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# A Suitable Innovation Type to Improve the Added Value in Entrepreneurship

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**ABSTRACT:** Due to the tough on-going competition between producers of commodities and services, the prices of products are continuously going down nowadays. To avoid bankruptcy in such circumstances, organizations have focused on the application of technological innovations that enable them to respond to the needs of their clients. It is to this end that they attempt to gain the market and increase their sales to satisfy their clients and ultimately, depending upon the innovation, competitiveness and technological advancement, make fortune. Therefore, utilizing economic models, where innovation plays a pivotal role in growth and development has drawn the attention of many policy makers and managers.

One of the most important economic models is entrepreneurship model based on Schumpeter's theory which states that entrepreneur and enterprises are the engine to drive and generate economy; the establishment of new entrepreneurship enterprises based on innovation and creative destruction to provide value added is a central issue accordingly.

The basis for establishing new entrepreneurship enterprises is discussed form five angles in Schumpeter's theory. This includes innovation in offering new product, the production processes, making changes in raw materials and cutting prices, seeking new markets and developing the organization. However this theory has not any methodology to determine of types of the best innovation to create the most value added; this paper intends to develop Schumpeter's theory through presenting an entrepreneurship model.

The results shows that enterprises can attain the best type of innovation and make the most value added in their entrepreneurship projects, if they scrutinize their contingency conditions and fit them into the selected model. Last but not least, this model is suggested to active enterprises as internal entrepreneurs.

Keywords: Entrepreneurship, Innovation, Technological changes, Value added, Model

### **INTRODUCTION**

Nowadays, in many economic development models, the issue of entrepreneurship is propounded as an approach for exiting crises and achieving economic growth, but the issue of entrepreneurship is always accompanied by the issue of creating small and medium sized companies. Broaching the entrepreneurship issues may usually have been the clue to solving problems, but in many cases, the results obtained from the application of entrepreneurship model in entrepreneurship economic development models can reveal failures in achieving developmental goals. For instances, reference can be made to the statistics pertaining to a scientific research conducted by D. Birch on the relationship between the rate of unemployment reduction and economic growth with entrepreneurship that is resulted from creating small and medium sized companies, as well as internal entrepreneurship (Birch, 1976). D.Birch explains that until 1976, the entrepreneurship experts made no basic distinction between small and large companies, and they consequently believed that large companies had higher entrepreneurship rates, until it was announced by the

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experts at the MIT in the United States that small and medium sized companies were the main source of employment, and researches illustrated that 81.5 percent of all the newly opened jobs in the United States from 1969 to 1976 were created by small companies (i.e., companies with less than 100 employees) (Zoltman, 1979). Of course, the details of their research methodology were never made public (David, 1987); consequently, later researches demonstrated that among the small companies, the newly established ones had created more jobs than the existing companies. Furthermore, it was revealed that most of the newly opened jobs were created in a limited number of newly established companies, which had experienced a very fast rate of growth, and were called "the Gazelles". There have been companies such as Microsoft that turned into medium size or large companies in a short time (Katleen, 1999). The result that is obtained from all the Birch's researches boils down to this: small entrepreneurial companies account for a large portion of newly created (pure) jobs. It should be mentioned here that not all the newly established small and medium sized companies could be regarded as entrepreneurial companies. In a research conducted in 1990, C. Brown proved those newly established small and medium sized companies that were not established on a specific entrepreneurship basis decreased the rate of job creation (Brown, 1990). He proved that although the proportion of small companies to all companies in the country had increased from 29.37 percent to 89.91 percent in the United States, the rate of unemployment had increased because of the failure of these companies to govern themselves and to fulfill their customer's needs. Nevertheless, from 1983 to 1989, the proportion of small and medium sized entrepreneurial companies was reduced to 33 percent, and following a direct relationship, the rate of unemployment began to slow down as well. Therefore, he decided that if the newly established small and medium sized entrepreneurial companies cannot create added value through making innovations, then the process of creating economic growth and development will face essential problems. Based on the entrepreneurship literature, an activity is considered entrepreneurial when it can make innovations in order to increase value added in at least one of the following ways:

1. Making innovations in the product

2. Making innovations in the process and method of production

3. Making innovations in discovering new resources, new product materials and price reduction

4. Making innovations in detecting new markets

5. Making innovations in modifying the internal organization of a company

The five cases mentioned above, which constitute the basis of an entrepreneurship to create value added and economic growth, can be attributed to the theory of entrepreneurship proposed by the great economist, J. Schumpeter (Schumpeter, 1934). By studying the Schumpeter's theory, it can be concluded that the basis of the definition of entrepreneurship lies in creating changes in technology and making innovations based on innovative destruction. The present paper aims to explain and prove how innovation and changes in technology can contribute to economic growth in the framework of the notion of entrepreneurship.

# Schumpeter's Perspective on Entrepreneurship Based on the Innovation and Technological Changes

Schumpeter assumed that the conditions for full economic competitiveness are dominant in a society, which is experiencing a static situation. Under these circumstances, there will be no interest, no interest rate, no savings, no investment and no unemployment. This equilibrium will be created through what Schumpeter has called "circular flow", which shows itself successively and continually, so that the same old products are produced every year in the same manner of production. In the national economy, there is a demand for the supply of any product. In other words, all economic activities are repetitive. Schumpeter believes that circular flow is a large flow that is itself originated from smaller flows of work and land, and during each economic period, it flows in the form of income in order to satisfy the consumers. In Schumpeter's point of view, economic development is the automatic and interrupted changes in the channels of circular flow that cause the previous equilibrium point to change and relocate (Schumpeter, 1960). These automatic and interrupted changes in the economic life are not externally imposed perforce on economy, rather, they are internal changes that are originated from the heart of the economy, and exhibit themselves in the industrial and trade arena. Economic development includes the utilization of various combinations of the existing supplies and facilities in a static situation. These new combinations are produced only through innovations, inventions and technological change. These innovations are the five categories of innovation mentioned before. Schumpeter believes that, manufacturers no longer benefit from their products as much as they used to. This is because after a short time passes since the introduction of the product to the market, the competitors make the margin of the benefit of the product drop sharply by introduction of imitated products. It will heat up the competition so that the manufacturer realizes that the selling price of the product has become equal to its cost price. At this stage, the only process that helps the manufacturer to escape the crisis of the reduced margin is to create an innovation that is attractive to customers, and which can create value added for the organization. Therefore, technological changes and innovations are the basis of economic growth. Several other great people in the field of management and economics have mentioned this issue; in other words, many economic growth models are based on entrepreneurships together with technological changes and innovation (Drucker, 1984). It has also been proved nowadays that technological change can be a wealth-creating factor in societies (Khalil, 2000).

It should also be mentioned here that Schumpeter has a special notion of innovation in mind. Neoclassic and Keynesian economists believe that the innovation process is a linear process consisting of these three stages: basic research, utilizing the basic research and development (Suidberg, 1991). Schumpeter believes this process is the result of the three stages: invention, innovation, and distribution, and calls its basic groundwork "invention" or "innovative destruction" (Mahjubi, 2006). In fact, contrary to all the classic and neoclassic economists who believe that accumulation of capital is the factor that motivates the development of capitalist economics, Schumpeter categorizes innovation in the innovative destruction among the five areas mentioned before (Yujirohayami, 1999).

### Development of Schumpeter's Entrepreneurship Model

Schumpeter's theory of economic growth is regarded as one of the most important economic theories of modern time and has been evaluated to be as important as the theories put forward by great economists such as Smith, Mill, Marx, Marshall and Keynes. There is no doubt that it is an innovation in the field of economy, but it is by no means beyond criticism. Meier and Mand list the following six flaws that exist in Schumpeter's model (Meier and Mand, 1995): 1. All the stages in Schumpeter's theory are based on the innovators actions who Schumpeter calls "idea people".

Innovators who fit this definition could only be found in the 18th and 19th century. However, nowadays, most of the innovation happens either in growth centers and organizations or in technology parks. Therefore, there is no place left for the innovators.

