

# Strategic Entrepreneurship Model for Economic Transformation: Malaysian Evidence

Amran Awang<sup>1</sup>, Azizan Kassim<sup>1</sup>, Azura Mohd Noor<sup>2</sup>, Najihah Shukor<sup>1</sup>, Ahmad Zakhwan Shaari<sup>1</sup>, Shazwani Amran<sup>1</sup>, Sarah Mardhiah Selamat<sup>1</sup> & Shaiful Annuar Khalid<sup>1</sup>

<sup>1</sup> Faculty of Business and Management, University of Technology MARA (UiTM), Perlis Campus, Malaysia

<sup>2</sup> Faculty of Accountancy, University of Technology MARA (UiTM), Perlis Campus, Malaysia

Correspondence: Amran Awang, Faculty of Business and Management, University of Technology MARA (UiTM), Perlis Campus, 02600 Arau Perlis, Malaysia. E-mail: amranawang@yahoo.com

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## Abstract

The study examines input-process-output model of strategic entrepreneurship among the Malaysian SMEs entrepreneurs. The study justified resource inputs (environment, organizational and individual) are important resources for firms' output. The study examines 46 entrepreneurs in the community in cross-sectional analysis. The results indicate that the model uphold the resource-based view (RBV) theory that environmental, organizational and individual resources determine better SMEs' economic performance in Malaysia. Research limitations, common method bias and future studies are also discussed.

**Keywords:** strategic entrepreneurship, environmental resources, organizational resources, individual resources, competitive advantage, value creation, job creation, wealth creation, economic transformation, SMEs, Malaysia

## 1. Introduction

Inquiry in strategic entrepreneurship has steadily entered into entrepreneurship study since early 2000 when Hitt, Keats and Yucel (2003) proposed a conceptual framework in their textbook. However, much still unknown in capitalizing SE as a body of knowledge in entrepreneurship literatures. Most of the studies (e.g. Shepherd & Wilklund, 2009; Schindehutte & Morris, 2009; Hitt, Ireland, Sirmon, & Trahm, 2011) reiterated that SE has considerable impact on firms' growth, competitive advantage, opportunity advantage, value and wealth creation.

SE is an integrative model of strategic management and entrepreneurship whereby they capitalize on firms' behavioral aspect that will transform their internal resources (transforming its product, markets, internal processes and so on) to a better future and higher industrial standard (Hitt et al., 2011). Covin and Miles (1999) explain SE may take any one of the five forms, "strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction" (p. 54).

Works in SE begin to take some forms filling basic gaps, especially in concept and model development (Hitt et al., 2011). Among others a model of Ireland, Hitt and Sirmon (2003) proposed four dimensions (1) the entrepreneurial mindset, culture and leadership, (2) the strategic management of organizational resources, (3) application of creativity, and (4) development of innovation invites further inquiry. Kyrgidou and Hughes (2010) criticized the model as lacking in robustness required in capturing the gestalt of SE. Supporting the argument there were studies suggesting the model to uphold SE as broader in scope, multilevel and more dynamic compared to original conceptualization (Chiles, Bluedorn, & Gupta, 2007; Hitt, Beamish, Jackson, & Mathieu, 2007; Rindova, Barry, & Ketchen, 2009). Recently, Hitt et al. (2011) proposed input-processes-output (I-P-O) model of SE that incorporates multilevel and more general domain, environmental influences, resource orchestration (RO) and three levels of outcome.

This paper verifies Hitt et al. (2011) input and output variables within Malaysian SMEs. A preliminary analysis among 46 small and medium firms justifies the instruments appropriate for the model. Analysis on direct relationships executed in testing the hypothesis. The study explores relationships that substantiate RBV and subsequently help in delineating which resources appropriate to enhance our nation's competitive advantage, job creation, value creation, wealth creation and economic transformation.

## 2. Research Issues

The quests for sound research instruments are always treated as a major factor before research results finalized. Study in SE has been a recent phenomenon where most of the literature were mainly seminal and conceptual, thus gap for construct and measurement development are essential for relationship inquiry. Moreover, limited study found investigating on relationship between input-output models of strategic entrepreneurship. We propose the research question as follows; 1) how does individual, organizational and environmental construct delineate into SE dimensions. 2) How do SE input factors explain the output factors?

## 3. Strategic Management, Entrepreneurship and Economic Performance

Kuratko, Ireland and Hornsby (2001) argued that the integration of entrepreneurship and strategic management could enhance and speed up firms' direction towards their goals. Both concepts predict better firm performance. But, specifically strategic management focuses on organizations' continuous renewal and growth. Even though major component of strategic management is plan formulation in managing firms' external opportunities and threats in the purview of firms' internal strengths and weaknesses, but it is also a way of thinking i.e. 'strategic thinking' in search of new sources of competitive advantage (Kuratko & Audretsch, 2009).

On the other hand, Ronstadt (1984) reiterated that entrepreneurship is a dynamic process of creating incremental wealth. Entrepreneurs execute the process by taking the risks in value creation of new or existing product or service. The study on entrepreneurship observes steady growth after David Cantillon (1755), Knight (1921) and Schumpeter (1934) proposed creative destruction concept, risk, uncertainty and economic development theory respectively. Entrepreneurship concept walks through multiple paths looking for an identity (Jennings, 1994). Several examples traced back since early 1900 assimilate entrepreneur as a private business owner (Tuttle, 1927), other scholarly work in entrepreneurship associates entrepreneur as a manifestation of a 'heffalump' (Kilby, 1971). Furthermore in the 80s Vesper (1980) defined entrepreneur as an individual, and entrepreneurship as firm behavior (Gartner, 1989). Firm performance as the outcome entrepreneurship entered into scholarly publications since late 70s such as studies of Khandwalla (1977) and Miller (1983).

