The Performance Effects of Entrepreneurial Orientation: Evidence from South Korean Start-ups

Hyunjoong Yoon, Ph. D.
Visiting Researcher, Institutes of Labor Relations,
College of Business Administration,
Seoul National University
hyoon98@snu.ac.kr
1 Gwanak-ro, Gwanak-gu,
Seoul 151-916, South Korea

Abstract
"Are the performance effects of entrepreneurial orientation (EO) universalistic?" In order to answer this question, current study examined the patterns of performance effects of EO with cases of fast-growing start-ups. Specifically, current study investigated whether the patterns of overall EO effect on firm performance are fortified according to the stage of growth, and then compared the overall and individual effects of EO on firm performance. The results of 1,499 South Korean starts-ups showed the positive performance effects of overall EO were proven to be higher in early stage rather than growth stage. Although empirical results showed the positive performance effect of proactiveness, innovativeness was proven to be significant just in growth stage, and risk-taking was not significant in all stage of growth. Based on those results, theoretical implications of entrepreneurship development are discussed. Future research directions with some limitations are also discussed.

Key Words: Entrepreneurial Orientation, Innovativeness, Proactiveness, Risk-taking, Stage of Growth, South Korea

INTRODUCTION

Today's dynamic business environment demands firms to be entrepreneurial if it is to survive and grow. It is especially true for fast-growing start-ups which experience the liability of newnesss (Stinchcombe, 1968). In the research area of entrepreneurship, entrepreneurial orientation (EO) can be regarded as a crucial factor for the business success. The reason is that EO is closely related to the tendency to take advantage of business opportunities, which has a positive influence on firm performance (Wiklund, 1999).

"Are the performance effects of EO universalistic independent of the structural and embedding characteristics of organization?" Previous researches have usually focused on the late rather than early stage of growth, and thus the question whether the performance effect of EO is universalistic or contingent is not fully identified. Also previous researches have utilized an overall constructs of EO, and barely examine the individual effects of EO dimension, such as innovativeness, proactiveness, and risk-taking, and thus paid only limited attention to the individual effects of EO.

However, Wiklund & Shepherd(2005) argued that the performance effect of EO can be moderated by different contingent factors. In a similar vein, Hughes & Morgan(2007) deconstructed the effects of EO according to the stage of firm's growth, and identified the performance effects of EO seem to be contingent. Furthermore, recent review of Miller(2011) indicates that endeavors of past 30 years have some limitations, which suggests to identify the effect of configurational characteristics of organizations. Thus, current research basically examined the positive effect of EO on firm performance, but at the same time specified two more different features. First, current study examined whether the performance effects of EO can be fortified or weakened by the stage of firms' growth. Second, current study compared the positive performance effect of overall EO with three individual effects of EO on firm performance.

In doing so, current study suggests following two implications. First, current study emphasized whether the performance effects of individual EO are quite different from the overall effect of EO. If there are no significant differences in between overall and individual performance effects of EO, we may conclude

that there is universalistic performance effect of EO. Second, current study highlights whether there are consistent performance effects of EO. If the performance effects of EO are consistent according to the stage of growth, we may conclude that the performance effect of EO is universalistic.

RESEARCH BACKGROUND

1. The Conceptualization of EO

EO, in general, refers to top management's strategy in relation of innovativeness, proactiveness, and risk-taking (Covin & Slevin ,1989; Lumpkin & Dess, 1996; Miller, 1983). Miller(1983) initially clarifies the construct of EO and defines an "entrepreneurial firm as one that engages in product marketing innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch". According to Miller(1983), firms can be "entrepreneurial" if they are innovative, proactive, and risk-taking, no matter how the structural feature of the organization (Lee, Lee, & Pennings, 2001).

