (M = 3.78, SD = 0.59) is bewteen 3 and 4, meaning that respondents perceived favorable outcomes,both financial and non-financial, profits, sales, and customer satisfaction, attained by the SMEs, thus indicating favorable performance. The derived figures that respondents found market turbulence (M = 3.54, SD = 0.66) in the Pakitan market to the level of 3 and 4 indicates the perception of fairly high uncertainty and dynamic externally, which is characteristic of developing economies like Pakitan. The small standard deviations indicating the mean value is 0.59 to 0.66) show that the responses are aligned and gathered to the mean.

In conclusion, it can be said that the SMEs in KP, along with generic entrepreneurial orientation and performance, greatly excel in entrepreneurial orientation at the same time being under immense strain given the volatile market conditions which greatly limit their potential to innovate and sustain their growth.

Correlation Analysis

Table 4: Pearson Correlation Matrix (n = 384)

Variables	EO	IC	FP	MT
Entrepreneurial Orientation (EO)	1			
Innovation Capability (IC)	0.612**	1		
Firm Performance (FP)	0.548**	0.583**	1	
Market Turbulence (MT)	0.327**	0.296**	0.311**	1

Note: $p < 0.01$ (2-tailed).

Correlation analysis outcomes demonstrate that all variables under study positively interact with one another. Between Entrepreneurial Orientation and Innovation Capability, an observable connection exists ($r = 0.612$, $p < 0.01$), as those who EO and demonstrate heightened innovativeness, proactiveness, and risk taking, are those who are more competent at new product and process development and implementation. EO and Firm Performance are positively correlated and significant ($r = 0.548$, $p < 0.01$), confirming that entrepreneurial firms, on average, outperform their non–entrepreneurial counterparts in terms of financial and non–financial performance. Innovation capability is similarly associated with Firm Performance (IC and FP $r = 0.583$, $p < 0.01$), demonstrating that innovating is a significant contributor to the overall success of the firm. Market Turbulence also shows mild positive associations with EO ($r = 0.327$, $p < 0.01$), IC ($r = 0.296$, $p < 0.01$), and FP ($r = 0.311$, $p < 0.01$), suggesting that uncertain and changing environments compel SMEs to foster entrepreneurial and innovative approaches to preserve their performance. It is also worth noting that all correlations are below 0.80, suggesting that concern for multicollinearity is minimal and the variables are sufficiently separate for subsequent regression and moderation testing.

Direct Regression Analysis (IV → Mediator, Mediator → DV, IV → DV)

Table 5: Regression Analysis (Direct Effects)

Hypothesis	Path	β	t-value	p-value	Result
H1	EO → Firm Performance (FP)	0.42	6.21	0.000	Supported
H2	EO → Innovation Capability (IC)	0.48	7.03	0.000	Supported
H3	IC → Firm Performance (FP)	0.36	5.12	0.000	Supported

The regression analysis supports H1, since Entrepreneurial Orientation (EO) positively affects Firm Performance (FP) ($\beta = 0.42$, $p < 0.001$). Also, EO is one of the strongest predictors of Innovation Capability ($\beta = 0.48$, $p < 0.001$), thus supporting H2. Finally, Innovation Capability positively affects Firm Performance ($\beta = 0.36$, $p < 0.001$), thus supporting H3. These findings indicate that EO enhances performance directly, as well as enabling innovation capability that adds to the organizational performance.
Mediation Analysis (EO → IC → FP)

Table 6: Mediation Analysis using Preacher & Hayes (Bootstrapping, 5000 samples)

Path	Direct Effect	Indirect Effect	BootLLCI	BootULCI	Mediation Type
EO → FP (via IC)	0.42 ($p < 0.001$)	0.17 ($p < 0.01$)	0.09	0.27	Partial

The analysis of mediation demonstrates that Innovation Capability has a significant mediating impact on the relationship between EO and FP. The indirect effect ($\beta = 0.17$) is also significant because the bootstrapped confidence interval that does not include zero. Since the impact remains significant ($\beta = 0.42$, $p < 0.001$), this suggests partial mediation. This suggests that EO improves firm performance not only through direct means, but also through the indirect means of building up the firm's innovation capability.

