

Impact of Entrepreneurial Orientation, Entrepreneurial Management and Environmental Dynamism on Firm's Financial Performance

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Abstract: Entrepreneurial Orientation (EO) involves business mindset and behavior. The firm and industry context of entrepreneurship has always fascinated researchers for inquiry. The main aim of this study is to establish an association of factors such as EO characteristics (innovativeness and risk-taking), Entrepreneurial Management (EM), and Environmental Dynamism (ED) with firm's financial performance. The objective also includes examining the moderating impact of EM and ED respectively on the link between EO characteristics and firm performance. This investigation covered small-to-medium enterprises (SMEs) in Pakistan from the cities of Islamabad and Lahore, and constituted a diverse sample of entrepreneurs from various sectors. Results reveal direct positive, individual relationships of innovativeness, risk-taking, and EM with firm's financial performance. As far as moderating influence is concerned, EM and ED could not establish any significant interaction between EO characteristics and firm performance. Interestingly, from the contextual landscape of this study, risk-taking and EM have proved to be stronger, more consistent and stable predictors of performance compared with innovativeness. The EO dimension of innovativeness exhibits dual results of either strong or very weak predictor to performance, hence implying vulnerability. In fact, running full regression, the impact of innovativeness on performance gets diminished in the presence of risk-taking and EM. The investigation also reveals that when controlling for ED the analytical framework shows a slightly better degree of association between predictor and criterion variables. Under the context of this study it, therefore, concludes that SME managers should rely more on risk-taking dimension of EO compared with innovativeness especially in executing entrepreneurial management (EM) approaches.

Keywords: *Entrepreneurial Orientation, Entrepreneurial Management, Environmental Dynamism, Financial Performance, Entrepreneurship*

1. Introduction

Entrepreneurship has traditionally been studied in the light of new economic activity and risk associated with the new venture process. The subject research has been extended to include characteristics of person behind new venture creation, the entrepreneur. In addition, studies have looked into different approaches of management style and techniques required to run small-to-medium enterprises (SMEs) compared with large-scale ventures. In view of extended research interest, various contexts and backgrounds need to be explored in making entrepreneurship a worthwhile research activity. In Pakistan, there is a growing need to study entrepreneurial sector in light of their characteristics and management practices for the interest of academic and research community. This study includes business firms in local context of Pakistan where SMEs rely upon their entrepreneurial instinct and practical skills for business survival.

Being entrepreneurial-led, small-to-medium firms need to possess a vision towards growth that is consistent with opportunity-seeking and -utilizing characteristics. The study combines two leading constructs for investigation namely Entrepreneurial Orientation (EO) and Entrepreneurial Management (EM). Researchers have time and again considered EO and EM to positively associate with firm performance. EO is a construct that includes characteristics of innovativeness, risk-taking, and proactively for entrepreneurial ventures (Covin & Slevin, 1991). Over the years, EO has been widely and empirically tested for its contribution to performance. It has also been extensively studied under various control conditions and moderating influences of environmental and organizational factors in numerous industry contexts. As far as EM is concerned, it indicates the degree of opportunity-seeking in management and control of resources and entrepreneurial decision-making (Stevenson, 1983). However, the construct of EM has not been

comprehensively tested at empirical level to a very large extent. The need and importance to research both constructs has been well-acknowledged by Brown, Davidsson & Wilkind (2001). For this study, both EO and EM have been applied in a special framework as an attempt to provide evidence of their complementary and synergistic relationship with each other and their positive effect on firm performance. This study bears valuable academic and practical implications. It uncovers fruitful insight on how local manufacturing, retailing and service firms can enhance their entrepreneurial mindset and complement their managerial skills in getting a foothold in competitive market. This study is interesting in a sense to provide empirical evidence of synergy between EO and EM to impact upon firm performance. As the existing literature provides limited evidence of EO and EM interaction, a look into the Pakistan SME landscape seems fruitful in analyzing the relationship between the two.

For this inquiry, the research problem is finding a link between Entrepreneurial Orientation, Entrepreneurial Management, and Environmental Dynamism in association with firm's financial performance. Under this framework, first, the investigation confirms a direct positive relationship between the two dimensions of EO (innovative and risk-taking characteristics) with firm performance. Second, the study verifies direct association of EM and ED with performance respectively. Third, the research extends to confirm if there is a moderating impact of either EM or ED on the link between EO characteristics and firm performance. In other words, if a moderating role of EM and ED exist with a) the association between innovativeness and financial performance and b) the link between risk-taking and financial performance. The entire analysis shall take place under control conditions of entrepreneurial dynamism (ED).

The rest of paper will focus first on literature review to facilitate in understanding the evolution of both entrepreneurial constructs. After developing a research perspective, a configuration of EO, EM, and ED shall take shape of a theoretical framework leading to research hypotheses. This shall determine research methodology and analytical approach. In the last part, findings will be discussed with inferences leading to research implications, future study direction, and conclusion.

