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An Entrepreneurial Decision-Making Model: A Case Study of the Electronic Business of Tehran

Golshan Mohammadi[1], Seyed Mojtaba Sajadi[2*], Kamal Sakhdari[2]
1. Faculty of Management and Accounting Engineering, Qazvin Branch, Islamic Azad University, Qazvin, Iran
2. Department of Business, Faculty of Entrepreneurship, University of Tehran, Tehran, Iran

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Abstract

E-businesses play a critical role in today's knowledge-based economies. Despite their increasing portion, e-businesses experience high rates of failure. Therefore, it is of prime importance to identify their decision-making activities encountering outer competitive forces and their internal structural events. In this study, through using the Grounded Theory approach, we analyze interviews conducted by 20 entrepreneurs who have started and run e-businesses, based on an ex-post facto view. We identified preconditions to entrepreneurial decisions to actualize in three steps and their respective sub-activities that are taken during this decision. Decision-making strategies together with contextual and intervening factors that affect the adoption of the mentioned strategies and decision making itself are also identified. Finally, probable outcomes of entrepreneurial decisions are identified and reflected in emerged theory.

Keywords

Decision-making model, Entrepreneurial decision, Business start-up, E-business.

* **Corresponding Author, Email:** msajadi@ut.ac.ir

Introduction

Electronic businesses play a major role in the current knowledge-based economy of the world. These businesses have developed fast and now include an increasing share of economic activities. The recent growth of these businesses is mainly due to their time and cost saving. There are 23 million internet users in Iran, which represents a high potential and the need to increase capacity for electronic businesses (Hatamy, Imanipour, & Zarei Gorgabad, 2015). They experience many challenges with regard to their market and technical issues at the time they start (Huerta, 2008), and these challenges bring high failure rates (up to 70%) to these businesses (Zhao, Zhu, & Gu, 2007). The authors explain that the high rate of e-business failure depends partly on a lack of solid management tools for forecasting, monitoring and evaluating e-business implementation. Accordingly, it is required to examine and assess the effectiveness of e-business strategic models as firms strive toward achieving successful strategic planning.

E-businesses operate in a highly competitive environment (Chih, Huang, & Yang, 2016) and the decisions made by them confronting competitive market forces, determine their success or failure. Among the studies conducted in the field of management and business, decision making has been a broad field for theorizing. Decision making is considered to be the most important management function that the success or failure of any organization depends on it (Tsang, 2004). Although this activity is the most basic managerial activity (Holmin, 2013; Satyadevi, 2009) for business managers at each level, entrepreneurs adopt different roles than those of managers (Baum et al., 1993; Onstenk, 2003).

In addition, as we consider decision making as an ability, according to Penrose (1959), manager and entrepreneur have different competencies and thus, despite the overlaps, especially in the business management, the decisions that an entrepreneur makes is fundamentally different from those of managerial decisions (Penrose, 1959). Entrepreneurial decision making is the key factor which is a stimulus for the process of creating a competitive advantage, and this is due to the distinctive capabilities entrepreneurs own in the area of exploiting market opportunities which have a high potential for value creation

(Lindblom, Olkkonen, Kajalo, & Mitronen, 2008). Thus, the decision maker (the entrepreneur), the context in which the decision is made (the type of organization), and what is aimed by the decision (opportunity) is different from the other decision-making areas. These differences lead to a variation in theories and models proposed to understand entrepreneurial decision-making.

Entrepreneurial decision-making refers to the choices that entrepreneurs make when they encounter entrepreneurial opportunities (Santos, Caetano, Baron, & Curral, 2015, Wei & Hisrich, 2016). It is an approach in which entrepreneurs use cognition to review, judge, and make choices in their entrepreneurial activities, such as opportunities assessment, creation and growth of business (Geessinck, 2014). Hence, understanding the decision-making body of entrepreneurs is of great importance to explain the nature of the entrepreneurial activity and its impact on outcomes of a business.

Although there is a robust body of literature around the topic of decision making, Bucar and Heisrich (2001) suggest that research in entrepreneurial and managerial fields should lead to the creation of new knowledge focusing on the process of decision-making (Bucar & Hisrich, 2001). A definition of a process of entrepreneurial decision-making involves the process which is composed of activities and a timeline in which the individual acts as an entrepreneur (Torikka, 2013). In other words, the time should be seen alongside the activities. A preliminary study of research literature shows that four main parallel flows are in entrepreneurial decision-making attitudes. The first group sought to determine the decision-making approach in two groups of causal and effectual decision making (Kalinic, Sarasvathy, & Forza, 2013; Sarasvathy, 2001). The second group is seeking to establish a compromise between the two causal and effectual approaches (Maine, Soh, & Dos Santos, 2015). The third group seeks to determine the factors influencing the entrepreneurial decision-making process (Gibcus & Van Hoesel, 2008; Ivanova & Gibcus, 2003). The fourth group regards studies that begin their work from entrepreneurial minds to final choices that entrepreneurs make (Carr & Blettner, 2010; Forlani & Mullins, 2000; Pech & Cameron, 2006) and finally, the fifth group considers the studies that seek to link

the mind and the environment into the process of decision-making (Alon, Deng, & Wang, 2010 Gibcus, Vermeulen, & Radulova, 2008).