# 2. Schumpeter believes that economic development is the result of the action of circular flows.

Rise, fall and fluctuation are an integral part of economic development. As Norks mentions, ceaseless change is essential for economic development. Therefore, change is not a strange and bizarre phenomenon, but an ingredient in the process of economic development.

# 3. Schumpeter is wrong to deduce that circular changes happen as a result of innovation.

Circular changes might happen as a result of actions, psychological, mental, natural or financial reasons.

# 4. Schumpeter regards innovation as the main factor for economic development.

This attitude is far from real. Economic developments do not only depend on innovations and technical progress, but also there are factors that have significant impacts on the process of economic development in any society.

# 5. Theoretically, Schumpeter believes bank credits enjoy a high level of importance.

Bank credits can solve problems in the short term, but in the long term, companies need to issue and present their stocks in the capital market in order to be able to fulfill the need of the organization for financial resources.

# 6. Schumpeter's analysis regarding the period of transition from capitalism to socialism is incorrect.

He was never able to prove this phenomenon scientifically, and his viewpoints on this issue are based on his feelings, not his reasoning, intellect and understanding.

Considering the above-mentioned criticisms on Schumpeter's theory, an issue that can be put forward as a key improvement point in Schumpeter's theory is

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the manner in which the type of innovation is identified and selected. Of course, it should be mentioned here that regarding the cycle time for creating innovations and technological change, Schumpeter has made this recommendation, based on the theory of trade cycles (Schumpeter, 1927) and the theory of cyclic flow (Schumpeter, 1939). On the other hand, considering the creation of competition between introducing products and services and the reduction in the rate of the product's profitability, manufacturers will be driven toward innovation and technological change, and these changes are broached in three periods as the waves of trade cycles. This Theory can be illustrated in figure 1.

As can be seen in figure 1, the trade cycles theory can represent the possible time of the occurrence of an innovation or a technological change only from a chronological dimension. In this paper, the authors intend to specify the type and the manner of selecting the innovation (based on the five types of innovation mentioned earlier) by developing and expanding Schumpeter's model. These cases include the internal and external variables that exist in the business environment. The later sections of this paper will deal with this issue in more detail.

# Presuppositions Regarding the Development of Schumpeter's Theory

Schumpeter's theory can be improved and raised from the manner in which the type of innovation, which is the basis of entrepreneurship for the creation of value added and economic growth, is selected. Therefore, by considering two general issues regarding the internal and external factors governing the business environment, which can be utilized as parameters and variables, that affect the selection of the type of innovation in the process of entrepreneurship, we started to study and examine these issues in order to develop and improve this model.

Of course, before starting to discuss these factors, we have to mention here that when we use the "entrepreneurship" here, we mean both internal entrepreneurship as well as entrepreneurship in order to start the initial steps in order to create an economic firm.

As can be seen in figure 2, the internal and external business environment of an organization can be regarded as the result of various factors and variables (Stoner and Freeman, 1995). In this paper, in order to conduct a more accurate examination, we have limited the factors that exist both inside and outside the environment to the following four items:

1. The attitude of the stockholders and managers;

- 2. Technological variables of the product;
- 3.Economic variables; and
- 4. Customers and the market.

#### **Internal Environment Factors**

As it was mentioned earlier, the internal business environment variables can be regarded as having an effect on the selection of the type of innovation in entrepreneurship in the following two cases:



(The time basis for the creation of innovation and technological change)



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Figure 2: Parameters that affect the internal and external environment of an organization

### The Attitude of Stockholders and Managers

This item refers to the technological goals of the organization, its attitude toward fulfilling the customers' needs, and how the technological growth of the organization is faring compared to the competitors.

Basically, the stockholders and managers of organizations determine the manner of their encounter with technological parameters based on their own perspective toward the business, and these attitudes can affect their being a vanguard or a follower in technology (Khalil, 2000).

