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Entrepreneurial Orientation and Performance Relations of Malaysian Bumiputera SMEs: The Impact of Some Perceived Environmental Factors

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Abstract

This study aims to verify direct relationship between entrepreneurial orientation (EO) and performance and the interaction of the perceived environment as third variable on EO-performance relation. The study was conducted on 210 firms among Bumiputera small and medium enterprises (BSMEs) in three states of northern Peninsular Malaysia, namely Penang, Kedah and Perlis. Using factor analysis and varimax rotation, each component was loaded with three items that has value of factor loadings more than .40. Factor analysis identified four factors of EO as independent variable namely, autonomy, innovativeness, proactiveness and risk taking dimensions. Perceived environmental factors consisted of five dimensions of munificence, turbulence, competition, market dynamism, and restrictiveness identified as moderators. Three dependent variables identified as return on sales (ROS) return on assets (ROA) and return on capital (ROC) used in the study. Four control variables of sole proprietorship; partnership, private limited company and small-sized firm were dummy-coded to ascertain their influence in performance. EO dimensions are multidimensional where each of the four dimensions is a separate component. Each of the components consists of three items. Hypothesis testing utilized four steps hierarchical multiple regression analysis. Four steps model shown in F-value and positive beta coefficient shows the statistical significance of direct relation and interaction effect. In the first step of the analysis, two

control variables directly affected ROS. The second step of the analysis found direct relation of three EO dimensions related to higher performance. In the third step, all perceived environmental factors found directly related with performance. The fourth step detected interaction effect where significant model and beta coefficients further tested with post-hoc probing by curve analysis on 2x2 graphs. Perceived environmental factors moderated the relationship between EO and performance.

Keywords: Entrepreneurial orientation, Performance, Small and medium enterprises

1. Introduction

Small and medium-sized enterprises (SMEs) play a significant role in the business system of both developed and developing economics (United Nations, 1993). In Malaysia, Bumiputera's SMEs were the sector represented more than 50% of the population. Bumiputera were sons of the soil of Malaysia constituted the major population among other races such as Chinese, Indian and others. Bumiputera continually fail to secure larger share for them in Malaysian economy. Since the inception of the New Economic Policy (NEP) in 1970, they manage to share less than 20% of the economy even until 2005. In the recent five-year economic plans to enhance Bumiputera SMEs' performance in Malaysia (2005), 35% of fund for Bumiputera SMEs business development allocated between year 2001-2005 showed unexpected level of performance in most sectors of the economy (Economic Report, 2005). Hitam (2005) noted that studies in entrepreneurship development emphasizing in entrepreneurial strategy should help to overcome business performance among Bumiputera SMEs. Unfortunately, studies in Bumiputera SMEs entrepreneurship development were very limited and most of entrepreneurship studies in Malaysia explored basic characteristics and personality of the Bumiputera SMEs' entrepreneurs (Mohamed, 1990; Hashim, 2000). Among entrepreneurship development studies is the entrepreneurial strategy among Bumiputera SMEs' firms was at the basic stage (Hashim, 2000, 2002). Therefore, more in depth studies emphasizing entrepreneurship development should help in enhancing Bumiputera SMEs' performance. This study explored Bumiputera SMEs entrepreneurial orientation (EO) as one of the entrepreneurship strategy to enhance the performance (Hitt, Ireland & Hoskisson, 2003; Miller, 1983; Wheelen & Hunger, 2002). The dimensions of EO in this study was the firm-level construct adopted from Khandwalla, (1977), Miller and Friesen (1982), Miller (1983), Covin and Slevin (1989), Stevenson and Jarillo (1990), Covin and Covin, (1990), Naman and Slevin (1993), Lumpkin and Dess (1996), and Miles, Covin and Heeley, (2000).