2. Review of Literature

Over the years, authors have explained Entrepreneurial Orientation (EO) as a dominant mindset and a strategic behavior of organizations (Hitt & Ireland 2000). In the modern history of entrepreneurship literature, Mintzberg (1973) was perhaps the first to attribute the joint factors of proactivity and risk-taking with entrepreneurship. Later, Khandwala (1977) defined entrepreneurial orientation as a strategic choice and developed elements of scale to measure its relevant characteristics. This was followed by Miller & Friesen (1982) who defined EO dimensions using Khandwala's (1977) scale and adapted elements to measure relative degrees of entrepreneurship in firms. Miller & Friesen (1983) elaborated make-up of entrepreneurial firms including high propensity towards product marketing innovation, risky ventures and proactive innovations. Miller also researched determinants of entrepreneurship in different types of firm contexts. The conceptual foundations of Miller and Khandwala contributed toward building EO as a thorough construct. Using the platform of earlier research, Covin & Slevin (1986, 1989, 1991) characterized firms with high levels of entrepreneurial orientations with specific behavior patterns: innovativeness, risk-taking, proactivity. In the following years, Chen & Hambrick (1995) explained entrepreneurial orientation in terms of competitive aggressiveness. This was supported by Lumpkin & Dess (1996) who formalized the dimensions of competitive aggressiveness to EO construct. In the years to come, testing the EO instrument in cross-cultural settings, Knight (1997) found its validity, reliability, and freedom from cultural bias. Knight pointed that EO is a dynamic organizational-level process applicable to organizations of any size and type. Recently, Morris & Kuratko (2002) identified EO as a major construct in the perspective of strategic management and entrepreneurship literature. This assertion goes in line with earlier work showing strong connections between EO and various firm-level activities. Similarly, Lumpkin & Dess (2001) referred EO to the strategy-making processes and styles of organization.

In general, popular research organizes the construct of EO in three dimensions: Innovativeness, pro-activity and risk-taking. Innovation is considered as an inclination to enter into new markets and introduce new technologies, new products and services with considerable modifications and improvements (Covin & Slevin 1991). Innovativeness is a key component of EO construct since, according to Lumpkin & Dess (1996), it

signifies firm's ability to support and engage in new ideas by the way of experimentation and creative processes and hence contributes towards developing new products, services, processes and technologies. Similarly, innovation in the organizational context is associated with creative ideas possessing valuable contribution (Hitt & Ireland 2000). Innovation is both considered as adoption of a new idea or behavior to the firm (Zammuto & O'Conner, 1992) as well as a mindset that drives organizational activities (Kuczmarski, 1996). Similarly, proactivity is the second EO dimension taken as an ability to benefit from contextual opportunities such as introducing new products and services, technologies and management techniques in attaining competitive advantage. Miller (1987) linked proactivity to assertive strategy-making. According to Morris & Kuratko (2002), proactivity looks into the future, creates an idea, assumes responsibility, anticipates and prevents problems, communicates effectively, remains adaptable, and perseveres through new process or new product launch. The third characteristic of EO, risk-taking, is regarded as a tendency towards high-return initiatives under the probability of failure. Earlier literature talked about entrepreneurial risk in light of decision-making for new ventures, products or processes under uncertainty and potential for gain and loss (Cornwall & Perlman, 1990). Thus, the foundation of risk-taking dimension comes from early definitions of entrepreneurship that revolved around willingness to undertake calculated business risk (Brockhaus, 1980). As far as organizational and environmental factors are concerned, studies have indicated their influence on the relationship between EO and firm performance. For example, in line with Zahra (1991) who confirmed various factors of EO to impact upon firm performance, Covin and Slevin (1989, 1991) proposed that internal and external organizational variables put a moderating impact on the link between EO and firm performance. Similarly, Lumpkin & Dess (2001) identified variables that moderated the link between EO and performance, thus extending the research on EO from earlier contributions.