Given that an individual (entrepreneur) and opportunity cannot be considered independently from each other (Sarason, Dean, & Dillard, 2006) and the nature of the entrepreneurial process is nothing more than a relationship between these two (Cha & Bae, 2010), so they cannot be considered as institutions independent of their environmental context (Mole & Mole, 2010); therefore, the need to provide a comprehensive model for entrepreneurial decision-making arises. That model can fill the gap by determining events in decision-making and strategies of an entrepreneurial institute are taken in the process of creating an electronic business (stage-by-stage and temporal), along with an effective field on these events and its consequences.

Literature Review

Decision-making is defined as a choice between a set of available options of activity (Paranjpe, 2016; Stevens, 2012). In another definition, decision-making is defined as a choice between a number of options in order to achieve a specific goal (Justus, Jooste, & Nangombe, 2016). Such definitions have a static approach to decision-making and limit decision-making to a single point of view. Nevertheless, a number of studies provide more comprehensive definitions and consider a process approach to decision making. Simon (1960) proposes a three-stage model for decision-making. From his point of view, decision-making takes place in three phases: 1) Intelligence phase: this phase consists of finding, identifying and formulating the problem or situation under which the decision is made (decisions on what should be decided), 2) Design phase: during this phase, alternative solutions are created. In this phase, a broad research activity is conducted to find available options. The goal of the decision-making must be determined in this phase. 3) Choice stage: in this phase, the options created in the previous phase are evaluated and one of them is selected. The final product of this phase is a decision that can be implemented (Simon, 1960). But the mentioned approaches are effective in the field of strategic management and their application in the field of entrepreneurship does not yield much about the nature of entrepreneurial issues that decisions are made to solve them.

One of the most prominent focus areas in the realm of

entrepreneurial decision-making is categorizing entrepreneurial decisions into 1) causations and 2) effectuation approaches (Maine, Soh, & Dos Santos, 2012). According to Sarasvathy (2001), causation approach is a goal-oriented and well-informed decision-making approach. An entrepreneur who has adopted causation approach starts with a predetermined goal, focuses on expected outcomes and competitive analysis, exploits previous knowledge, and tries to predict an uncertain future (Maine et al., 2015). In contrast, effectuation is the approach in which the entrepreneur considers a set of distinct features and chooses among the possible effects those ones that can be created with the existing set of possibilities (Evers & O'Gorman, 2011).

To compare potential benefits with potential costs, Ivanova and Gibcus (2003) state that entrepreneurs conduct a cost-benefit analysis to test the positive value of the current expectation of each option. If the result is positive, the strategic decision would be applied (Campbell, 1992; Ivanova & Gibcus, 2003). Carr and Blettner (2010) found that a high level of illusion of control among the firm' founders negatively affects entrepreneurial decision quality. In addition, they found that the negative impact of illusion of control on decision quality is greater when the stress of time and previous experience is higher. Therefore, the prior experience of founders is important in deciding. When fundamental decisions are to be made, founders who have a higher level of the illusion of control may easily be trapped in their cognitive biases and make weaker decisions (Carr & Blettner, 2010).

Gibcus and Van Hoesel (2008), in an examination of the strategic entrepreneurial decision-making process, show that there are stages and critical moments in the decision-making process of the small and medium-sized enterprises (SMEs). According to them, the entrepreneurial decision-making process has three stages. These three stages include 1) the emergence of the idea, 2) the elaboration of the idea, and 3) the implementation of the idea. The two mentioned critical moments also are: 1) triggering activities of informal decision, and 2) formal decision (Gibcus & Van Hoesel, 2008). Forlani and Mullins (2000), believe that businesses choose from existing business opportunities. These choices are affected by the existing risks in these options. Different perceptions of entrepreneurs from these risks lead to a

difference in their individual tendencies to accept these risks. A significant impact of entrepreneurs' difference on the degree of risk-taking tendency has been found in new business choices (Forlani & Mullins, 2000).

Entrepreneurs are constantly looking for informational clues of opportunities to meet internal motivations, such as the need for success and competition. A study by Patch and Cameron (2006) illustrates an entrepreneurial mindset that is stimulated by excitement and joy. Those entrepreneurs of this mindset are motivated by those business challenges that match their skills, knowledge, and abilities. Business-related information signals are searched and used to calculate the potential for profitability, risk level, and implementation costs. Ultimately, the final calculations are also filtered out. In the calculation process, the benefits and outcomes that are potentially positive are considered having higher weights and potential difficulties are considered as challenges that must be overcome (not the difficulties to be avoided) (Pech & Cameron, 2006).