Both strategic management and entrepreneurship is argued as drivers in economic development (Cole, 1959; Agarwal, Audrestch & Sarker, 2007; Carree & Thurik, 2008). Agarwal et al. (2007) cited that strategic management of places or also known as economic development policy primarily focuses on strategic entrepreneurship to uphold innovation and growth. Carree and Thurik (2008) noted that the rediscovery of entrepreneurial primacy as a contributor to economic growth, job creation, and competitiveness in global markets.

However, Dolfsma and de Panne (2008) replicated Acs and Audretsch study in 1988 and discovered contrary result that when firms were getting larger they became less innovative, a phenomenon justified in Schumpeter (1942) innovation theory. Thus Schumpeter argument on economic development and SMEs now lend substantial supports (Kirchoff, 1994; Dolfsma & de Panne, 2008; Stawasz & Glodek, 2010).

## 4. Strategic Entrepreneurship Model

The strategic entrepreneurship's I-P-O (Note 1) model is multilevel that includes both opportunity and advantage-seeking behaviors reflected in environment, organization and individual level (Hitt et al., 2011). These inputs determine the resource orchestration that subsequently creating value for societies, organizations and individuals as shown in Figure 1 in Appendix A.

On the other hand, SE is the integration of strategic management and entrepreneurship (Hitt et al., 2011). Earlier studies in strategic management noted in Andrew (1961), Chandler (1962), Ansoff (1963) barely touched on entrepreneurship as a strategic factor in organization. However, these theories evolved through complexities in a competitive landscape in search of competitive advantage (Porter, 1985) that recently intersected with entrepreneurial perspective as a new domain in recent business landscape. SE is expected to explain wealth and value creation in the presence of opportunity and ultimately secured the competitive advantage (Hitt et al., 2011).

The input dimensions include environmental factors, organizational factors and individual resources. The SE processes that require firms to act entrepreneurially in the orchestration of its resources where besides protecting and exploiting existing resources the firm explores into new and value-creating resources. The concept of resource orchestration is highlighted in recent research that suggests effective strategic entrepreneurship requires organizational leaders to acquire, organize, and deploy resources for optimal advantage (Ndofor, Sirmon, & He, 2011; Sirmon, Hitt, & Ireland, 2007; Chirico, Sirmon, Sciascia, & Mazzola 2011). Such activities highlight the value of using resources to both explore and exploit entrepreneurial opportunities (Hitt et al., 2011).

## 5. The Resources Manifestation

Entrepreneurship and strategy literature provide endless lists of factors that manifest as resources or inputs that explain a firm's higher performance and sustainability. However, which resources were more important in terms of rarity, value, inimitable and no close substitute have been clarified in Penrose's (1959) resource base theory (RBT), and further elaborated in Wernerfelt (1984) and Barney (1991) then termed as a resource-based view (RBV). This newer version of resources imperatives prove that the intangibles one were always superior due to its nature of value creator, rareness, inimitability and absent of close substitutes (Grant, 1996).

Environmental factors, organizational and individual resources in combined form cited as managed resources in Ireland et al. (2003), resource orchestration in Hitt et al. (2011) and Chirico et al. (2011). The operationalization of resource orchestration has been quite extensive when it involves three key dimensions of structuring, bundling and leveraging.

Each input has been discussed in Ireland et al. (2003) and Hitt et al. (2011). The external environmental is a resource that facilitates firm in identifying, acquiring and exploiting resources. These resources include tangibles such as raw materials, financial capital, labor and customers. The intangibles include those assets such as tacit knowledge in a particular area. Other facilitating environmental factor is dynamic that creates uncertainty. Some studies proved dynamic environment were positively related to new venture formation (Aldrich, 2000), and in Wang and Li (2008) proved dynamic environment explained higher innovation in simulation of exploration.

Organizational resources reside in the firm's strategic posture, and thus firm level dimensions of innovativeness, proactiveness and risk-taking behavior proved substantial in determining enhanced and sustained SMEs performance (Awang et al., 2009; Covin & Slevin, 1991; Lumpkin & Dess, 1996). These entrepreneurship dimensions have been part and parcel of the corporate entrepreneurship concept (Block & MacMillan 1995; Covin & Miller, 1999; Dess et al., 1999; Guth & Ginsberg, 1990) that shaped entrepreneurial behavior in larger firms through internal corporate venturing (ICV).

Individual resources as mentioned and conceptualized in Ireland et al. (2003) proposed that both tangible and intangible resources were suitable for strategic entrepreneurship. Entrepreneurial mindset refers to an intended thought process of entrepreneurs towards business and opportunities and consciously aware of the presence of uncertainties in the environment (Hitt et al., 2003). In addition, Doepfer (2013) relates entrepreneurial mindset with competencies of entrepreneurs in identifying opportunities, strategizing and organizing. Another perspective that molds entrepreneurial mindset has been due to the culture that supports entrepreneurial thinking. Other individual resources include the balancing of knowledge exploration and exploitation (Rezaian & Naeiji, 2012). The intangible capitals are manifested in human, structural, relational and social (Miller & Buys, 2008; Rezaian & Naeiji, 2012). Knowledge exploration and exploitation always capitalize on creating resources superior to competitors (Revilla et al., 2008; Lumpkin, Steier, & Wright, 2011). Earlier study in SE found in Hitt et al. (2001) proposed that the integration of entrepreneurial opportunity-seeking and strategic advantage seeking actions requires firms to change existing operations.