After Miller (1983), Covin & Slevin(1989) adopted EO as a uni-dimensional construct, and insisted that these three dimensions can be combined into a single scale. From then on, EO was regarded and conceptualized as a uni-dimensional composite construct consisting of innovativeness, proactiveness, and risk taking (Covin & Slevin, 1989; Miller, 1983). First, innovativeness reflects the propensity to engage in new ideas and creative processes that may result in new products or services (Miller, 1983). Second, proactiveness is the extent to which a firm is a leader associated with aggressive posturing relative to competitors (Wiklund, 1999). Finally, risk-taking refers to the extent to which a firm is willing to make large and risky resource commitments (Covin & Slevin, 1991).

Likewise, most of researchers have conceptualized EO as a reflective construct, implying that the dimensions of EO may covary. For example, in developing EO measure, Covin & Slevin(1991) theorized three dimensions of EO works together as uni-dimensional "strategic posture". It is assumed that a change in EO results in a change of innovativeness, proactiveness, and risk-taking concurrently (Knight, 1997; Kreiser, Marino, & Weaver, 2002).

However, some researchers have argued that EO should be a multi-dimensional construct and that the dimensions of EO can vary independently (Kreiser et al., 2002; Lumpkin & Dess, 1996). For example, Lumpkin & Dess(1996) claimed that dimensions of EO can independently vary of each other. Moreover, Kreiser et al.(2002) recently suggested options to select the measurement depending on research objectives whether accuracy is more important to simplicity, and whether a differential relationship is expected between sub-dimension and key variables.

Thus, there is still some disagreement among researchers in theorizing EO whether it is a multi-dimensional construct (Knight, 1997; Kreiser et al., 2002; Lumpkin & Dess, 1996). These approaches can be useful, but more researches are needed to be generalized. To address these conceptualizations issues, it is necessary to review the performance effects of EO that currently exist in the literature.

2. The Performance Effects of EO

Theoretically, it is expected to be positive relationship between EO and firm performance. Empirical evidence have suggested that there are positive performance effects of EO (Lee et al., 2001; Lumpkin & Dess, 2001; Wiklund, 1999; Wiklund & Shepherd, 2005). For example, Lee et al.(2001) examined the influence both of internal capabilities and external networks on firm performance by using data from 137 Korean technological start-up companies. EO was the main variables to consist of internal capabilities. Also Keh, Nguyen, & Ng(2007) examined the performance effect of EO with market information. With the cases of Singapore SMEs, they found that EO plays an important role in enhancing firm performance. However, some empirical research has reported with no relationship (Covin, Slevin, & Schultz, 1994), or negative relationship between EO and firm performance (Hart, 1992; Smart & Conant, 1994).

For this, Wiklund & Shepherd(2005) argued that the performance effects of EO can be considered as contingent rather than universalistic, because resource should be considered to attain the market opportunity. In a similar vein, Hughes & Morgan(2007) argued that the performance effect of EO may produce different outcomes according to organizational life-cycle. Thus, in order to identify the universalistic effects of EO, it

is needed to compare the performance effects of EO by the stage of growth.

While it is quite widely agreed that start-up dynamics produce positive performance effects of EO, there is little agreement among researchers whether the effects of EO are coincided with the growth of organizations. Especially, we do not know the procedure how EO can be developed, and thus it may be useful to understand the nature of entrepreneurship development. Therefore, current research deconstructs the dimensions of EO and investigated the performance effects of EO with the growth stage, and then compared the patterns of overall and three individual effects of EO on firm performance. These make us to understand how EO can be weakened or fortified with the growth of the firm.

METHODS

1. Data and Sample

Data used in this study was a survey conducted by the Korea Venture Research Institutes (http://kovri.re.kr). Consistent with previous research on key informants of start-ups, surveys were addressed to and completed by either the owner or general manager of the firm (Lee et al., 2001; Lumpkin & Dess, 1996; Miller, 1983).