As a second leading construct of this research, Entrepreneurial Management (EM) focuses upon opportunity-seeking and a promoter-type behavior as promulgated by Stevenson (1983). According to Stevenson, EM is a tendency to exploit opportunities irrespective of resources controlled and it differs from traditional management i.e. trustee-type behavior that primarily stresses upon efficient utilization of the resources under management control. Similarly, Day (1992) treats EM to comprise innovative developments from new or reconfigured resources regardless of the scope of such efforts. The EM construct possesses six dimensions as understood by Stevenson (1983). Entrepreneurial Culture, the first dimension of EM, rapidly breeds ideas and effectiveness. Researchers such as Cornwall & Perlman (1990) maintain that organizational culture plays a vital role in entrepreneurship. They consider culture as a set of basic beliefs and assumptions about purpose and meaning of organization, its members and their behavior. Moreover, culture defines organization in the context of external environment. From this setting, Cornwall & Perlman believe that organizational learning takes place efficiently, filters information through external and internal networks, and absorbs needs and behavior of markets, customers and the competition. Management Structure, the second dimension of EM, portrays configuration of authority, responsibility and accountability of the entire firm and its constituents. Researchers such as Hisrich & Peters (1986), consider organizational structure to complement and extend entrepreneurial activity in firms. Resource Orientation, the third dimension of EM, facilitates entrepreneurial organizations in creating new capacities to acquire and configure existing resources in unique ways. Resource orientation in modern literature is a tendency of managers to establish essential capabilities and assets with intent to develop operational, financial and intellectual asset base aimed at taking advantage from external opportunities. Reward Philosophy, the fourth dimension of EM, signals financial or non-financial return to stakeholders as they fulfill essential risk-based tasks for attaining organizational goals. This dimension supports the view of entrepreneurial pursuit as a function of risk and reward (Morris & Kurtako, 2002). Growth Orientation, the fifth dimension of EM, provides direction to firm in expanding its products, markets or customer base. This includes expansion of size, scale, and scope of firm's strategic and operational activities that require investments, assets or both. Strategic Orientation, the sixth and last dimension of EO, involves decision-making aimed at generating sales, revenues, and market share.

As a firm's strategy is normally planned or it may emerge over time, strategic orientation and strategic management practices facilitate entrepreneurial behavior as it is a major philosophy viewing long-term competitive situation, calling for adjustment in organizational resources, capabilities, processes and product-market decisions (Covin & Slevin (1991). The third main construct of this research, Environmental Dynamism (ED), is attributed to the instability caused to a firm's market based upon continuous changes in product or factor markets (Sciacca *et. al* 2006). Drucker (1985) points at opportunities stemming from shifts in political,

social, economic, or technological environment. Similarly, Zahra (1991) considers dynamic environment to signal emergence of new windows of opportunities as changes in external markets take place. Similarly, Stevenson & Gumpert (1985) consider environmental dynamism as a primary driver for innovative strategies. The reason being, environmental dynamism plays a key role in innovating products, adapting to markets or adding new market segments for attaining competitiveness (Davis, *et. al*, 1991).

Looking at literature, first, there is limited evidence pertaining EM construct in explaining link between EO and firm performance. Second, the combination of EO with EM in a larger framework of organizational entrepreneurship is not holistically covered by research (Brown *et al*, 2001). Third, the synergistic impact of EO and EM to augment firm performance needs to be comprehensively researched especially when controlling for environmental dynamism (established to have a link with firm performance). Based on above limitations of existing literature, the rationale of this study along with connection between its constituting variables becomes evident.

Constructs, Variables, and Operational Definitions

Control Variables: This research brings along information about organizational characteristics such as age and size of sample businesses. Age signifies the number of years the business has been operational whereas size reflects number of employees of the firm as reported by the respondents. Besides above, entrepreneurial studies also use Environmental Dynamism (ED) as control variable based on its association with the firm performance, the dependent variable. For example, Covin *et al* (2006) has extensively used the two environmental variables such as environmental dynamism and environmental hostility as control variables in research to partial out their impact and determines the true effect of independent variables on firm performance.

Independent Variables: Entrepreneurial Orientation (EO) – As described above, the construct of entrepreneurial orientation involves factors of innovativeness, risk-taking, and proactive behavior. It has been extensively used in testing purposes by the research community for a long period of time. The construct involves a 7-point scale used by Covin & Slevin (1989) based on items adapted from Khandwalla (1976/77) and Miller & Friesen (1982). In this scale, seven items were involved and language was adapted for effective comprehension of scale elements. The respondents were asked to mark on a 7-point Likert-type scale, reflecting degree of their tendency towards entrepreneurial versus conservative orientation. For the entrepreneurial orientation scale the average of the individual item scores was taken as the scale's score. Higher overall scores on this scale reflected a greater tendency towards entrepreneurial mindset.

Independent/ Moderating Variables: a) Entrepreneurial Management (EM) - In this study, EM is used as both a direct as well as a moderating variable. As mentioned earlier, EM basically involves dimensions of strategic orientation, resource orientation, management structure, reward philosophy, growth orientation, and entrepreneurial culture. For this research, the instrument of EM was adapted from the scale developed earlier by Brown *et al*, (2001) who operationalized Stevenson's (1983) conceptualization of entrepreneurship as opportunity-based firm behavior. Similar to the other scales, the respondents were asked to mark on a 7-point liker-type scale indicating the degree of their tendency towards entrepreneurial versus traditional management practices. Here again, the average of the individual item score was considered with high overall scores indicating a greater tendency towards entrepreneurial management rather than traditional management.