## 6. Strategic Entrepreneurship and SMEs Economic Performance

The study extends knowledge established in strategic management that competitive advantage and value creation have been the core issues (Chen, Fairchild, Freeman, Harris, & Venkataraman, 2010). In addition, other studies such as Ketchen, Ireland & Snow (2007) and Porter (1980) noted that the main factor in determining firms' ability to create value and wealth for stakeholders and society was the effective competitive positioning. In similar vein, we argue that strategic entrepreneurship may provide fertile ground for a nation's economic performance. The economic domains worth further inquiry are such as job creation and economic transformation plan.

Malaysian ETP plays a pivotal role in enhancing the country towards a developed nation in 2020 or earlier. Initial indicators prove few achievements; however, some economic objectives remain unachieved, such as the 30 percent participation of the Bumiputera in country's economic sectors which showed just about 20 percent achievement (Malaysia, 2010).

SMEs roles in economic transformation involve their actions in reinventing themselves. Oxford Economics (2013) suggested the process includes revenue generation should come from outside their home country, do a significant change to their business model and operation, develop human capital either groom employees with growth capabilities or recruit right candidates. However, role of SMEs in economic transformation remain largely unresolved worldwide (Herrendorf, Herrington, & Valentinyi, 2013), referring to economic growth

remains imbalance on inappropriate input, human capital misallocation, sectoral unleniency and resource misallocation issues.

Hence, we posit:

*H1: SE individual, organizational and environmental inputs are delineated in specific factors*

*H2: There is a positive relation between environmental inputs and SMEs economic performance*

*H3: There is a positive relation between organizational inputs and SMEs economic performance*

*H4: There is a positive relation between individual inputs and SMEs economic performance*

## 7. Research Model

Three input factors comprise of environmental, organizational and individual resources determine the SMEs economic outputs factors namely the competitive advantage, value creation, wealth creation, job creation and economic transformation. Part of input-process-output model is the modified model proposed in Hitt et al. (2011). Refer the research model in Figure 1 in Appendix A.

## 8. Methodology

### 8.1 Sampling

Sample of the study comprise of those established small and medium sized enterprises (SMEs) in Malaysia. Established SMEs are those with more than 10 employees, the firms have distinct and separate departments, established at least within five years in operation and endow capital more than RM250, 000. There were about 10 percent of the SME's population in Malaysia are within this category.

Sampling utilizes simple random sampling to render quantitative data from the observation among the selected sample. The population frame establishes from list of SMEs identified in various authorities such as MARA, Agrobank, MADA, and KADA. Ensuring representative sample size calculation is executed as suggested in Berenson (2001). Principle of sampling in ensuring each SME to have equal chance to be selected, sample selection then utilizes random number table to identify numbers of SMEs in the population frame respectively until the sample size identified is achieved. From population frame as listed number of sample (n) is then selected whereby a sample frame then established. The 'n' denotes the sample size derives through estimation of sampling error (SE). The sampling error estimates the rate of variability in the observations. Other factor considered in the estimation is the confident level that usually set at  $p < .05$  or 95 percent confident level. Thus the smaller the variability, the lesser sample size derived.

The pilot study utilizes majority of about 55 percent male entrepreneurs, they were mostly among younger age respondents about 60 percent representation. About 70 percent of the respondents were those that passed high school to master degree. Fifty percent of the respondents were the owner manager of the firms and the rest were managers. The firms existence period used in pilot study were about equally distributed where half have been in operation more than 5 years and the other half were less than 5 years. However, most of the firms were small sized where about 90 percent employed less than 50 employees. About 70 percent of the firms were sole proprietor while the rest were private limited and joint ventures. Types of business were mainly services where only about 20 percent were manufacturer and mixed type. The demographic distribution is as listed in Table 1 in Appendix B.

### 8.2 Measurement and Instruments

Second is to operationalize the construct into measurable instruments, the operationalization will take at least two steps to execute a pilot study that preliminary verify the validity and reliability of the construct items.

#### 8.2.1 Strategic Entrepreneurship and Antecedents

The measurement for inputs of SE was adopted from number of studies in Rezaian and Neiji (2012) and Naldi et al. (2011). Strategic entrepreneurship as a three-factor concept: entrepreneurial mindset, balancing exploration and exploitation, and continuous innovation (Ireland et al., 2003; Ireland & Webb, 2009). The term "mindset" refers to "the cognitive frameworks through which fresh and existing knowledge is interpreted and used to inform decisions such as those regarding strategy and entrepreneurship" (Baron, 2007). The second dimension of strategic entrepreneurship is to find a balance between exploration and exploitation (Ireland et al., 2003). This dimension is the centerpiece of strategic entrepreneurship concept and researches have shown that this balancing will contribute to achieving superior performance (Huang, 2009). The third key element is continuous innovation that occurs when an enterprise continuously creates or transfers economic value. Therefore, continuous innovation directly and positively contributes to a firm in creating wealth. In sum, the strategic entrepreneurship

discussed above offers new ideas to develop and exploit a firm's strategy in pursuing competitive advantages. Please refer Figure 2 in Appendix A.