A total of 1,499 cases were used to analyze the model. The average size of the firms was 27 employees and the average firm age was 7.8 years old. The distribution of industry of 1,499 cases as follows: Agriculture, Forestry, Fishery, Mining(5), Food & Beverage(6), Textile, Sewing, Fur(9), Paper Manufacturing(30), Print, Rubber(28), Petroleum & Chemical(99), Metal & Non-metal(52), Machine & Equipment(14), Electric Devices(12), Electronic components(9), Precision Engineering(101), Electronics Equipment(17), Machine Equipment(88), Automobile & Transportation Equipment(20), Furniture & other Manufacturing(39), Manpower, Educational Services(102), Disposal of Waste Matter(225), Constructions(91), Dealing, Retail Distribution(121), Book Publishing(314), Broadcasting & Telecommunications(88), Professional Services(29).

2. Measurements

2.1. Dependent Variable

I used sales increases as a representative feature of firm performance, which measured ratio of sales volume of 2010 to 2009 (Lee et al., 2001).

2.2. Independent Variables

The first independent variable of current study is EO. The EO of our main independent variable was measured by survey items, which composed of nine scales from Covin & Slevin(1989). Wiklund(1998) identified several studies using this instrument, which provide evidence of its validity and reliability. Table 1 describes the individual dimensions and survey items of EO used in current study.

Dimensions	Survey Items
Innovativness	**EO1:** A strong emphasis on R&D, technological leadership, and innovations
	EO2: Retain very many new lines of products or services
	EO3: Changes in product or service lines have usually been quite dramatic
Proactivess	**EO4:** A strong tendency to initiate actions that competitors respond to
	EO5: A strong tendency to be a leader, introducing new products, service, or technology first
	EO6: A strong tendency to adopt a competitive ‘‘undo-the-competitors’’ posture
Risk-taking	**EO7:** A strong proclivity for high-risk projects (with chances of very high returns)
	EO8: Bold, wide-ranging acts are necessary to achieve the firm’s objectives (Owing to the nature of the environment)
	EO9: Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities

Table 1. Dimensions and Survey Items of EO
Source: Covin & Slevin(1989)

The second independent variable is the stage of growth. 'Early stage' refers to "the stage that establishes a firm, and develops initial product and services." 'Growth stage' refers to "the stage that generates sales volume and profit after development of initial product and services". The variable of stage of growth is measured by dummy variables with "1" for the growth stage, and "0" otherwise. Hughes & Morgan(2007) used similar measurement.

2.3. Control variables

Several control variables were included to ensure the validity of our model. First, firm size (measured as number of employees) was included because past research has indicated a relationship between firm size and strategic behaviors in entrepreneurial organizations (Lee et al., 2001). Second, firm age was controlled with logged value to reflect the liability of newness of start-ups (Stinchcombe, 1968). Finally, High-tech industry was also included to control the technological opportunities.

3. Analytic Procedure

To test the validity of our framework, I conducted factor analysis on the proactiveness, innovativeness and risk-taking items. Current study examines the main effects of EO on firm performance, and compares the effects with a contingency model by the growth stage. In order to test the contingent model, I used ordinary least square regression to analyze the data. I used hierarchical regression analysis to examine the relationship between EO and firm performance and the proposed moderating effects of the stage of growth.

RESULTS

1. Validity and Reliability of EO

The reliability of EO scale achieved high internal consistency (Cronbach's α =.82) (Nunally, 1978), and achieved convergent validity (Neter, Kunter, Nachsheim, & Wasserman, 1996). The fit indices were: Chi-square=129.7, df=18, RMSEA=0.064, NFI=0.969, CFI=0.973. According to Gefen, Straub, & Boudreau(2000), the root-mean-square error of approximation (RMSEA), which is the most sensitive index to models with mis-specified factor loadings, is indicative of strong model fit when the value is lower than 0.05. The Normed fit index (NFI), and comparative fit index (CFI) were all higher than 0.90, suggesting good fit for this measurement model. The individual validity and reliability scores of *Innovativeness* are 0.52(AVE) and 0.76(CR). The scores of *Proactivenss* are 0.61 (AVE) and 0.82 (CR). The scores of *Risk-taking* are 0.48 (AVE) and 0.74 (CR).