The Bumiputera SMEs model of EO and performance is incomplete without environmental contingencies affecting the relationship (Lawrence & Lorsch, 1971). The study explored the impact of perceived environmental munificence, dynamism and hostility in the relationship (Covin & Slevin, 1991) where these contingent variables found to be influential moderators (Covin & Slevin, 1991). Past studies proved inconsistent results in the relationship (Covin & Slevin, 1989; Miles, Covin & Heeley, 2000; Miller, 1983; Miller & Friesen, 1982, Covin & Covin, 1990; Dess, Lumpkin & Covin, 1997; Kreiser et al., 2002; Lumpkin & Dess, 2001). Reasons for the failure among Bumiputera SMEs were firstly, due to weaknesses in their strategic framework to harmonize firm's entrepreneurship strategy and environment in determining the performance (Hashim, 2000, 2002), and due to limited knowledge and ineffective implementation of the entrepreneurial strategies at appropriate level of firm development (Abdullah, 1997; Chee, 1986; Hashim, 2000, 2002; Shari & Endut, 1989).

This study investigated how each EO dimension of Bumiputera SMEs owners and managers related to the performance and how perceived environmental munificence, dynamism and hostility affect the relationship. Five dimensions of EO, 3 perceived environmental and objective performances construct operationalised in the study.

Previous research in the area of entrepreneurship found that Bumiputera SMEs' performance provides great and general importance to managers as well as the policy maker and society. There is lack of knowledge on which entrepreneurial factors influence Bumiputera SMEs performance and how they influence the performance. This leads us to specific research questions as follows:

1) How do each Bumiputera SMEs EO dimension related to performance?

2) How does perceived environmental munificence, dynamism and hostility affect the relationship between each of Bumiputera SMEs EO dimension and performance?

2. Literature Review

2.1 Main Effect of EO on Performance

Studies in EO began in the early eighties, and researchers continually found its significant effect on firm performance (Covin & Slevin, 1991; Dess, Lumpkin & Covin, 1997; Lumpkin & Dess, 1996; Zahra & Covin, 1995). Furthermore, argument in EO dimensions posed some debates among researchers. Some studies treated EO dimension as unidimensional, however other studies proposed each EO dimension is multidimensional (Kreiser, Marino & Weaver, 2002; Lumpkin & Dess, 1996, 2001). Three original dimensions of EO measured in level of innovativeness, proactiveness, and risk taking proposed by Miller (1983) recently added with autonomy and competitive aggressiveness

in Lumpkin and Dess (1996).

Each EO dimension affected firm performance differently (Kreiser, Marino, & Weaver, 2002a; Lumpkin & Dess, 1996, 2001). High innovativeness shows positive relationship with sales growth, while proactiveness is positively related to sales level, sales growth, and gross profit (Kreiser et al., 2002b). On the other hand, risk-taking produces inverted "U-shaped" curvilinear relationship with sales level and sales growth (Begley & Boyd, 1987; Kreiser et al., 2002; Miller & Friesen, 1982), where risk taking showed positive effect on performance measure to a certain level and beyond that level the increase in risk taking started to show negative effect (Begley & Boyd, 1987). In other studies, proactiveness and competitive aggressiveness are differentially related to performance in different circumstances (Kreiser et al., 2002; Lumpkin & Dess, 1997, 2001). Innovative and proactive action were found not equally critical in determining firms' success (Kreiser et al., 2002) where innovative behaviors were critical in pursuing coherent technology strategy (Zahra, 1996) on the other hand, proactiveness was more important for first-mover firms in gaining significant advantage over competitors (Lieberman & Montgomery, 1988) and Sim and Teoh (1997) claimed proactiveness as main determinant among Malaysian firms.

Entrepreneurial firms may exhibit all or some of the entrepreneurial orientation's dimensions but they may differ in strength and direction of relationship (Lumpkin & Dess, 2001). Firms that exhibit high innovativeness and proactiveness represent entrepreneurial firms (Miller, 1983; Miller & Friesen, 1982; Khandwalla, 1977). However, entrepreneurial firms' propensity to take risk is between low to moderate level (Begley & Boyd, 1987; McClelland, 1961) and Kreiser et al. (2002) proved that risk taking relates to performance in curvilinear or u-shaped manner, hence:

H1: Entrepreneurial orientation is significantly related to performance

H1a: Autonomy is positively related to performance

H1b: Innovativeness is positively related to performance

H1c: Proactiveness is positively related to performance

H1d: Risk taking dimension shows curvilinear relationship with performance

H1e: Competitive aggressiveness is positively related to performance

2.2 Impact of Perceived Environmental Factors on Innovativeness-Performance Relation

Perceived environmental factors tend to encourage innovativeness. Zahra (1996) found that the favorable perceived environment acted to encourage research and development spending within firms. However, only sales growth explained innovativeness in perceived environment whereas, sales level was not statistically significant and gross profit was negatively related (Kreiser et al., 2002). Lumpkin (1996) claimed that availability of resources allows sufficient expenses and expertise in technological development in establishing and marketing new product, hence:

H2: Firm's innovativeness will be strongly associated with high performance
when perceived environmental factors is high.

H2a: Firm's innovativeness will be strongly associated with high performance
when perceived environmental munificence factors is high.

H2b: Firm's innovativeness will be strongly associated with high performance
when perceived environmental dynamism is high.

H2c: Firm's innovativeness will be strongly associated with high performance
when perceived environmental hostility is high.

2.3 Impact of Perceived Environmental Factors on Proactiveness-Performance Relation

Perceived environmental factors support proactive behavior in both sales level and sales growth performance but not gross profit (Kreiser et al., 2002). Strategic opportunities are readily available in perceived environment where proactive firms will be able to capitalize these opportunities and create competitive advantage in the market (Lieberman & Montgomery, 1988), hence:

H3: Firm's proactiveness will be strongly associated with high performance
when perceived environmental factors is high.

H3a: Firm's proactiveness will be strongly associated with high performance
when perceived environmental munificence is high.

H3b: Firm's proactiveness will be strongly associated with high performance
when perceived environmental dynamism is high.

H3c: Firm's proactiveness will be strongly associated with high performance when perceived environmental hostility is high.

2.4 Impact of Perceived Environmental Factors on Risk Taking-Performance relation

Risk taking in perceived environmental factors showed positive relationship when Lumpkin (1996) iterated that "it is an environment that invites new entry and supports development aimed at fulfilling unmet demand." It is also likely that excessively hostile environments discouraged firm from taking unnecessary risks (Zahra & Garvis, 2000). Other argument was that even risk taking managers would be discouraged from taking large-scale risk in extremely uncertain environment (Smart & Vertinsky, 1984). A study proposed that firms operating in munificence environments were more inclined towards propensity to take risk with ready resources and favorable environment (Smart & Vertinsky, 1984), supported in Kreiser et al (2002) who found sales level and sales growth was positively explained by risk taking. However, Kreiser et al (2002) proved otherwise when gross profit was found not significant and negatively related. Risk taking in perceived environmental factors offered higher payoffs (Lumpkin, 1996) due to such hospitable environment with sufficient resources to compensate failures (Lumpkin & Dess, 2001), hence:

H4: Firm's risk taking will be strongly associated with high performance when perceived environmental factors is high.

H4a: Firm's risk taking will be strongly associated with high performance when perceived environmental munificence is high.

H4b: Firm's risk taking will be strongly associated with high performance when perceived environmental dynamism is high.

H4c: Firm's risk taking will be strongly associated with high performance when perceived environmental hostility is high.

3. Methodology

3.1 Sampling Frame

The sampling technique used in this research was proportionate random sampling due to the following reasons; firstly, to increase sample's statistical efficiency, and secondly to provide enough data for analyzing the various population (Cooper & Schindler, 2001). SMEs constitute those small and medium firms operating in the industry from various types such as manufacturing, general business such as wholesaling, retailing and restaurant and agricultural (Hashim, 2000). The capital invested was less than RM2.5 million, number of employees less than 150 persons and annual turnover less than RM25 million. The population in the study comprise of 610 firms in three states on the northern peak of Malaysian Peninsular.