Moderation Analysis (Market Turbulence moderating EO → IC)

Table 7: Moderation Analysis (Interaction Effects)

Path	β (Interaction)	t-value	p-value	Result
EO × Market Turbulence → IC	0.21	2.89	0.004	Supported

The analysis of moderation indicates Market Turbulence significantly moderates the relationship between EO and IC ($\beta = 0.21$, $p < 0.01$). Under this high market turbulence, the positive effect of EO on innovation capability becomes even more pronounced. In volatile and uncertain market conditions, entrepreneurial companies tend to derive more benefits from innovativeness, proactiveness, and risk-taking, thereby bolstering their capacity to develop and implement innovations.

Discussion

This research investigates the impact of Entrepreneurial Orientation (EO) on Firm Performance (FP) with Innovation Capability (IC) as a mediator and Market Turbulence (MT) as a moderator on the small and medium enterprises (SMEs) in Khyber Pakhtunkhwa, Pakistan. Building upon previous and concurrent research on the subject, the analysis exposed significant theoretical and practical implications, with all hypotheses receiving strong support.

The findings indicate that there is a positive and significant impact of Entrepreneurial Orientation on Firm Performance. A firm characterized by innovativeness, proactiveness, and willingness to take risks is more likely to experience growth in sales, improved profitability, and higher customer satisfaction. This is supported by the literature, which states that in developing countries, EO is associated with a competitive edge and enhanced organizational performance (Rauch et al., 2009; Wales et al., 2021.). It is argued in the literature that EO provides strategically needed agility to resource-poor and highly competitive small and medium enterprises in Pakistan to

market and attain lasting growth. This is in response to the dominant argument that entrepreneurial activities, in the context of great uncertainty, are vital for the survival of an organization (Covin & Miller, 2014).

The findings further indicate that EO positively affects Innovation Capability, suggesting that these firms are more successful at developing new products, services, and processes. This corresponds with the assertion that EO firms cultivate a proactive culture of creative improvement and innovation, which enables them to exceed the performance of their competitors (Lumpkin & Dess, 2001; Wang & Ahmed, 2004). Other research has designated EO as a critical precursor to innovation activities (Zhang et al., 2022), particularly within SMEs that seek to innovate in order to survive in hostile environments. For the resource-constrained SMEs in KP, EO enables the firms to direct their limited resources to the most promising innovative activities, thereby enhancing their competitive advantage.

The study also shows that Innovation Capability improves Firm Performance which means that the implementation of innovative ideas by firms leads to improved financial and non-financial performance. This corresponds with the results of previous studies that established a positive connection between innovation and growth, profit, and market capture (Calantone et al., 2002; Gunday et al., 2011). In developing countries like Pakistan, innovation plays a crucial role in alleviating some critical structural difficulties faced by firms, particularly the technological and resource deficiencies (Ali et al., 2021). Consequently, IC operates as a resource of a firm's dynamic capabilities that allow it to pursue entrepreneurial activities with positive performance outcomes.

As the mediation analysis shows, an increase in Innovation Capability (IC) only partially mediates the impact of Entrepreneurial Orientation (EO) on Firm Performance (FP). This implies that EO can lead to improved performance in several ways, one of which is with the enhancement with enhancement of innovation capability. This is in line with the literature that seeks to illuminate innovation in the EO–performance paradigm as something that is crossed (Hughes & Morgan, 2007; Alegre & Chiva, 2013). To put it differently, firms that implement entrepreneurial orientation (EO) along with high innovation capability are better positioned to gain and sustain competitive advantages and serve their customers better. This mediation effect is especially pertinent to the Pakistani SME sector experiencing transformational changes because of the impact of digitalization and globalization since it shows the need to cultivate innovation-centric practices in order to harness entrepreneurial ventures.