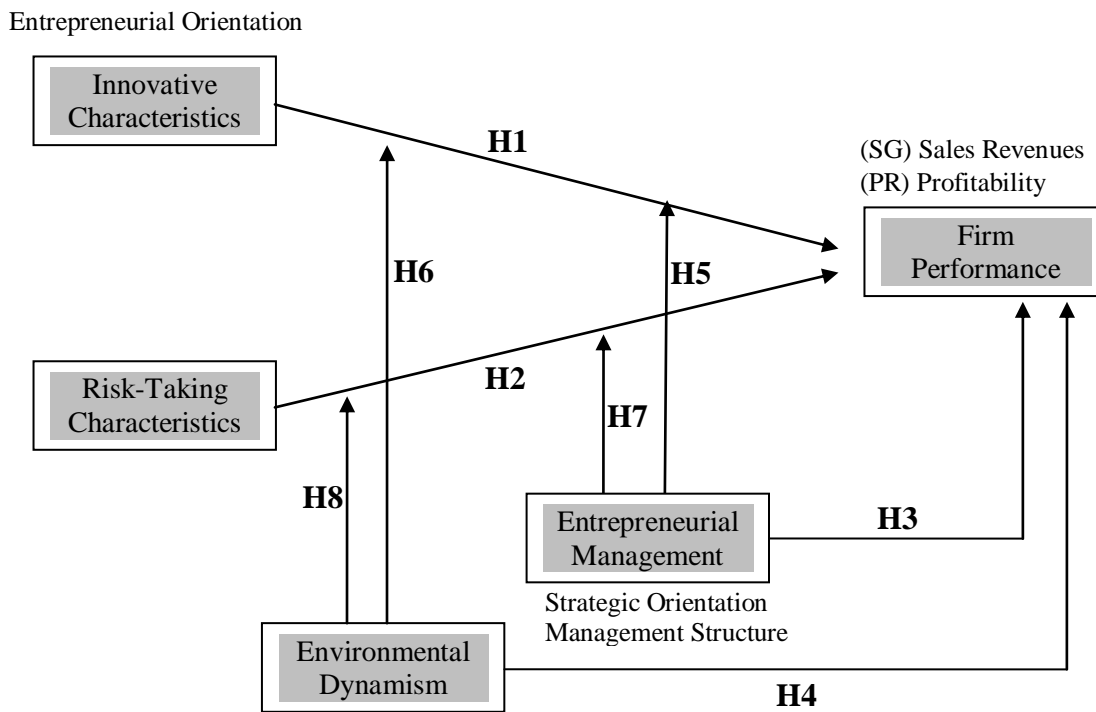
b) Environmental Dynamism (ED): This variable signified industry changes and shifts in supply, demand, and innovation conditions. The variable and scale for environmental dynamism has been used by Miller & Friesen (1982) and extensively employed by researchers. Similar to previous scales, respondents were asked to mark on a 7-point liker-type scale, indicating how fast or stagnant they perceived their environment for business and investment purposes. The average of the individual item scores were regarded as the scale's score, with high overall scores on the scale indicating a greater shift towards perception of environmental dynamism.

Dependent Variable: Firm's Financial Performance (FP): Generally, business performance is a measure to include sales and revenues, profitability and growth, and sustainability of business and customer value. For this research, above metrics were narrowed down as performance measures to gauge financial health of

company in sales growth and profitability relative to the most competitive firm in industry. This scale was based upon firm manager's perception and evaluation of how their firm fared up with the largest competitor in the market.

Theoretical Framework: The research covers constructs such as Entrepreneurial Orientation (EO), Entrepreneurial Management (EM), and Environmental Dynamism in light of their impact on firm's financial performance. Specifically, the study investigates the relationship of EO characteristics including innovativeness and risk-taking with firm's financial performance. The model also includes moderating role of EM and ED on the predictor-criterion link. The framework intends to operate under control conditions of Environmental Dynamism (ED). The above constituents have led to following theoretical framework for the purpose of empirical testing

Figure 1: Linkage between Elements of Entrepreneurial Orientation, Entrepreneurial Management, and Entrepreneurial Dynamism in Determining Firm Performance



Hypotheses Based on literature review and theoretical framework, the following set of hypotheses emerges for our investigation:

- H1: There is a direct association between innovative characteristics and firm performance
- H2: There is a direct association between risk-taking characteristics and firm performance
- H3: There is a direct association between entrepreneurial management and firm performance
- H4: There is a direct association between environmental dynamism and firm performance
- H5: The relationship between innovative characteristics and firm performance is moderated by entrepreneurial management
- H6: The relationship between innovative characteristics and firm performance is moderated by environmental dynamism
- H7: The relationship between risk-taking characteristics and firm performance is moderated by entrepreneurial management
- H8: The relationship between risk-taking characteristics and firm performance is moderated by environmental dynamism

3. Research Methodology

This research is descriptive in nature using a quantitative approach aiming to measure and understand nature and impact between independent, dependent and moderating factors i.e. establishing respective relationships between EO dimensions, ED, EM and their relative influence on firm performance. The population assumed business organizations from the city of Lahore and Islamabad as the total population. Using convenience sampling, a diverse sample of 176 firms was received from questionnaires. Excluding missing items left a size of 140 samples for the analysis. Any typical sample comprised proprietor, partner or top management level respondent such as general manager or any similar position with key decision-making capacity on a day-to-day basis. Data of survey instruments was collected ensuring that the owner or top manager filled the survey himself/herself to capture reliability of information as required. The entire questionnaire consisted of 26 items as follows: 7 from background information of the respondents, 7 from Entrepreneurial Orientation, 6 from Entrepreneurial Management, 4 from Environmental Dynamism, and 2 from Firm's Financial Performance. All variables were tested for reliability criterion set by Chronbach (1951). The cut-off value of Chronbach alpha was assumed to be 0.63 (Nunnally, 1967). All items and their Chronbach alpha scores are presented in Table 1.