2. Descriptive Statistics

Table 2 shows the descriptive statistics and correlations among all variables. Of particular interest are the correlations of EO and firm performance. *Overall EO* are highly correlated with *Innovativeness* (r=.83), *proactiveness* (r=.85), and *risk-taking* (r=.76). The correlation between *Innovativeness* and *Proactiveness* was also highly correlated (r=.62), the correlation between *Proactiveness* and *Risk-taking* was also highly correlated (r=.42), and finally the correlation between *Innovativeness* and *Risk-taking* was also highly correlated (r=.43).

Sales Increases are highly correlated with *Overall EO* (r=.06), but highly correlated with *Innovativeness* (r=.07) among individual EO dimension, *Sales Increase* was highly correlated with *firm age* (r=-.15), *firm size* (r=-.07), and *Growth Stage* (r=-.18) but those were negatively correlated.

Variables	Mean	S.D.	1	2	3	4	5	6	7	8
1. Sales Increase	0.39	1.13								
2. Innovativeness	3.61	0.65	.03							
3. Proactiveness	3.59	0.72	.07 **	.62 **						
4. Risk-taking	3.40	0.70	.04	.42 **	.43 **					
5. Overall EO	3.53	0.56	.06 *	.83 **	.85 **	.76 **				
6. Growth stage	0.93	0.26	-.18 **	.11 **	.02	-.05	.03			
7. LNAGE[b]	1.78	0.77	-.15 **	.04	-.01	-.07 **	-.02	.36 **		
8. LNSIZE[b]	2.71	1.01	-.07 **	.10 **	.06 *	-.04	.05	.26 **	.45 **	
9. HITECH	0.49	0.50	-.03	.08 **	-.01	.04	.04	.03	-.02	.03

Table 2. Descriptive Statistics and Correlations [ac]

Note: a. N = 1,499. b. LNAGE and LNSIZE take on the log value. c. * p<.05, ** p<.01

3. Regression Results

As shown in Table 3, there was a significant positive relationship between *Overall EO* and firm performance (*b*=0.11, p<.05). In Model 1, we regressed *Overall EO* onto firm performance. The positive performance effect of *Overall EO* on firm performance was significant. Also shown in Model 3, there is a significant moderating effects of *Growth Stage* on the relationship between *Overall EO* and firm performance (*b*=-0.46, p<.05).

Table 3. Hierarchical Regression Results [acd]

Variables	Model 1	Model 2	Model 3
Intercept	0.44 *	1.22 ***	-0.67
	(0.20)	(0.12)	(0.65)
Overall EO	0.11 *		0.55 ***
	(0.05)		(0.18)
Growth Stage		-0.60 ***	0.99
		(0.12)	(0.68)
Overall EO			-0.46 *
x Growth Stage			(0.19)
LNAGE[b]	-0.22 ***	-0.16 ***	-0.16 ***
	(0.04)	(0.04)	(0.04)
LNSIZE[b]	-0.01	0.02	0.02
	(0.03)	(0.03)	(0.03)
HITECH	-0.08	-0.07	-0.07
	(0.06)	(0.06)	(0.06)
F value	10.36 ***	15.75 ***	12.47 ***
R^2	0.03	0.04	0.05
Adj R^2	(0.02)	(0.04)	(0.04)

Note: a. N = 1,499. b. LNAGE and LNSIZE take on the log value.
c. standard errors are in parenthesis. d.* p<.05,** p<.01,*** p<.001

As shown in Table 4, the *Overall EO* effects on firm performance was constantly significant in early stage (*b*=.60, p<.10) and in growth stage (*b*=.09, p<.10). However, the individual performance effects of EO were only significant for the case of *Proactiveness* (*b*=.54, p<.10 for early stage, *b*=.07, p<.10 for growth stage). In growth stage, the performance effect of *Innovativeness* proved to be significant (*b*=.09, p<.05), but the performance effect of *Risk-taking* was proven to be insignificant.