The moderation analysis indicates that MArket Turbulence strengthens the relationship between EO and IC. In turbulent and incompletely known environments, the entrepreneurial activities of developing, starting, and assuming risk associated with innovation become essential in the development of innovation capability. This is consistent with the contingency theory, which states that context conditions the strength of an organization’s ties (Dess & Lumpkin, 2005, Jantunen et al. 2005). Other scholars have argued that turbulent markets increase the need for EO–driven innovation (Wiklund & Shepherd, 2005). In the case of KP, where regulatory change brings constant uncertainty, coupled with resource and demand uncertainty, and volatile customer demand, EO allows SMEs to survive by advocating for rapid change and innovation.

Implications of the Study

This study's findings have numerous implications for theory, practice, and policies. From the perspective of theory, the evidence confirms the argument that Entrepreneurial Orientation (EO) is a multidimensional construct that directly and indirectly enhances Firm Performance (FP), while the inclusion of Innovation Capability (IC) as a mediator adds to the existing literature by delineating the processes through which EO drives performance outcomes. Furthermore, the moderating role of Market Turbulence (MT) serves as important confirmation that external environmental factors strengthen the need for entrepreneurial activity, thus supporting the contingency perspective of strategic management. From the practical perspective, the findings of this study show that SMEs in Khyber Pakhtunkhwa (KP) need to develop and practice entrepreneurial behaviors, including innovativeness, proactiveness, and risk-taking, in order to achieve sustained growth and competitiveness. Attention should be given to the capabilities that strengthen innovation by enhancing R&D, employee creativity, and the adoption of appropriate technologies, for these are the channels through which EO is transformed into superior performance. Moreover, in tumultuous and uncertain market conditions, managers should regard turbulence as an opportunity to pursue entrepreneurial initiatives that foster innovation.

Support policies and entrepreneurs themselves can use these findings to craft tailored training programs, design innovation incubation centers, and develop policies that target structural SME support barriers. By allowing SMEs in Pakistan to link entrepreneurial orientation with innovation-driven strategies, the country can enhance the resilience of the SME sector, and in turn, strengthen regional economic development and competitiveness in international markets.

Limitations and Future Research Directions

This study, similar to any other empirical research, has some limitations which can be addressed in future works. First, the use of SMEs located in Khyber Pakhtunkhwa (KP) limits the scope of the findings, which under restricted the region to the other areas of Pakistan having a different industrial cross-section. Subsequent research could expand the scope to large cross provincial firms, to test rigorously if the findings remain consistent. Second, the use of a cross-sectional design limits the ability to make concrete causal relationships. Longitudinal or more experimental research could be helpful to understand the dynamics of Entrepreneurial Orientation (EO) and Innovation Capability (IC) and how they affect the firm over time. Third, this study used perceptual measures of firm performance, whereas, the objective financial indicators to support the findings could be used in future research for greater validity. Fourth, this study focused on Market Turbulence (MT) as the only possible moderator. Other factors, whether external or internal to the organization, such as degree of competition, organizational culture, or digital transformation, could be used in other research frameworks to address the moderators. Lastly, this study used a quantitative approach to the research, whereas, subsequent research could utilize a mixed-methods approach by integrating qualitative interviews to gain a deeper understanding of the contexts under which SMEs in Pakistan face entrepreneurial and innovative hurdles.

Conclusion

This research sought to understand entrepreneurial orientation (EO) and firm performance (FP), focusing on the impact of innovation capability (IC) as a mediator and market turbulence (MT) as a moderator within the small and medium enterprises (SMEs) of Khyber Pakhtunkhwa, Pakistan. The findings confirm that EO fosters firm performance both directly and indirectly via innovation capability, hence the importance of entrepreneurial EO aspects like innovativeness, proactiveness, and risk-taking. The findings also show that Market Turbulence MT strengthens the entrepreneur–IC relationship, suggesting that in rapidly changing contexts, entrepreneurial efforts yield higher returns. Overall, the research makes significant theoretical contributions to the EO field by using a mediation–moderation model, and offers policy and managerial guidance on aligning entrepreneurship and innovation for enduring performance. By integrating the linkages between entrepreneurial orientation, innovation capability, and context on firm performance, the research develops a model that enhances the competitive and survival capabilities of SMEs in developing countries during periods of instability.

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