Table 1: Reliability Analysis of Instrument items

Variables	Chronbach Alpha
Innovative Characteristics (IC)	0.70
Risk-Taking Characteristics (RC)	0.71
Entrepreneurial Management (EM)	0.62
Environmental Dynamism (ED)	0.67
Financial Performance (FP)	0.85

Factor analysis - This process identifies variables of factors to explain patterns of correlation within a group of observed variables. It is used to reduce data and qualify a small number of factors explaining most of the variance observed in a larger number of variables. In this study, to check the construct validity, nine items, excluding dependent variable, were tested for Principal Component Factor Analysis with Varimax rotation. According to Table 2, KMO revealed a score of 0.66 with Bartlett's Test of Sphericity significant at 0.000. The entire factor loadings were greater than 0.4 to our satisfaction.

Table 2: Factor Analysis

Variable	Items	Factor Loadings	Eigen Value	% Variance
Innovative Characteristics (IC)	IC_1	0.81	1.95	21.75
	IC-2	0.74		
	IC-3	0.76		
Risk-taking Characteristics (RC)	RC-1	0.88	1.58	17.57
	RC-2	0.80		
Entrepreneurial Management (EM)	EM-1	0.83	1.49	16.59
	EM-2	0.85		
Environmental Dynamism (ED)	ED-1	0.79	1.51	16.83
	ED-2	0.91		

KMO = 0.661; Bartlett's test of Sphericity = 272.06 at $P < 0.000$

4. Findings and Analysis

The correlation of the entire set of item variables from 140 observations are depicted in Table 3, where results display moderate associations of EO characteristics (innovative, risk-taking), EM, and ED with firm

performance. Citing from other entrepreneurship studies, Covin et al (2006) reports the range of correlation among variables from $r = 0.01$ to 0.47 ; Wilkund & Shepherd (2004) find correlation range of similar variables from $r = 0.024$ to 0.36 ; and Zhou *et. al* (2005) report correlation values of entrepreneurial variables from a low of 0.01 to a high of 0.58 . The results of this study are consistent to results in larger entrepreneurship studies, with correlation coefficient (r) ranging between 0.02 and 0.39 . The respective mean and standard deviation of items are shown in Table 4.

Table 3: Correlation Table

	Number of Employees	Business Age	IC	RC	EM	ED	Firm Performance
Number of Employees	1						
Business Age	.45**	1					
IC	.15	.10	1				
RC	.22**	.20*	.39**	1			
EM	-.16*	-.20*	.15	.07	1		
ED	.05	.06	.23**	.24**	-.06	1	
Firm Performance	.22**	.21**	.18*	.25**	.13	-.02	1

Table 4: Descriptive Statistics

Variables	Mean	Standard Deviation
Number of Employees	2.65	1.25
Business Age	2.07	0.86
IC	4.24	1.20
RC	3.90	1.28
EM	3.63	1.31
ED	4.35	1.29
FP	4.43	1.23

Table 5: Descriptive Statistics

Items	Mean	Standard Deviation
IC-1	4.1	1.6
IC-2	4.5	1.4
IC-3	4.1	1.5
RC-1	4.0	1.4
RC-2	3.9	1.5
EM-1	3.9	1.6
EM-2	3.4	1.5
ED-1	4.5	1.6
ED-2	4.2	1.4

Regression Framework: The entire set of data was put to hierarchical regression analysis as employed by Covin et al (2006). Same approach has been adopted by Wilkund & Shepherd (2004) where at each step of this analysis the next higher order interaction is added (i.e. 2-way or 3-way interactions) with incremental R² and significance values calculated. For this research, regression analyses involving main/direct effects and interaction/moderating effects were administered under two leading approaches: 1) Entrepreneurial Dynamism as a Moderating Variable, and 2) Entrepreneurial Dynamism as Control Variable. Following discussion explains both approaches from the analytical perspective.