Of course, in order to determine the type of attitude and goal of the organization so that customers' needs are fulfilled and the customers' are satisfied, Kano's theory regarding various attitudes of the customers toward the product can be indicated. In this theory, which is used as a quantitative tool in QFD, the product can be designed and produced in such a way that it will create the following three states in the customers:

1.A delighted customer who has been presented an unexpected product;

2.A satisfied customer who has been presented a product based on his/her own desire;

3. Avoiding the dissatisfaction of the customer by presenting the minimum standard and desire form the product.

In figure 3, the three states of the customer's satisfaction in Kano's theory have shown (Kano, 1984).

#### Technological changes in the product

The nature of the technological changes of the product on which the entrepreneur wants to undertake entrepreneurship and innovation can be regarded as one of the most important factors that affect the selection of the type of innovation. For example, the type of the selected innovation in the individual and organization that wants to have an entrepreneurship project in products with high level of technological change such as computer hardware is quite different from the individual and organization that manufactures a product such as vacuum cleaner with very low levels of technological change. In order to present a more tangible standard regarding technological change, the S-curve technological change curve index is used in this paper (Rogress, 2006).

According to a research conducted by the Boston Consultants Group, companies have different strategies and procedures based on the slant of their technological change curve; therefore, these influences affect the selection of the type of the innovation in the entrepreneurship projet (Narikssen, 2005).







Figure 4: Different forms of S-Curve, as an effective parameter in innovation in Schumpeter's theory of entrepreneurship

# **External Environment**

The external environment can be examined regarding the two parameters of macroeconomics, and the market's level of maturity.

#### The Macroeconomic Situation of the Society

With this parameter, we examined the situation in the target market, and evaluated the economic conditions at the national level, market behavior, and the effect of these parameters on the type of the innovation. In this stage, we will examine the issue from the perspective of international economy. The basis of this paper is established on Schumpeter's definition of entrepreneurship. In 1927, Schumpeter propounded the theory of business cycles and announced that he believes that the effect of innovation on the cycle change is important and fundamental.

In this section of this paper, we have tried to examine the effect of international economic situation, and the recessions and growths of global economy on the type of the entrepreneurship. For example, after World War II, most of the innovations were about introducing new products, but under the present conditions, and as a result of the energy crisis, most entrepreneurship have generally been directed toward replacing fuel and materials. In order to examine the economic cycle, we must first consider the general theory in this regard that, according to figure 5, there are two general cycles of Expansion and Contraction, and furthermore, there are four phases in these two cycles (Rosario, 1999; Philip, 2004). We can generally examine the effect of each of these stages on determining the direction of entrepreneurship (innovation) and the prioritizations that were performed in previous phases.

#### **Conditions for Market Maturity**

The level of maturity of the target market and the psychological effects of the customers can affect the type of the entrepreneurship of the organization, perhaps the best tool to identify this effect is the life cycle of the product (Levitt, 1965; Day, 1981; Box, 1983). Because by considering the date the product was introduced to the market, it will be possible to observe the situation of the product from the viewpoint of the customer, as well as the effect of the situation of the product on its price.

Based on the theory put forwarded by Schumpeter, the innovation that is performed in entrepreneurship should create value added for the customer and reasonable profit for the organization. Therefore, by considering these factors that affect product demand such as price elasticity of the product and its life span, the goal of the organization can affect the type of the entrepreneurship.

# **RESEARCH METHOD**

# The Methodology for Executing Research and Development for Schumpeter's Theory

Considering the presuppositions for the development of Schumpeter's model, which was propounded in the previous section, the executive model is based on the framework of research represented in figure 7 in order to conduct researches and field surveys. At this framework, two types of variables have shown; independent variables, which



Figure 5: The economic cycle's theory, as an effective parameter on the type of innovation in Schumpeter's theory of entrepreneurship



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Figure 6: The product's life curve as (an external) environmental parameter which is effective in the selection of the type of innovation in Schumpeter's entrepreneurship theory



Figure 7: The framework of research to the development of the executive model of Schumpeter's theory in entrepreneurship

are the four explained factors in previous sections (Market situation, Economic cycle as external factors, S-Curve and Objects of technology strategies) and dependent variables, are five types of innovation in entrepreneurship. Another factors and parameters have been considered as intervening variables that don't have any affect in this research.