3.2 Respondent

The owner or top management personnel represent the respondents who suppose to be the most knowledgeable person in providing the information. The responses will be representing firm's response. This is due to the objective of getting the organization-level measures and should help in reducing common method variance (Dess et al., 1997; Lumpkin & Dess, 2001; Podsakoff & Organ, 1986). The study used mail survey method in data collection procedure to overcome social desirability bias, this method was found good in getting financial information and personal behavior (Ones, Reiss, & Viswesvaran, 1996). The selected firms will be contacted through mail where each firm was provided with three sets of questionnaires and a stamped envelope for returned questionnaires.

3.3 Research Instrument

Entrepreneurial orientation, environmental dynamism and hostility measures were adopted from Miller and Friesen (1982), Khandwalla (1977) and Covin and Covin (1990) with a total of 18-item scale ranging from 1 (Strongly Agree) to 7 (Strongly Disagree). On the other hand, environmental munificence adopted from Schultz, Slevin and Covin (1995) four-item, seven-point scale. Demographic information of firm's size and industry type were used as control variables and dummy coded in the analysis. Other information was used to describe the respondent and firm characteristics. Performance was measured by quantitative data obtained from the actual outcome in return on sales (ROS), return on assets (ROA), and return on investment (ROI). The performance collected within 3-year period (2002 – 2004) to avoid short-term effect.

3.4 Hypothesis Testing

The hypothesis testing level of acceptance or rejection were at $p < .05$ in the equation and beta coefficient value produced by multiple hierarchical regression analysis (MHRA) (Cooper & Schindler, 2001; Hair et al., 1998). The regression analysis assumed the data were linear, homoscedastic, independence of error, normal, absence of outliers and

multicollinearity. In assumption of linearity, normality and homoscedasticity, each EO in relation to performance measure showed the point randomly distributed about the horizontal straight line in scatterplot and P-P plot. No serious deviations from those assumptions were detected. The independence of error was used in detecting autocorrelation of the residuals. The assumption was that the error term should not correlate. The Durbin Watson (DW) analysis for dependent variable in this study was 1.8 within range of 1.5 to 2.7 suggesting the data is free from serious error. In detecting and removing influential cases and outliers, standardized residuals (ZRESID) and Cook's distance (COOK D) were produced according to SPSS statistical data analysis procedure (Norusis, 1993). In the final step of MHRA, 119 samples were useable after deletion of outliers with residuals of COOK D value more than .02030. Independent and moderator were first standardized to avoid high multicollinearity according to Cohen et al (2003). The result of multi-collinearity indicated that the values of tolerance and variance inflation factor (VIF) fall within acceptable range (tolerance 0.30 to 0.93 and VIF 1.10 to 3.30). Interaction of moderators was not determined solely on beta coefficient but through post hoc probing where split sample plotted on multiple line graphs were used to ascertain the acceptance or rejection of the hypothesis (Howell, Dorfman & Kerr, 1986; Sharma et al., 1981). Interaction post-hoc probing was operationalized as suggested by Aiken and West (1991) and Cohen et al (2003) to confirm the position of curve's simple slope of each split moderators.

4. Data analysis and Findings

There were 610 questionnaires sent through mail to firms in Perlis, Kedah and Penang and 232 returned but only 210 were usable. The response rate is 38%. Eleven firms returned incomplete questionnaires and eleven firms have moved from registered addresses. The non-response bias test used independent sample t test to detect any significant different between early and late responses. The test showed negligible significant differences between the early and the late responses. The unit of analysis was firms represented by the owner and senior managers as respondent. Respondent's level of education was represented by 2.3% in primary, 37.7% secondary, 36% diploma, 18.8% first degree, 5% masters degree, and .2% PhD. Respondents' gender were 61.1% male and 38.9% female. The age profile was 1.7% below 20 years old, 38.7% between 20 to 29 years old, 30.8% between 30 to 39 years old, 21.2% between 40 to 49 years old, 6% between 50 to 60 years old and 1.7% more than 60 years old. Firm profile was described in industry categories represented by 55.9% in manufacturing, 24.2% in services, and 19.9% in mixed category. Business form was represented by 37.9 % sole proprietorship, 19.3% partnership, 40.4% private limited companies, and 2.5% limited companies. Number of employees was 88.2% of firms with less than 30 employees, 6.2% between 30 to 59 employees, 1.2% between 60 to 99 employees, 2.5% between 100 to 149 employees and 1.8% were firms with 150 and more employees. Factor analysis and reliability were used to ascertain the goodness of measures of firm's entrepreneurial orientation dimensions, perceived environmental munificence and performance in the study. Principal component analysis with promax rotation and Kaiser Normalization is used. Anti-image measure of sampling adequacy (MSA) and communalities among all item selected are more than .50 with eigenvalue more than 1 and the total variance explained the loaded factors more than 50%. Factor loading in component is not less than .40 for 200 sample or cases (Hair et al., 1998).