Approach 1: Entrepreneurial Dynamism as Moderating Variable: Entrepreneurial Dynamism has been used as a moderating variable by Covin & Slevin (1989) and Wilkund & Shepherd (2004) in their research. In the same way, Becherer & Maurer (1997) have used environmental turbulence and hostility as moderating variables in gauging interaction effects of environment on entrepreneurial and marketing orientation. Similarly, Miller & Friesen (1982) have employed environmental variables to positively influence and relate with innovation for both entrepreneurial and conservative firms. For the purpose of estimating moderating or interaction effects, Baron & Kenny (1986) propose method of using the product of moderating and independent variables as the moderating effect caused between the independent and dependent variable relationship. This approach has been confirmed by Covin (1988) who cited Sharma *et. al* (1981) that in moderated regression analysis, interaction effects are tested by regressing the dependent variable on one independent variable as well as the hypothesized moderator along with the cross-product of independent and moderating variables. A typical moderating or interaction effect of regression equation could be depicted as:

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3 (x_1 \times x_2) + \epsilon$$

Regressions involving direct effects are shown in Tables 6 while those depicting moderating effects are presented in Table 7.

Table 6: Direct Effects with Firm Performance

Dependent: Financial Perf	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
<i>Step 1: Control Variables:</i>										
Number of Employees				0.17**	0.16*	.12	0.16*	0.15*	.145	.141
Business Age	0.16*	0.14	0.12	0.25*	.21	.17	0.24*	0.21*	.213	.214
<i>Step 2: Independent Var:</i>										
Innovative Char (IC)		0.150*				0.087	0.115		.059	.078
Risk-Taking Char (RC)			0.191**			0.159*		0.168**	0.148*	0.165*
Entrepreneurial Mgmt (EM)				0.190**			0.170**	0.169**	0.16**	0.151*
Environmental Dyn (ED)					-0.046					-0.092
<i>R</i> ²	0.069	0.090	0.106	0.108	0.071	0.112	0.120	0.136	0.139	0.147

P*<.10. *P*<.05, ****P*<.01, *****P*<.001

Table 7: Interaction Effect on Performance: Environmental Dynamism and Entrepreneurial Management as Moderating Variables

<i>Dependent: Financial Performance</i>	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Step 1: Control Variables:</i>					
Number of Employees	0.151*	0.138	0.152*	.125	0.133
Business Age	0.236*	0.198	0.212	.166	0.196
<i>Step 2: Independent Variables:</i>					
Innovative Characteristic (IC)	0.398*	0.04			0.391
Risk-Taking Characteristic (RC)			0.096	.100	-0.165
<i>Step 3: Moderating Variables</i>					
Entrepreneurial Management (EM)	0.535*		0.078		0.319
Environmental Dynamism (ED)		-0.222		-0.196	-0.22
<i>Step 4: Interaction Effects</i>					
Innovative Characteristic (IC)X Entrepreneurial Management (EM)	-0.080				-0.099
Innovative Characteristic (IC) X Environmental Dynamism (ED)		0.032			0.014
Risk-Taking Characteristic (RC) X Entrepreneurial Management (EM)			0.021		0.067
Risk-Taking Characteristic (RC) X Environmental Dynamism (ED)				0.025	0.017
<i>R</i> ²	0.130	0.099	0.105	0.116	0.163

P*<.10. *P*<.05, ****P*<.01, *****P*<.001.

Approach 2: Entrepreneurial Dynamism as Control Variable - The second analytical method used in this research was controlling for Entrepreneurial Dynamism (ED). This approach works well to eliminate the positive association of ED on firm performance from the analysis. Regression analysis under environmental control variables has been extensively utilized by Covin et al (2006) and other leading researchers. To justify this approach, Wilkund & Shepherd (2004) point that control variables exhibit different organizational and environmental characteristics that, in turn, may have an impact on firm performance (the dependent variable). Hence this effect needs to be partialed out from the analysis to determine the true relationship between predictor and criterion variables. After controlling for environmental dynamism, the regression of direct effects and interaction effects are shown in Table 8 and Table 9.

Table 8: Direct Effects on Performance under Environmental Dynamism as Control Variable

<i>Financial Performance</i>	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<i>Step 1: Control Variables:</i>								
Number of Employees	0.161*	0.140	0.128*	0.18**	0.120	0.16*	0.14*	0.141
Business Age	0.211	0.204	0.173	0.256*	0.175	0.24*	0.21*	0.214
Environmental Dynamism (ED)	-0.04	-0.08	-0.09	-.037	-.109	-.066	-.080	-0.09
<i>Step 2: Independent Variables:</i>								
Innovative Characteristic (IC)		0.171*			0.10	0.133		0.078
Risk-Taking Characteristic (RC)			0.214**		0.17**		0.18**	0.16*

Entrepreneurial Management (EM)				0.188**		0.16**	0.16**	0.15*
R^2	0.071	0.097	0.115	0.109	0.124	0.124	0.143	0.147

* $P < .10$. ** $P < .05$, *** $P < .01$, **** $P < .001$.