Table 4. Regression Results by the Stage of Growth [acd]

	Early Stage (N=109)				Growth Stage (N=1,390)			
Variables	**Model A**	**Model 1A**	**Model 2A**	**Model 3A**	**Model B**	**Model 1B**	**Model 2B**	**Model 3B**
Intercept	-0.60	0.63	-0.49	0.07	0.28	0.28 +	0.34 *	0.52 ***
	(1.45)	(1.28)	(1.23)	(1.30)	(0.19)	(0.17)	(0.16)	(0.16)
Overall EO	0.60 +				0.09 +			
	(0.37)				(0.05)			
Individual EO								
Innovativeness		0.28				0.09 *		
		(0.34)				(0.04)		
Proactiveness			0.54 +				0.07 +	
			(0.28)				(0.04)	
Risk-taking				0.40				0.02
				(0.31)				(0.04)
LNAGE[b]	-0.56	-0.56	-0.55	-0.55	-0.13 ***	-0.13 ***	-0.13 **	-0.14 ***
	(0.37)	(0.37)	(0.36)	(0.37)	(0.04)	(0.04)	(0.04)	(0.04)
LNSIZE[b]	0.24	0.20	0.24	0.26	0.00	0.00	0.00	0.01
	(0.31)	(0.31)	(0.31)	(0.32)	(0.03)	(0.03)	(0.03)	(0.03)
HITECH	-0.85 *	-0.87 *	-0.72 +	-0.90 *	-0.01	-0.02	-0.01	-0.01
	(0.43)	(0.44)	(0.43)	(0.43)	(0.05)	(0.05)	(0.05)	(0.05)
F value	2.08 +	1.56	2.35 +	1.82	4.27 **	4.59 ***	4.31 **	3.48 **
R^2	0.07	0.06	0.08	0.07	0.01	0.01	0.01	0.01

Note: a. N = 1,499. b. LNAGE and LNSIZE take on the log value.
c. standard errors are in parenthesis. d. * p<.05, ** p<.01, *** p<.001

CONCLUSION

"Are the performance effects of EO universalistic independent of the structural and embedding characteristics of organization?" In order to answer this question, current study considered the effects of organizational stage of growth, and differentiated the individual performance effects of EO from overall performance effect of EO.

Empirical results with the cases of 1,499 South Korean start-ups showed that the performance effects of overall EO are proven to be constantly positive, but the performance effects of overall EO were higher in early stage of growth rather than growth stage. Although overall effect of EO on firm performance was constantly positive, individual EO such as proactiveness are constantly influence on firm performance in both early and growth stage, but innovativeness do influence of firm performance sorely in growth stage, risk-taking with no influences.

These results may suggest following two implications. First, current study suggests the EO effect patterns are contingent on the stage of growth. These results show that the performance effects of EO are not universalistic, and suggest that multi-dimensional aspect of EO seems to be more realistic than overall to display the degree of development of entrepreneurship. Although the main attributes of EO seems to be constant and shared both early and growth stage, there are few researches to compare the level of EO held by existing organizations from that by newly-founded (for an exception, Miller, 1983). Second, current study takes into account of individual effects of EO, and implies the nature of EO how firms to develop EO by taking more "strategic posture". The information from the result can be utilized for policy makers to develop EO as an advantage to compete, and suggests how individual EO can be differentiated according to the firm's growth.

However, I acknowledge that there are several limitations. First is for the issue of generalization of the results. Most of all, the cases of early stage was small (N=109) to generalize the results. Also, when I analyzed the effects of EO on firm performance, I just used secondary data of sales volume to minimize the potential existence of common method bias. Thus, future research was needed to consider longitudinal data with large cases. Second, I do not consider the antecedents which determined the level of EO. If antecedents of EO will be considered or at least controlled, the performance of effects of overall and individual EO can be modified. Thus, future research was needed to consider antecedents of EO with diverse performance effects of EO.