As shown in Table 1, initially there were 18 items used to measure three EO dimensions, where 3 items were recoded. Twelve items were retained with MSA anti-image value above .50 and 6 items were exclude to increased the Kaiser-Meyer-Olkin measures of sampling adequacy (KMO) to .65 with chi-square for Bartlett's test of sphericity of 249.71 at 36 degree of freedom significant at .00. Three factors were extracted with eigenvalue of more than 1 and explained by 56.5% of the variance. Summated significant factor loadings for each dimension showed reliability of more than .50.

<<Insert Table 1>>

There were 22 items used to measure the dimensions of perceived environment. Twenty-one items were retained after one of them failed to achieve more than .50 anti-images MSA. These 9 items were loaded in two factors of human capital munificence, and information technology munificence. The KMO was .80 with chi-square of Bartlett's test of sphericity 678.89, degree of freedom 120 significant at .00. The variance was explained by 64.6% with extracted factors eigenvalue of more than 1. All three environmental condition dimensions showed reliability of more than .80 (Refer to Table 2).

<<Insert Table 2>>

Firm performance was represented by objective performance computed into return on sales (ROS), return on assets (ROA), and return on investment (ROI). These indexes were derived from calculation as follows: ROS = Net profit/Total sales; ROA = Net Profit/Total Assets; and ROI = Net Profit/Total Capital Invested (Higgins, 1989) (Refer to Table 3).

<<Insert Table 3>>

The correlation analysis elaborated mean, standard deviation, reliabilities and relationship between variables in the

study. Pearson correlation was used to examine the correlation coefficient among the variables. The lowest significant level shown was at $p < .05$. Proactiveness in entrepreneurial orientation dimension showed significant relation to overall firm performance at $p < .05$. Environmental munificence showed significant relation to performance and entrepreneurial orientation measures at $p < .01$ (Refer to Table 4).

<<Insert Table 4>>

Four-step analysis was observed in MHRA, first step seen significant equation of control variables model in explaining performance at 5% of the variance showed by adjusted R^2. Second step detected significant equation of main effect EO variables model in determining performance at 10% of the variance in adjusted R^2. Third step scanned significant moderator's model at 19% of the variance showed in adjusted R^2. And fourth step determined significant effect of interactions of moderators on each EO-performance relations at 52% of the variance showed in adjusted R^2 (Refer to Table 5).

Service and manufacturing industry showed significant beta coefficient at $p < .01$ in model 1, the main effect of innovativeness and risk taking showed significant beta coefficient at $p < .01$, and .05 respectively, both moderators showed beta coefficient significant at $p < .01$, and interaction effect of both moderators on proactiveness-performance relation showed significant beta coefficient at $p < .0$. Curvilinear effect of risk taking-performance relation was ascertained when curve estimation analysis showed highest R^2 explained by 16% of the variance in cubic equation (Refer to Table 5).

<<Insert Table 5>>

To conduct post-hoc analysis on significant interaction terms of IT munificence and human capital on relationship proactiveness and objective performance. The impact of human capital and information technology munificence on proactiveness-performance relationship was positive, the graph in figure 1 and 2 proved that in high human capital and IT munificence environment, proactiveness was more related to higher performance (Refer to Figure 1 and 2) .