Table 9: Interaction Effect on Performance under Environmental Dynamism as Control Variable: Environmental Management as Moderating Variable

<i>Dependent Variable is Financial Performance</i>		Model 1	Model 2	Model 3	Model 4
<i>Step 1: Control Variables:</i>					
Number of Employees		0.161*	0.149	0.15*	0.134
Business Age		0.211	0.239*	.213	0.202
Environmental Dynamism (ED)		-0.046	-0.069	-.080	-0.092
<i>Step 2: Independent Variables:</i>					
Innovative Characteristic (IC)			0.423*		0.456
Risk-Taking Characteristic (RC)				.125	-0.078
<i>Step 3: Moderating Variables</i>					
Entrepreneurial Management (EM)			0.537*	.082	0.334
<i>Step 4: Interaction (Moderating) Effects</i>					
Innovative Characteristic (IC)	X				-0.101
Entrepreneurial Management (EM)			-0.082		
Risk-Taking Characteristic (RC)	X			.019	0.065
Entrepreneurial Management (EM)					
R^2		0.071	0.135	0.143	0.162

* $P < .10$. ** $P < .05$, *** $P < .01$, **** $P < .001$.

Citing from earlier entrepreneurship studies conducting hierarchical and moderated regression, Covin et al (2006) reports the range of R^2 from 0.039 to 0.23. Similarly, Wilkund & Shepherd (2004) find R^2 lowest at 0.11 with highest value at 0.35 in similar studies. In the same manner, Zhou et. al (2005) reports R^2 from a range of 0.13 to 0.44. Consistent with results in earlier research, the R^2 in this investigation ranges from 0.07 to 0.15 level. From a statistical point of view, since the survey instrument catches perception of respondents in terms of range from weakest orientation of 1 to a strongest orientation of 7, an ingredient of qualitative aspect naturally affixes with the process. That might have had an impact for low score of R^2 in this research. This study assumes the benchmark for statistical significance at 10 percent level consistent with Covin et al (2006) who report the effect of entrepreneurial orientation on sales performance to be marginally significant under $p < .10$ (adopted for measuring validity of results).

Hypothesis Testing: A total of eight hypotheses were developed after employing regression in direct and interaction effect (in both scenarios using environmental dynamism as control variable as well as moderating variable). Table 9 provides results of hypotheses testing based on summary of direct and moderating regression from Table 10 and Table 11.

Table 10: Summary of Hypotheses Testing

	Direct Effect	Interaction Effect
ED as Moderating Variable	HI, H2, H3 – Accepted	H5 - Rejected
	H4 – Rejected	H6, H7, H8 – Rejected
ED as Control Variable	HI, H2, H3 – Accepted	H5 – Rejected
		H7 – Rejected

Table 11: Summary of Direct Effects

	Variable Included	Cumulative R-squared	Unstandardized Regression Coefficients	t-value	F-ratio for Individual Variables	Df
ED as Moderator	IC	0.090	0.150*	1.764	4.464	136
	RC	0.106	0.191**	2.366	5.350	136
	EM	0.108	0.190**	2.443	5.486	136
ED as Control Variable	ED	0.071	-0.046	-	0.579	136
	IC	0.097	0.171**	1.953	3.610	136
	RC	0.115	0.214***	2.582	4.377	136
	EM	0.109	0.188**	2.411	4.147	136

* $P < .10$. ** $P < .05$, *** $P < .01$, **** $P < .001$

Table 12: Summary of Interaction Effects

	Variable Included	Cumulative R-squared	Unstandardized Regression Coefficients	t-value	F-ratio for Individual Variables	Df
ED as Moderator				-		
	IC X EM	0.13	-0.08	1.274	4.018	134
	IC X ED	0.099	0.032	0.547	2.933	134
	RC X EM	0.105	0.021	0.388	4.251	134
	RC X ED	0.116	0.025	0.461	3.524	134
ED as Control Variable				-		
	IC X EM	0.135	-0.082	1.299	3.470	133
	RC X EM	0.143	0.019	0.344	3.713	133

* $P < .10$. ** $P < .05$, *** $P < .01$, **** $P < .001$.

Hypotheses H1, H2, H3: The results in Table 5 and Table 7 show strong direct effects of innovative characteristics, risk-taking characteristics, and entrepreneurial management with firm's financial performance. This result was evident from both approaches considering environmental dynamism as a moderating and as control variable.

Hypothesis H4: Environmental dynamism as depicted in Table 5 could not show a significant statistical evidence of direct link with firm's financial performance.

Hypothesis H5: According to Tables 6 and Table 8, no moderating impact of entrepreneurial management was observed between innovative characteristics and its link with financial performance. This result appeared common in both approaches of treating environmental dynamism used as a moderating and control variable.

Hypotheses H7: There was no moderating impact of entrepreneurial management between risk-taking characteristics and firm's financial performance as evident in Tables 6 and Table 8 respectively.

Hypotheses H6 and H8: Similarly, no moderating impact of environmental dynamism was observed between the link of innovative characteristics with firm's financial performance and between the link of risk-taking characteristic and firm's financial performance respectively, as evident in Table 6.