In addition, Naldi et al. (2011) utilized knowledge resources as the rate companies' endowment of the following knowledge resources for the previous three years: 1) technology know-how, 2) manufacturing know-how, 3) marketing know-how, 4) distribution know-how and 5) human resources.

### 8.2.2 SMEs Economic Performance

The concept of competitive advantage cannot be boiled down to a formula or a ratio; furthermore, distinguishing between competitive advantage and operational efficiency is often difficult. Harvard Business School Professor Michael Porter, in his excellent essay, "What Is Strategy?" (1996), argues that these two concepts must not be confused: operational effectiveness means a company is better than rivals at similar activities while competitive advantage means a company is performing better than rivals by doing different activities or performing similar activities in different ways. Investors should know that few companies are able to compete successfully for long if they are doing the same things as their competitors.

On the other hand, a national economic transformation utilizes measures from Floud (1984) in a study that measures European economic transformation. Floud (1984) gauges national income as an indicator. United Nations G-20 (2011) indicates that job creation, wealth creation and SMEs' global participation of a country were among indicators of a national economic transformation for developing countries.

The instruments used in the research are summarized in Table 1 (Refer Appendix B). Most of the items were adapted from number of sources and some items were self developed. All research instruments were on a 7-point scale. Wealth creation and economic transformation were self develop after considering some information in the literature (Madden, 2007; UN G-20, 2011).

### 8.3 Common Method Bias (CMB)

We run the Harman one factor test as suggested in Podsakoff, MacKenzie, Lee & Podsakoff (2003) as an indicator that proved significant different between constructs used in the study. The EFA was run on each input variable and output variable in one factor that showed the variance explained on the factor were less than .50. The results proved all measures were free from CMB. Realizing the effect of CMB that could harm data early precaution was taken by formulating the instruments adapted from different sources (Podaskoff et al., 2003).

## 9. Results

The results were analyzed in three stages, first, the descriptive analysis. Second, verify the goodness of measures through construct validity and reliability analysis. And third, the inferential analysis utilized multiple regressions.

### 9.1 Descriptive Statistics

The descriptive observed that the respondents in the study were 54 percent male representation. The age bracket was younger where 73 percent represented by those less than 50 years. Education level was 94 percent was among those with undergraduate degree and below. Most of the respondents were middle managers represented by 83 percent. Most of them have been in the firm for more than 3 years to more than 20 years showed about 76 percent representation. Refer Table 2 in Appendix C.

The firm descriptive showed 65 percent were in service business where 91 percent employed less than 20 employees. Most of the firms were 65 percent registered in proprietorship form. The details are shown in Table 2 in Appendix C.

### 9.2 Construct Validity

Exploratory factor analysis (EFA) was utilized to verify the construct validity of the items used in the questionnaire. The EFA utilized the principal component analysis (PCA) and rotated using the orthogonal approach of varimax rotation. Individual input comprised of entrepreneurial mindset, balancing exploration, knowledge exploration and exploitation were explained by more than 60% of the total variance with 4 items loaded significantly on each variables as suggested.

The organizational input factors comprised of corporate entrepreneurship, human capital, social capital, relational capital, entrepreneurial culture and leadership observed corporate entrepreneurship loaded on 6 items (4 items were removed due to low measures of sampling adequacy and communality less than .50) with 61% of variance explained. The 19-items intellectual capital construct loaded on three factors of human, social and relational capital explained by 70% of the variance with 15 items (4 items were removed due as above) however,

the structural capital was denied as a factor. Entrepreneurial culture and leadership construct observed 69% of the variance with only one item removed due to low measures of sampling adequacy.

The environmental input factors observed 14-items construct loaded on three factors of environmental uncertainty, dynamism and complexity explained by 69% of the variance with 2 items were removed. The results of EFA are tabulated in Table 3 in Appendix D.

Thus, *H1* was substantiated that the three SE input factors were delineated according to specific factors.

### 9.3 Variable Descriptive

EFA helps segregate items according to specific factors shown in the value of each factor loading. Items loaded in each factor then went through reliability analysis indicated in Cronbach's alpha. Ensuring reliable alpha, some items were dropped that the measures achieved .70 at least as suggested in Nunnally (1981). Table 4 lists down the scores of each variable in the study (please refer Appendix E).

The results proved that some of the relationships as suggested in the proposal were substantial. Table 4 in Appendix F exhibits the measures of central tendency, reliability and correlation analysis of all variables in the study.

### 9.4 Inferential Analysis

The relationships between variables were run at lower order multiple regression analysis. Table 5 exhibited the direct MRA between independent and dependent variables. The technique applied as suggested in Hair et al. (2006).

#### 9.4.1 Direct Relationship

Individual resource dimensions have sufficient variance in explaining four economic performances except wealth creation output. Specifically, both competitive advantage and economic transformation showed positive relations with balancing exploration and knowledge exploration dimensions at  $p < .01$ . On the other hand, balancing exploration and knowledge exploitation explained higher value creation and knowledge exploration explained higher job creation. However, entrepreneurial mindset and knowledge exploitation showed negative relation with job creation and competitive advantage respectively.