<<Insert Figure 1>>

<<Insert Figure 2>>

5. Discussion and Conclusion

This study found that autonomy and innovativeness were related significantly and positively with performance. Moderating impact showed significant interaction effect of human capital and information technology munificence on proactiveness-performance relationship. The finding strongly supported the resource-based view when the main effect of EO and moderating effect of environment showed significant change in the relationship. Innovativeness and risk taking direct impact on performance supported studies in EO-performance relationship (e.g., Covin & Slevin, 1989; Begley & Boyd, 1987; Kresier et al., 2002; Lumpkin & Dess, 1996). Innovativeness was positively related to performance strengthened previous studies that firms employing innovative behavior ensure higher firm performance. Similarly, risk taking that showed negative relation to performance was actually possessing "U"-shaped curvilinear relationship suggesting moderate level risk takers were outperformed by firms risk taking level. Moderating impact of human capital and information technology munificence on EO-performance relationship were crucial for proactive firm in achieving superior performance. The finding supported Kreiser et al. (2002) and redefined Brown and Kirchoff (1997) and De Koning and Brown (2001) that environmental munificence is conducive to EO or part of EO in predicting higher performance. The study reconfirms that independent effect of each EO dimension on performance contributes more in-depth knowledge in the differential relationship of innovativeness, proactiveness and risk taking with objective performance. Thus, antecedents and mediator variables of each EO dimension is worth to be investigated further. Moderating effect is also crucial in neutralizing or enhancing independent effect of each EO dimension in predicting performance. Thus, more possible internal and external environmental factors shall be included into entrepreneurship studies. Finally, each EO dimension contributes independently in explaining the performance, innovativeness positively related to performance but risk taking showed curvilinear relationship. Environmental munificence promotes proactiveness as the best predictor of performance in Malaysian SMEs.

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Table 1. Summary of Factor Analysis and Reliability of Firm EO

Items	Factor loading			
1. Autonomous Behavior	1	2	3	4
a. Our firm involves workers in implementing innovation even by ignoring procedures	**.74**	-.12	.14	.08
b. Our firm allows bypassing personnel procedures to get workers committed in implementing new ideas	**.72**	-.07	.16	.04
c. Our firm encourages worker to make decision in innovation.	**.61**	.23	-.13	.19
2. Innovativeness				
a. Our firm emphasizes on utilizing new technology	-.01	**.71**	.08	.06
b. Our firm encourages new idea from any workers regardless of his or her status in the firm	-.01	**.70**	-.00	.14
c. Our firm emphasizes on research and development	.05	**.67**	.38	-.08
3. Proactiveness				
a. We initiate actions to which competitors then respond in using new technology	-.04	.15	**.75**	.28
b. We are the first to introduce new product or service	.19	.02	**.74**	.08
c. We always respond to unrelated opportunities	.38	.25	**.43**	-.15
4. Risk Taking				
a. We practice "wait and see" position to minimize risk ®	.18	-.09	.11	**.78**
b. Our firm explore bravely and open minded to achieve goal	.37	.38	-.03	**.61**
c. We always invest in unexplored technologies	-.15	.20	.41	**.59**
Eigenvalue	2.91	1.63	1.17	1.08
Percentage of Variance	24.25	13.56	9.71	9.03
Cumulative % of Variance	24.25	37.81	47.52	56.54