REFERENCE

Covin, J. G., & Slevin, D. P.(1991). A conceptual model of entrepreneurship as firm behavior. ***Entrepreneurship: Theory and Practice***, 16(1), 7-25.

Covin, J. G., & Slevin, D. P.(1989). Strategic management of small firms in hostile and benign environments. ***Strategic Management Journal,*** 10(1), 75-87.

Covin, J. G., Slevin, D. P., & Schultz, R. L. (1994). Implementing strategic missions: Effective strategic, structural and tactical choices. ***Journal of Management Studies***, 31(4), 481–505.

Gefen, D., Straub, D., & Boudreau, M.(2000). Structural equation modeling techniques and regression: Guidelines for research practice. ***Communications of the Association for Information Systems***, 7(7), 1-78.

Hart, S. L. (1992). An integrative framework for strategy-making processes. ***Academy of Management Review***, 17(2), 327-351.

Hughes, M., & Morgan, R. E.(2007). Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. ***Industrial Marketing Management***, 36, 651-661.

Keh, H. T., Nguyen, T. T. E., & Ng, H. P.(2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. ***Journal of Business Venturing***, 22(4), 592-611.

Knight, G. A.(1997). Cross-cultural reliability and validity of a scale to measure firm entrepreneurial orientation. ***Journal of Business Venturing***, 12, 213-225.

Kreiser, P. M., Marino, L. D., & Weaver K. M.(2002). Assessing the psychometric properties of the entrepreneurial scale: A multi–country analysis. ***Entrepreneurship: Theory and Practice***, 26(4), 71-92.

Lee, C., Lee, K., & Pennings, J. M.(2001). Internal capabilities, external networks, and performance: A study of technology bases ventures. ***Strategic Management Journal***, 22, 615–640.

Lumpkin, G. T., & Dess, G. G.(1996). Clarifying the entrepreneurial orientation construct and linking it to performance. ***Academy of Management Review,*** 21(1), 135-172.

Miller, D. 2011. Miller(1983) revisited: A reflection on EO research and some suggestions for the future. ***Entrepreneurship: Theory and Practice***, 35(5), 1-22.

Miller, D.(1983). The correlates of entrepreneurship in three types of firms. ***Management Science***, 29(7), 770–792.

Moreno, A. M., & Casillas, J. C.(2008). Entrepreneurial orientation and growth of SMEs: A Causal Model. ***Entrepreneurship: Theory and Practice***, 32(3), 507–528.

Neter, J., Kunter, M. H., Nachtsheim, C. J., & Wasserman, W.(1996). ***Applied linear regression models*** (3rd ed.). Chicago, IL: Irwin.

Nunnally, J. C.(1978). ***Psychometric theory*** (2nd ed.). New York: McGraw-Hill.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P.(2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. ***Journal of Applied Psychology***, 88, 879-903.

Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M.(2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. ***Entrepreneurship: Theory and Practice***, 33(3), 761-787.

Smart, D. T., & Conant, J. S. (1994). Entrepreneurial orientation, distinctive marketing competencies and organizational performance. *Journal of Applied Business Research*, 10(3), 28-38.

Stinchcombe, A. L.(1968). Social structure and organizations. In J. G. March (Ed.), ***Handbook of organizations***: 142-193. Chicago: Rand McNally.

Wiklund, J(1999). The sustainability of the entrepreneurial orientation-performance relationship. ***Entrepreneurship: Theory and Practice,*** 24(1), 37-48.

Wiklund, J., & Shepherd, D. A.(2005). Entrepreneurial orientation and small business performance: A configurational approach. ***Journal of Business Venturing***, 20(1), 71-91.