Firstly for determining the type of relationships between independent and dependent variables statistical analysis has been applied. All variables are covariate, so ANCOVA has been used. After proving to existence of linear relationship between variables, Multi Criteria Decision Making and Operation Research methods implied to designate the type of entrepreneurship for the purpose of creating maximum utility.

### **RESULTS AND DISSCUSSION** Determining the Relationships between Independent and Dependent Variables

In order to perform the experiments in the real world, we selected a statistical community including 150 top entrepreneurial companies. Then based on the executive model, obtained the results that are presented in the Table 1.

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Variable	External variables						Internal variables				
	Economi	c cycle	Market situation			Objectives of technology strategies			S-curve		
	Stagnation	Growth	Introduction	Growth	Maturity	Decline	Generative	Vanguard	Follower	sharp	Obtuse
New product	40	60	35	38	12	15	25	50	25	60	40
New process	70	30	15	20	30	35	10	78	12	23	77
Change in price and material	82	18	7	12	62	16	20	15	65	32	68
New market	56	44	15	12	38	35	15	25	60	56	48
New organization	27	73	7	9	74	14	20	24	58	63	37

# Table 1: The results obtained from the field survey in various entrepreneurships in Schumpeter's theory of entrepreneurship in percents

Table 2: Multivariate	test for	deterring of	significant	linear combin	nation between	variables	(Multivariate	Tests <sup>b</sup> )
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Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta
			·	1		1	Squared
Intercept	Wilks' Lambda	0.806	10.595a	3.000	132.000	0.000	0.194
Market Situation	Wilks' Lambda	0.130	6.553a	3.000	132.000	0.000	0.130
Economic Cycle	Wilks' Lambda	0.779	12.448a	3.000	132.000	0.000	0.221
S-Curve	Wilks' Lambda	0.950	2.308a	3.000	132.000	0.0041	0.050
Objects of Technology Strategies	Wilks' Lambda	0.044	1.917a	3.000	132.000	0.0032	0.042
MS*ES* S-C*Obj Tec		0.982	0.806a	3.000	132.000	0.0028	0.018

a. Exact statistic

b. Design: Intercept + MS\*ES\* S-C\*Obj Tec

The results presented in table 1 can be regarded as internal data for statistical analysis (ANOVA), the target of using of this statistical analysis is to prove of the type of relationship between variables (dependent and independent) for using MCDM and OR models, so in order it has been defined two main questions:

1.Is between levels of independent variable and the dependent variable exist a significant linear combination?

If the test result is positive, the next test will be performed in response to the question.

2. Which levels of each independent variable on all levels of the dependent variables will affect?

In order to answer to the first question, multivariate test has been applied (as shown in table 2).

If the significant is smaller than 0.05 can be concluded that a significant relationship between the independent variable on the dependent variable factors exist. The results in table 2 show all of four factors (internal and external factors of organization) have a significant relationship between different types of innovation of entrepreneurs.

In order to answer to the second question, which related to the effects of each of independent variables on the forming of dependent variable, for answering to this question, the Between-Subjects Effects test has been used (table 3).

In interpreting the results of the table 3 if the bonferroni's number (numbers in column of significant) would be less than 0.017, can be concluded that the independent variables (entrepreneurial innovation) on each of the levels of dependent variables (internal and external factors of organization) had a significant relationship. Other results of this method can also be