Table 2. Summary of Factor Analysis of Perceived Environment

Items	Factor Loading					
1. Environ. Munificence (Human Capital)	1	2	3	4	5	6
a. Expertise in core business	**.76**	.08	.07	.23	-.06	.18
b. Business opportunities	**.72**	.14	-.01	.09	.11	.00
c. Local skilled workers	**.69**	.20	.05	.09	.07	.01
d. Material supplies	**.68**	.21	.08	-.23	.16	.07
e. Managerial talent	**.65**	.19	.21	.19	.02	.08
f. In-house training	**.62**	-.15	.02	.11	.02	.42
g. Capital availability	**.56**	.25	-.01	.18	-.05	-.17
2. Environ. Hostility (Competitiveness)						
a. Competition in product quality	.18	**.82**	.04	-.02	.09	.10
b. Competition in product uniqueness	.26	**.80**	-.05	-.04	.12	.11
c. Tough price competition	.07	**.68**	.11	.13	-.05	.18
d. Dwindling market for product/service	.26	**.62**	.16	.13	.24	-.02
3. Environ. Dynamism (Turbulence)						
a. Demand was unpredictable	-.01	.05	**.93**	.04	.00	.05
b. Customers' taste was unpredictable	.09	.02	**.89**	-.06	.08	-.03
c. Actions of competitors was unpredictable	.21	.17	**.62**	-.04	.06	.32
4. Environ. Munificence (Information Technology (IT)						
a. Availability of IT expertise	.18	-.03	-.05	**.89**	.08	.12
b. Availability of IT equipments	.27	.21	.01	**.85**	.07	-.05
5. Environ. Hostility (Restrictiveness)						
a. Scarce supply of material	-.04	.12	.14	-.05	**.79**	.15
b. Scarce supply of labor	.18	.18	.04	-.03	**.75**	.11
c. Government interference	.03	-.02	-.05	.23	**.61**	-.11
6. Environ. Dynamism (Marketing)						
a. The rate of obsolescence is very high	.01	.18	.06	.13	.14	**.79**
b. Our firm must change its marketing practices frequently	.15	.16	.12	-.08	-.02	**.79**
Eigenvalue	5.33	2.26	1.79	1.53	1.37	1.28
Percentage of Variance	25.40	10.75	8.52	7.31	6.51	6.11
Cumulative % of Variance	25.40	36.15	44.67	51.97	58.49	64.60

Table 3. Factor Analysis of Firm Performance

Items		Component matrix
Objective Performance		
1. Return on sales (ROS)		**.89**
2. Return on investment (ROI)		**.86**
3. Return on assets (ROA)		**.60**
Eigenvalue		1.89
Percentage of Variance		63.08
Kaiser-Meyer-Olkin Measure of Sampling adequacy		.57
Bartlett's Test of Sphericity	Approx. Chi-Square	157.0
	Df	3
	Sig.	.000

Table 4. Intercorrelation Among Variables in The Study

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Control															
1. Proprietorship[a]															
2. Partnership[b]	-.37**														
3. Private Limited Co.[c]	-.65**	-.37**													
4. Size (Small)[d]	.19**	.10	-.23**												
Dependent															
5. Return on Sales	.05	-.09	.04	.01											
6. Return on Assets	-.10	.07	.02	-.02	.19**										
7. Return on Capital	.14*	-.10	-.13	-.13	.22**	.25**									
Independent (EO)															
8. Autonomy	.13	-.14*	-.02	-.01	-.13	-.02	.05								
9. Innovativeness	.09	-.09	-.01	-.01	-.11	.02	.01	.07							
10. Proactiveness	.07	-.01	-.03	-.01	-.04	-.05	.05	.27**	.33**						
11. Risk Taking	.11	-.09	-.02	.00	-.01	.12	.06	.27**	.27**	.36**					
Moderators (PE)		-.03	.11	.06	.06	.11	.00	.04	.01		-.04				
13. Market Dyna	.09	-.01	-.06	.05	-.06	.08	-.06	.08	.21**	.25**	.30**	-.38**			
14. Competition	.10	.00	-.07	-.10	-.08	.08	.14*	.19**	.21**	.21**	.24**	-.11	.31**		
15. Restrictivene	-.12	-.04	.12	-.14*	.06	.03	.06	.03	.01	.12	.08	.07	.17*	.27**	
16. Munificence	.18**	-.08	-.10	-.06	.04	-.10	-.00	.21**	.27**	.21**	.33**	-.07	.20**	.47**	.19**

[a]dummy code (1 = proprietorship, 0 = partnership, 0 = private limited co., 0 = public limited co.). [b] dummy code (1 = partnership, 0 = proprietorship, 0 = private limited co., 0 = public limited co.). [c] dummy code (1 = private limited co., 0 = proprietorship, 0 = partnership. 0 = public limited co.). [d]dummy code (1 = 50 employees and less, 0 = more than 50 employees). EO = entrepreneurial orientation. PE = perceived environment. *p < .05. **p < .01.