Discussion: Innovation Characteristics (IC) - In the direct effect, IC displayed a significant impact on firm's financial performance with $\beta = 0.15$, $p < 0.10$ and $R^2 = 0.09$. Under control conditions of entrepreneurial dynamism (ED), the effect of IC on firm's financial performance was somewhat greater and more significant with $\beta = 0.17$, $p < 0.05$ with $R^2 = 0.097$. This suggests after the impact of ED, as a control variable, on financial performance was partialled out, a strong and pure association between IC and firm's performance emerged. However, using moderating variables of ED and EM, there was no significant interaction observed either between IC and EM or IC and ED to impact the dependent variable. In the same way, under control conditions of ED, the interaction of IC with EM was not noted to have any significant impact.

Risk-Taking Characteristic (RC) - Looking under a direct effect, RC displayed a strong association with firm's financial performance at $\beta = 0.191$, $p < 0.05$ with $R^2 = 0.10$. Under ED as control variable, RC displayed more valid association with firm's financial performance with $\beta = 0.21$, $p < 0.01$, contributing to $R^2 = 0.115$. This reveals an effect of ED on the dependent variable, the partialing-out of which leads a better effect of RC on firm's financial performance. Results were opposite under moderating variables of ED and EM, where no significant interaction was observed either between RC and EM or RC and ED to effect the dependent variable. Similarly, under control conditions of ED, the interaction of RC with EM was not observed significantly enough.

Entrepreneurial Management (EM) - In direct effect model, EM displayed a strong independent association with firm's financial performance at $\beta = 0.19$, $p < 0.05$ and $R^2 = 0.108$. Under the control conditions of ED, the impact of EM on dependent variable showed almost similar effect with $\beta = 0.188$, $p < 0.05$ and $R^2 = 0.109$. As discussed above, the moderating effect of EM did not report significant interaction with either IC or RC under both conditions of with and without ED as control variable.

Interestingly, running the full regression model, under both with and without control conditions of ED, the impact of both RC and EM respectively came out to be strong with RC $\beta = 0.16$, $p < 0.10$ and EM $\beta = 0.15$, $p < 0.10$ at $R^2 = 0.147$ in both cases. This rendered the impact of IC on performance to be completely insignificant. It further implies that RC and EM in combination completely dominated the impact of IC on firm performance.

Entrepreneurial Dynamism (ED) - In case of ED, significant results were not observed in direct or moderating effect with either of the two EO dimensions -- IC and RC.

5. Conclusion and Recommendations

This study reveals a direct, individual and positive impact of two Entrepreneurial Orientation (EO) dimensions including innovative (IC) and risk-taking (RC) characteristics on firm's financial performance. The same positive association was confirmed between Entrepreneurial Management (EM) and performance. However, Environmental Dynamism (ED) could not prove itself as a valid predictor to financial performance. Moreover, the research did not prove moderating role of any variable between the predictor-criterion associations. Both ED and EM could not display any moderating influence to the association between innovative or risk-taking characteristics and firm performance. As far as the variable of innovative characteristics is concerned, it shows inconsistent results in combination with other predictors. For example, innovative characteristics and EM exhibited a strong, direct impact on performance during the interaction effects. On the other hand, innovative dimension turned totally insignificant in the presence of risk-taking and EM during direct effect models and the full-regression model. In sum, innovative characteristics showed a duality of effect, as both strong and weak predictor to performance when analyzed in the same context and hence reflected instability. This implies risk-taking and EM to be stronger, more consistent and stable predictors to firm's financial performance compared with the innovative characteristics dimension.

This study was conducted under two scenarios: with and without ED as a control variable. It sensitizes us to look at differing results in both control conditions. For example, adding ED as a control variable, the direct

positive impact of innovative, risk-taking and EM on firm's financial performance proved slightly stronger than the case of excluding ED as control variable. This indicates ED to have somewhat influence on firm's financial performance, partialing out of which showed slightly better results to our analytical framework.

For managers, the contextual peculiarity of this study implies that when employing entrepreneurial management approaches, managers need to put a greater focus on risk-taking as compared to innovativeness for effective business practices.

Research Implications, Benefits, and Limitations: This study has practical and academic implications for entrepreneurship, especially under the control and moderating conditions as empirically tested in the research. It also sheds light on how varying factors interact together for a contributing effect towards financial performance. For scholarly research, we need to further elaborate the construct of entrepreneurial orientation in light of other internal and external organizational variables. Similarly, fresh insights on the role of entrepreneurial management and its moderating and synergistic effect on performance may uncover new avenues for research. This shall greatly help to explore dynamics of complementary relationship between EO, EM and ED for value creation to equally benefit the community of researchers and practitioners. This research was restricted to considering entrepreneurs from two metropolitan cities only with a sample size of 140 respondents that may pose limitations in its qualitative explanation.

Future Direction: Looking at future, this research topic needs to take a comprehensive approach to incorporate in detail all dimensions of entrepreneurial orientation, entrepreneurial management, and environmental dynamism, and to study their link with other determinants of firm performance including return on investment and operational metrics.

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