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Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
	*New Product	2931.232	3	291.232	13.559	0.000
	*New Process	1914.977	3	114.977	8.965	0.0012
Market Situation	*Change in Price and Material *New Market *New Organization	4660.266 965.248 894.259	3 3 3	460.266 356.258 125.954	6.020 9.254 6.317	0.0008 00.006 0.0000
	*New Product	1315.826	3	115.826	6.087	0.015
	*New Process	7196.472	3	716.472	3.692	0.000
Economic Cycle	*Change in Price and Material *New Market *New Organization	7337.769 6945.325 8436.256	3 3 3	737.769 254.658 524.329	5.777 6.259 4.256	0.009 0.00 0.008
	*New Product	1247.364	3	147.364	5.770	0.00
	*New Process	6355.008	3	655.008	3.067	0.00
S-Curve	*Change in Price and Material *New Market *New Organization	991.289 6549.259 1149.256	3 3 3	991.289 957.364 948.462	2.131 1.368 8.396	0.0011 0.00 0.00
	*New Product	768.621	3	768.621	3.555	0.032
	*New Process	2897.270	3	427.270	2.000	0.160
Objects of Technolog Strategies	*Change in Price and Material *New Market *New Organization	2571.971 4693.256 321.958	3 3 3	721.971 957.256 912.684	2.155 1.954 6.254	0.005 0.00 0.00

# Table 3: Between-Subjects Effects test for determining the level of affecting independent variables on dependent variables

interpreted and evaluated for specific conditions of users of this model.

Now it can be seen that there is significant linear relationship between independent and dependent variable, it means that MCDM and OR methods can be used for optimizing of value added of innovations.

### Determining Mathematical Relationships to Distinguish Priorities and Categorizing Various Entrepreneurships

As was explained in the previous section, statistical examinations can help us determine the effect of the previously mentioned factors and variables on the type of entrepreneurship. It seems that by creating a mathematical relationship using the principles of Multi Criteria Decision Making and Operation Research methods; it can be achieve a general relationship in order to designate the type of entrepreneurship for the purpose of creating maximum utility, while considering the formerly mentioned variables as limits that constrain the above mentioned relationships.

The following lines provide an outline of the important issues that can be used in order to produce mathematical relationships.

#### **Target Function**

Maximizing the benefits obtained from an entrepreneurship project

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#### Subject To

Various product technologies (four kinds considering the slant of the curve "S-Curve")

Various market situations (four kinds considering the Product Life Cycle)

Various strategies of the organization toward the customer (three kinds considering Kano's theory)

Various situations of the global economy (two general kinds considering the economic cycle theory)

Note: The parameters of the target function are the five entrepreneurship situations mentioned earlier.

# Presenting the Model in the Developing Countries in Comparing with Developed Countries

Schumpeter propounded his model for the developed countries, therefore, his model encountered problems in the developing or less developed countries. Below, you will find the summary of 11 instances of failures in applying Schumpeter's theory in developing countries:

1.Difference in the socio economic structure;

2.Lack of creativity;

3.Not being applicable in socialist countries;

4.Not being applicable in different economies;

5. Organizational changes don't need innovation;

6.Attracting innovations;

7.Negligence regarding consumption;

8.Negligence regarding making savings;

9.Negligence regarding external effects and influences; 10.Negligence regarding population growth;

Undesirable growth of inflationary forces.

### **CONCLUSION**

This paper tried to analyze Schumpeter's economic theory of entrepreneurship, and take some effective measures in order to make this theory, which is perhaps one of the most important economic theories in today's world, more applicable. In his economic theory, Schumpeter tries to question the capitalist cycle by the introduction of the entrepreneurial individual or organization to the arena of market competition. He believes that the entrepreneurial individuals or organizations can come out as the clear winner in the market competition because of their ability to carry out innovative destruction so as to make innovations in the five categories which Schumpeter introduced.

In fact, Schumpeter believes that technological change is the most important factor in economic

growth. In order to develop his economic model in the discussions concerning innovation and technological change, Schumpeter examines and describes the factors of time and business cycles, in which fundamental changes in innovation (based on the five categories) happen. Therefore, for those economists who used Schumpeter's economical model, an important and perplexing point in this theory, that shows itself when the theory is applied in the real world, is how the innovations are identified and what type of innovation should be selected. In this paper, a model presented to be used as a guide in selecting the appropriate type of innovation from among the five available options that have been put forwarded by Schumpeter, using four factors and variables that exist in the internal and external environment. Finally, in order to make it easier for the users of this complementary model, a linear programming model presented.

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