Organizational resources proved four economic performance dimensions achieved sufficient variance in the coefficient of determination except wealth creation output. Corporate entrepreneurship explained higher competitive advantage, job creation and economic transformation dimensions. Each social capital and entrepreneurial culture showed positive relation with values creation and economic transformation respectively. On the other hand, human capital was negatively related to economic transformation.

Environmental resource dimensions showed sufficient variance to explain SMEs economic performance dimensions. Environmental dynamism explained higher competitive advantage and job creation. On the other, environmental uncertainty explained higher value creation and economic transformation. And subsequently, environmental complexity explained higher wealth creation and economic transformation.

The summary of relationship between SE input variables and SMEs economic performance was presented in Table 5 in Appendix F. Thus all *H2*, *H3* and *H4* were partially supported.

## 10. Discussion and Conclusion

The preliminary analysis with small sample proves the construct validity and reliability of each variable was substantiated. The EFA clears the distinctiveness of each variable that justifies the research question and hypothesis. Hence SE antecedents were verified inherent within the individual, organizational and environmental paradigm as discussed in Kuratko and Audrestch (2009), and Hitt et al. (2011). The data clears some issue regarding the intercorrelation when no extreme relationships found in the Pearson *R* correlation coefficients.

We manage to verify some interesting findings in relationships between variables in Hitt et al. (2011) SE model. Most of the direct relationships were statistically verified in significant *F* value at  $p < .05$ . The coefficient of determination proved most of them achieved sufficient variance in explaining the SMEs economic performance variables. Specifically, relationship between SE input factors and outcome variables that showed two insignificant models. The findings suggest RBV (Barney, 1991) substantiated as inputs of environmental, organizational and individual resources pertinent in ensuring higher SMEs economic outcomes.

The study addressed issues on making SMEs more strategic and sustained their entrepreneurial state. These challenges prevailed in upholding SMEs central function as establishers of competitive advantage, creators of value, wealth, job and a nation's economic transformers.

This paper suggests preliminary findings based on a small group of SMEs restricted in one location. Thus interpreting the data should be done with the utmost care in generalizing the results. First, most of the observations were based on nascent firms at their early stage of strategy making and execution. Second, the observations were based on thought processes of one locality that exercised in one particular business area. Future studies shall capitalize on extended data from wider area and locality with more diverse strategy making process and execution.

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## Note

Note 1. The IPO model was first proposed in Tableau Economique by Francois Quesenay (1758) adapted by Leon Walras a century later and Wassily Leontif won the Nobel price in 1973 after simplifying the Walras theoretical formulation.

## Appendix A

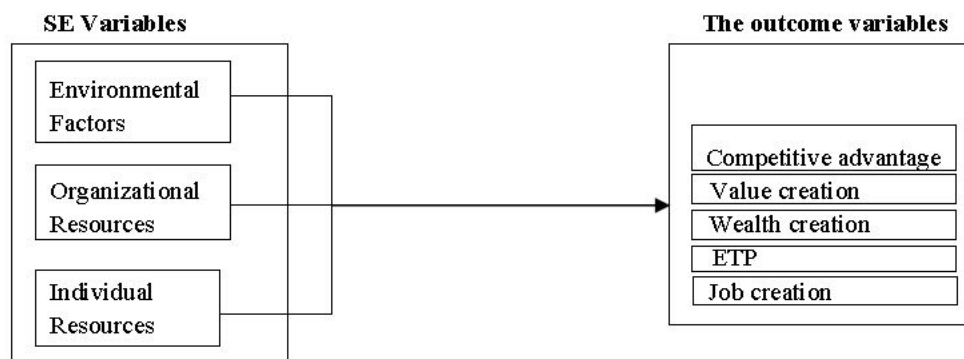


Figure 1. Model of strategic entrepreneurship (Source: Hitt et al., 2011).

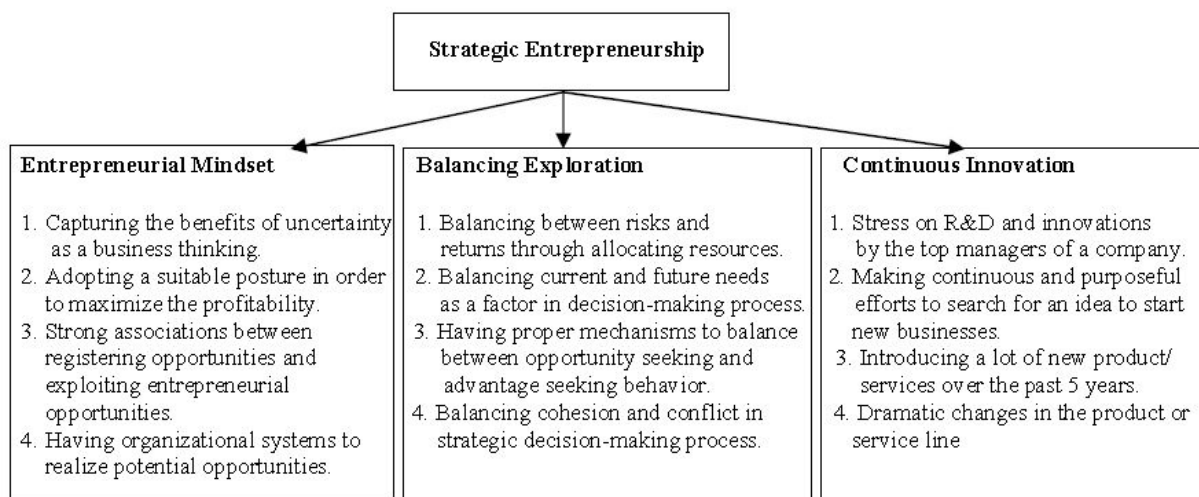


Figure 2. Operationalizing SE. (Source: Rezaian & Naeiji, 2012)