Table 5. Hierarchical Multiple Regression for Objective Performance as Dependent Variable

Variables	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Control variables				
Service	-0.37**	-0.47**	-0.48**	-0.58**
Manufacturing	-0.36**	-0.43**	-0.53**	-0.65**
Firm Size	-0.11	-0.14	-0.16	-0.19**
Independent variables (Main effect)				
Autonomy		0.03	-0.04	-0.22*
Innovativeness		0.23**	0.29**	0.46**
Proactiveness		0.10	0.12	0.08
Risk Taking		-0.21*	-0.10	0.03
Moderator variables				
Turbulence			-0.06	-0.01
Marketing dynamism			0.02	0.05
Competitiveness			0.01	0.05
Restrictiveness			0.23**	0.33**
Human capital munificence			-0.12	-0.27**
Information technology munificence			-0.30**	-0.52**
Interactions				
Turbulence				
• Autonomy				0.05
• Innovativeness				-0.04
• Proactiveness				-0.08
• Risk taking				-0.24**
Marketing dynamism				
• Autonomy				-0.05
• Innovativeness				0.05
• Proactiveness				-0.31**
• Risk taking				0.42**
Competitiveness				
• Autonomy				0.26**
• Innovativeness				0.08
• Proactiveness				-0.03
• Risk taking				-0.16
Restrictiveness				
• Autonomy				-0.18
• Innovativeness				-0.17
• Proactiveness				0.70**
• Risk taking				-0.35**
Human capital munificence				
• Autonomy				-0.02
• Innovativeness				0.17
• Proactiveness				0.04
• Risk taking				-0.16
Information technology munificence				
• Autonomy				0.09
• Innovativeness				-0.22*
• Proactiveness				0.15
• Risk taking				0.19*
R^2	0.07	0.15	0.28	0.66
Adjusted R^2	0.05	0.10	0.19	0.52
Change in R^2	0.07	0.08	0.13	0.38
F-value	3.22*	2.83*	3.31**	4.26**

*p < .05. **p < .01.

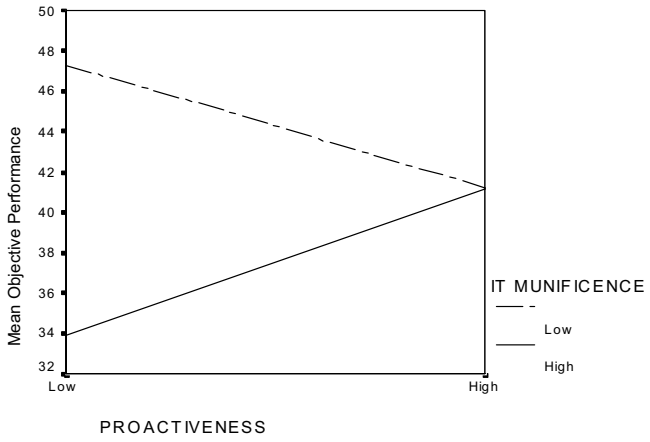

Figure 1. Interaction effect of information technology environmental munificence on firm's proactiveness and objective performance relation

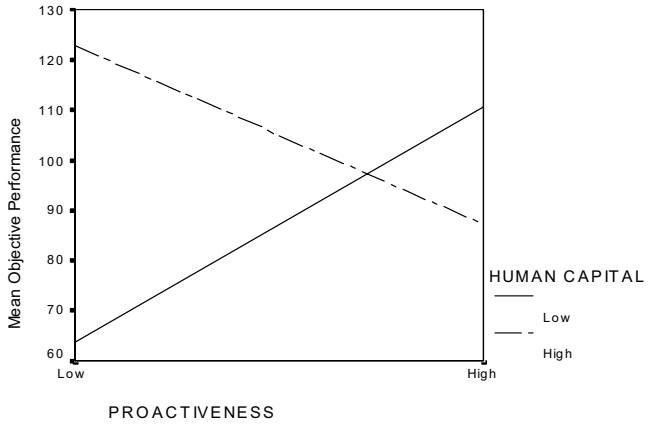

Figure 2. Interaction effect of human capital environmental munificence on firm's proactiveness and objective performance relation