**Appendix B**

Table 1. Research Items of I-P-O Model of SE

Variable	Number of Item	Source	
<b>Input</b>			
Entrepreneurial Mindset	4	Rezaian & Neiji (2012)	( $\alpha = .79$ )
Balancing Exploration	4	-do-	( $\alpha = .74$ )
Innovativeness – EO	3	Jalali (2012)	( $\alpha = .88$ )
Proactiveness – EO	3	-do-	( $\alpha = .79$ )
Risk Taking – EO	3	-do-	( $\alpha = .89$ )
Knowledge Exploration	4	Revilla et al. (2008)	( $\alpha = .83$ )
Knowledge Exploitation	4	-do-	( $\alpha = .87$ )
Human Capital	5	Rezaian & Neiji (2012)	( $\alpha = .81$ )
Structural Capital	4	-do-	( $\alpha = .78$ )
Relational Capital	4	-do-	( $\alpha = .80$ )
Social Capital	6	Miller & Buys (2008)	( $\alpha = .83$ )
Entrepreneurial leadership	3	Gupta et al. (2004)	( $\alpha = na$ )
Entrepreneurial culture	4	Kuratko & Audrestch (2009)	( $\alpha = na$ )
Environmental Factors		Koberg et al. (2013), Revilla et al. (2008)	
Dynamism	4	( $\alpha = .73$ )	
Uncertainty	3	( $\alpha = .68$ )	
Complexity	3	( $\alpha = .84$ )	
Munificence	4	( $\alpha = .65$ )	
<b>Output</b>			
Competitive Advantage	4	Nguyen (2010)	( $\alpha = .71$ )
Value Creation	4	Rezvani & Khazaei (2013)	( $\alpha = .75$ )
Job Creation	4	Munikrishnan (2009)	( $\alpha = .96$ )
Wealth Creation	4	Madden (2007)	( $\alpha = na$ )
Economic Transformation	4	UN G-20 (2011)	( $\alpha = na$ )

**Appendix C**

Table 2. Demographic descriptive

Variable	Percent
<b>Gender</b>	
Male	54.3
Female	39.1
<b>Age</b>	
Less than 30 years old	26.1
30-40 years old	30.4
41-50 years old	26.1
51-60 years old	10.9
More than 60 years old	2.2
<b>Education level</b>	
High school	26.1
Diploma	19.6
Undergraduate	50.2
Masters	4.3
PhD/Doctorate	0
Others	2.3
<b>Current position</b>	
CEO	6.5
Managing Director	10.9
General Manager	28.3
Sales/Marketing Manager	15.2
Finance/Accounting Manager	2.2

Variable	Percent
Human Resource Manager	0
R&D Manager	0
Information Technology Manager	0
Operations/Production Manager	8.7
Others	23.9
Years Work	
Less than 1 year	15.2
1-2 years	8.7
3-5 years	28.3
6-10 years	17.4
11-20 years	17.4
More than 20 years	8.7
Number of employees	
Less than 20	91.3
20-49	2.2
50-199	2.2
200-299	0
300-499	0
500 and over	0
Type of ownership	
Sole Proprietor	65.2
Private Limited	19.6
Public Limited	0
Joint Venture	6.5
100% Foreign Owned	0
Others	4.3
Primary industry	
Manufacturing	4.3
Service	65.2
Mixed	13

## Appendix D

Table 3. Exploratory factor analysis

Variable/Item	KMO, Bartlett Test of Sphericity & DF	Construct/(% of total variance)/ Factor loading or coefficients	
Entrepreneurial mindset	.75, 88.65**, 6	(66.39)	
Capture benefit of uncertainty		<b>.93</b>	
Register and exploit opportunities		<b>.93</b>	
Adopt a posture to maximize profitability		<b>.88</b>	
Possess organizational systems		<b>.40</b>	
Balancing exploration	.80, 85.51**, 6	(72.37)	
Balance current & future need		<b>.91</b>	
Balance opportunity & advantage seeking		<b>.87</b>	
Balance risk & returns through		<b>.81</b>	
Balance cohesion & conflict in DM		<b>.81</b>	
Corporate Entrepreneurship	.74, 132.66**, 15	(61.11)	
Stress on R&D & innovation		<b>.23</b>	
Continuous efforts for idea		<b>.17</b>	
Introduce new products in 5 years		<b>.22</b>	
Create dramatic changes in products		<b>.24</b>	
First to initiate action that competitor react		<b>.22</b>	
First to introduce new products		<b>.19</b>	
Knowledge exploration (Explore)	.79, 193.32**, 28	Explore (32.14)	Exploit (38.03)
Detect and make correction to problems		<b>.92</b>	<b>.15</b>

Variable/Item	KMO, Bartlett Test of Sphericity & DF	Construct/(% of total variance)/ Factor loading or coefficients		
Cover customers' problem areas		<b>.87</b>	.09	
Make use of existing competence		<b>.73</b>	.38	
Identify valuable knowledge elements		<b>.60</b>	.30	
Knowledge exploitation (Exploit)				
Introduce new knowledge & method		.01	<b>.91</b>	
Produce new & useful ideas		.25	<b>.76</b>	
Lesson learned put into operation		.45	<b>.73</b>	
Integrate new & existing ways in tasks		.53	<b>.61</b>	
Human capital (HC)	.85, 463.15**, 105	HC (44.13)	SC (14.88)	RC (11.71)
Respect differ in culture and individual		<b>.90</b>	.20	.01
Establish family and friend connection		<b>.90</b>	.18	.02
Ensure guest's complaints are settled		<b>.87</b>	.15	.03
Instills feeling of trust		<b>.85</b>	.10	.17
Establishes neighborhood connection		<b>.85</b>	.13	.15
Increase knowledge across dept.		<b>.80</b>	.08	.23
Develop & share knowledge		<b>.80</b>	.12	.22
Develop cooperation across dept.		<b>.79</b>	-.03	.21
Improvise consumer satisfaction		<b>.79</b>	.16	.12
Social capital (SC)				
Relationship with commercial partners		.15	<b>.83</b>	.21
Participate in local community		.14	<b>.80</b>	-.06
Employ good qualified employees		.17	<b>.71</b>	.11
Relational capital (RC)				
Develop appropriate reward system		.26	.18	<b>.74</b>
Requires work experience		-.11	.42	<b>.71</b>
More valuable brand than competitors		.32	-.19	<b>.66</b>
Entrepreneurial culture (Cult)	.68, 96.33**, 15	Cult (45.71)	Lead (23.36)	
Emphasize courage confidence hope		<b>.94</b>	-.01	
Focus on good interpersonal relations		<b>.89</b>	.10	
Never experience lack of idea		<b>.75</b>	-.36	
Focus on improving firm's services		<b>.70</b>	-.20	
Entrepreneurial leadership (Lead)				
Unusual ability to persuade		-.16	<b>.82</b>	
Many promising ideas		-.01	<b>.74</b>	
Environmental Uncertainty (U)	.65, 267.28**, 66	U (29.41)	D (24.75)	C (14.78)
Influence of external environment		<b>.80</b>	.02	.36
Level of process complexity		<b>.80</b>	.25	-.17
Technology change and opportunity		<b>.78</b>	.20	.14
Level of technological change		<b>.76</b>	-.11	.21
Level of product complexity		<b>.75</b>	.09	-.03
Ability to get skilled labor		<b>.56</b>	-.28	.56
Environmental dynamism (D)				
Accessibility to financial capital		-.04	<b>.83</b>	-.04
Knowledge intensity in product dev.		.21	<b>.78</b>	.01
Level of customer's preference changes		-.05	<b>.77</b>	.16
New product through breakthrough tech.		.29	<b>.69</b>	.13
Environmental complexity (C)				
Ability in utilizing managerial talent		.20	.18	<b>.86</b>
Stability in economic external environment		-.13	.61	<b>.68</b>
Competitive advantage (CA)	.65, 172.19**, 28	CA (39.05)	VC (29.88)	
Capabilities difficult to duplicate		<b>.86</b>	-.22	
Always to consider IP protection		<b>.84</b>	-.16	
Committed in env. preservation		<b>.76</b>	.19	
Use KM to widen product array		<b>.73</b>	.18	

Variable/Item	KMO, Bartlett Test of Sphericity & DF	Construct/(% of total variance)/ Factor loading or coefficients		
Market position create strong barrier		<b>.72</b>		
Value Creation (VC)		<b>.51</b>		
Often uses K-Based innovation		<b>.06</b>		
Our products provide great benefits		<b>-.18</b>		
Always consider well being of people		<b>.18</b>		
Economic transformation (ET)	.75, 433.85**, 66	ET (33.07)	JC (27.27)	WC (17.36)
Contribute to NKEA		<b>.92</b>	.22	.09
Our firm is substantial to METP		<b>.90</b>	.28	.11
Employees were ETP well informed		<b>.85</b>	.17	.27
Allocate % of income for community		<b>.85</b>	.07	.09
Affect changes due to ETP		<b>.78</b>	-.02	.21
Job creation (JC)				
Created substantial nos. of new positions		.05	<b>.89</b>	.30
Added substantial nos. of employees		.14	<b>.89</b>	-.01
Provide wide senior position oppotunities		.15	<b>.86</b>	.13
Wealth creation (WC)		.16	<b>.83</b>	-.16
We pay dividnet every year		.18	.14	<b>.93</b>
We pay income tax every year		.21	.09	<b>.90</b>

Appendix E

Table 4. Measures of central tendency and correlation analysis

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>Individual/Org factor</b>																				
1. Ent mindset	5.59	1.13	(.76)																	
2. Balancing explore	5.73	.86	.79**	(.87)																
3. Corporate Ent	4.37	1.48	.05	.24	(.87)															
4. Knowledge explore	4.97	1.14	.68**	.73**	.10	(.80)														
5. Knowledge exploit	5.63	1.41	.36**	.42**	.62**	.61**	(.84)													
6. Human capital	6.03	1.04	.72**	.78**	.17	.60**	.59**	(.95)												
7. Relate cap	5.10	1.35	.27*	.28	.47	.46**	.46**	.33**	(.73)											
8. Structural capital	4.26	1.31	.24	.32**	.43	.23	.21	.30**	.28*	(.63)										
9. Entrepreneur cult	5.72	.99	.70**	.71**	.25	.40**	.62**	.77**	.37**	.31*	(.85)									
10. Entrepreneur lead	3.34	1.46	-.11	-.14	-.42**	-.22	-.23	-.08	-.01	-.26*	-.17	(.42)								
<b>Environ. Factors</b>																				
11. Uncertainty	5.26	1.19	.63**	.71**	.29*	.49**	.56**	.79**	.24	.09	.76**	-.02	(.86)							
12. Dynamism	4.42	1.38	-.09	-.05	.61**	.43**	.43**	.07	.31*	.23	-.04	-.33*	.19	(.82)						
13. Complexity	5.45	1.01	.39**	.42**	.21	.46**	.48**	.58**	.42**	.32*	.49**	.01	.25	.49**	(.74)					
<b>14. Competitive adv</b>																				
15. Value Creation	4.21	1.53	-.05	.15	.76**	.48**	.04	.07	.35*	.31*	.13	-.42**	.11	.70**	.18	(.85)				
16. Wealth Creation	5.67	1.13	.62**	.62**	.15	.67**	.66**	.73**	.36*	.21	.65**	-.01	.74**	.07	.52**	.16	(.77)			
17. Job Creation	5.07	1.87	-.04	.11	.40**	.29	.20	.15	.34*	.23	.14	-.20	.09	.15	.38**	.44**	.15	(.90)		
18. Economic Transf	3.45	1.80	-.18	-.01	.55**	.35*	.03	.06	.06	.34*	.15	-.30*	.19	.48**	.09	.64**	.16	.22	(.93)	

\*\*p<.01, \*p<.05, Cronbach's alpha is in parantheses on the diagonal.

Appendix F

Table 5. SE input and resource orchestration

	Competitive Advantage		Value Creation		Wealth Creation		Job Creation		ETP	
	B	SE	B	SE	B	SE	B	SE	B	SE
<b>Individual resources</b>										
Intercept	1.62	1.29	.55	.78	2.47	1.82	2.21	1.65	-1.23	1.05
Entrepreneurial mindset	-.50	.28	.02	.17	-.78	.40	<b>-.80*</b>	.36	-.30	.23
Balancing exploration	<b>1.00**</b>	.40	<b>.55*</b>	.24	.77	.56	.75	.51	<b>1.32**</b>	.32
Knowledge exploration	<b>.77**</b>	.17	-.02	.10	.13	.40	<b>.64**</b>	.22	<b>.36*</b>	.14
Knowledge exploitation	<b>-.75**</b>	.29	<b>.38*</b>	.17	.37	.24	-.31	.37	-.23	.23
Adjusted R2	.37		.55		.09		.21		.48	
F-Value	<b>7.12**</b>		<b>13.64**</b>		2.13 <sup>ns</sup>		<b>3.76*</b>		<b>10.61**</b>	
SEE	1.23		.74		1.73		1.56		.99	
Durbin Watson	1.74		2.16		1.78		2.31		1.80	
<b>Organizational resources</b>										
Intercept	2.18	1.21	.03	.95	2.39	2.14	.78	1.80	-.94	1.24
Corporate Ent	<b>.73**</b>	.14	-.02	.11	.30	.25	<b>.76**</b>	.21	<b>.44**</b>	.14

Relationship capital	.07	.15	.11	.11	.32	.42	-.38	.21	.03	.15
Social capital	-.03	.24	<b>.59**</b>	.18	.12	.26	-.14	.35	.06	.24
Human capital	-.04	.14	-.02	.11	.06	.24	.20	.20	<b>-.28*</b>	.14
Entrepreneurial culture	-.13	.25	.27	.19	-.15	.44	.19	.37	<b>.82**</b>	.25
Entrepreneurial leadership	-.16	.12	.05	.10	-.13	.22	.04	.19	.01	.13
Adjusted R2	.54		.51		.07		.28		.49	
F-Value	<b>9.66**</b>		<b>8.51**</b>		1.56 <sup>ns</sup>		<b>3.74**</b>		<b>7.93**</b>	
SEE	1.03		.80		1.82		1.51		1.06	
Durbin Watson	1.41		2.07		1.62		2.28		2.04	
Environmental resources	B	SE	B	SE	B	SE	B	SE	B	SE
Intercept	.87	.98	<b>1.37*</b>	.66	2.56	1.55	.19	1.39	.46	1.04
Dynamism	<b>.79**</b>	.13	-.10	.09	.09	.21	<b>.63**</b>	.19	-.11	.14
Uncertainty	-.05	.19	<b>.70**</b>	.13	-.29	.29	.24	.27	<b>.58**</b>	.20
Complexity	.01	.17	.19	.11	<b>.70**</b>	.26	-.17	.24	<b>.37*</b>	.18
Adjusted R2	.45		.56		.11		.19		.35	
F-Value	<b>13.18**</b>		<b>19.45**</b>		<b>2.79*</b>		<b>4.44**</b>		<b>8.75**</b>	
SEE	1.12		.76		1.78		1.59		1.19	
Durbin Watson	1.81		2.52		1.47		2.21		2.06	

\*\* $p < .01$ , \* $p < .05$ , ns = not significant.

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