The process view, as we discussed earlier, is one of the frameworks of the entrepreneurial decision-making. This activity is also viewed from the institutional perspective. Taking this stance, Alon et al. (2011) believe that the institutional environment is an external factor for entrepreneurial motivation, which, along with individual factors (internal motivator), affects entrepreneurial expectations. These expectations lead to the creation of entrepreneurial needs (or the effect on these needs), and entrepreneurial motivation, along with individual features, leads to the adoption of an entrepreneurial decision (Alon et al., 2010). Kalinic et al. (2013) examined unexpected entrepreneurial decisions in the international environment. These authors found that the context in which entrepreneurs operate during the internationalization process is complex and may impose high levels of uncertainty. Under such conditions, entrepreneurs tend to adopt effectual logic in decision making (Kalinic et al., 2013).

Gibcus et al. (2008) linked the institutional factors to entrepreneurial decisions by stressing that the entrepreneurs interacting with the environment obtain the motivation to enter the strategic decision-making process. Innovation is achieved from the

interaction between uncertain environment and decision making. The innovation determines profits and losses (Gibcus et al., 2008).

Using a qualitative approach, Maine et al. (2015) consider the causation and effectuation approaches as two opposing approaches in decision-making that lead to the creation or the identification of the opportunities. Through the results, this paper revealed the iterative nature of opportunity generation and of decision-making modes as entrepreneurs respond to their evolving environment and to the level of regulatory and funding constraint, such that entrepreneurs can shift from effectuation to causation, remain in one particular mode, or adopt a combination mode. They also recognized that adopting effectuation approach does not "always" lead to the creation of an opportunity.

Reymen et al. (2017) investigated the decision-making logics used by new ventures to develop their business models. The authors focused on the logics of effectuation and causation and how their dynamics shape the development of business models over time. They found that the effectual decision-making logic was used dominantly to generate a viable value proposition for a specific customer segment. Interested readers are invited to read a recent review done by Shepherd et al. (2015) regarding the entrepreneurial decision making.

Considering the reviewed paper, the main contributions of this paper can be elaborated as follows:

- Developing an entrepreneurial decision-making model in case of the extreme decision-making context faced by many entrepreneurs such as high uncertainty, time pressure, emotional charge, and consequential extremes,
- Developing a holistic decision-making model based on Grounded Theory approach that includes the predisposing factors, background, strategies and consequences of entrepreneurial decision making, and
- Validating the proposed approach on the e-business sector in Tehran, Iran.

Research Methodology

The present study is a basic study in terms of the purpose, and from the perspective of the data collection method is a descriptive study because

the variables are not manipulated by the researcher. In this study, all entrepreneurs who had started the e-business /or managed them in the time of data collection in the city of Tehran have been selected as the statistical population of the research. For sampling, the snowball approach is used and has continued until the research structures reach the saturation level. A total of 20 interviews were conducted. The age of interviewees is between 35 to 45 years containing both men and women. The majority of them have higher education with 14 years of experience in average, while the managers have initiated their e-business between 2 to 5 years. The data used for this study was gathered by using in-depth interviews. The data was analyzed using three coding mechanisms as open, axial and selective coding mechanisms. The main questions of this research are: 1) what are the features of an entrepreneurial decision-making in the e-business of Tehran, 2) what are the conditions to take entrepreneurial decisions, 3) what are the strategies for an entrepreneurial decision-making, and 4) what are the consequences of an entrepreneurial decision-making.

The percentage of the face and content validity for the tool was 85.14%, and the percentage of inter-coder reliability was 76%. This amount is considered well higher than the threshold (0.6) presented by Moss et al. (1998). The research method used in this study is the Grounded Theory. The reason for choosing this method is the inadequacy of theories in the research literature (Edwards-Joseph & Baker, 2014; Ellis & Levy, 2009) and the need to understand a process (Basci, 2016; Brown, Chen, Mitchell, & 2007; Fatai O, Faqih, & Bustan, 2014; Murray & Fu, 2016). Data analysis was performed in three stages: open coding, axial coding and selective coding (Strauss & Corbin, 1994) using Atlas.ti V6 software.

Results and Findings

In the first step of data analysis, open coding is performed. Samples of identified open coding and their repetition in interviews are presented in Table 1. Open coding aims at developing substantial codes describing, naming or classifying the phenomenon under consideration. Open coding is achieved by segmenting data into meaningful expressions and describing them in single words or short sequence of words. Finally, open coding is a process in which basic

ideas in the data are identified, named and categorized (Baskerville & Pries-Heje, 1999).

The list of Sample of Identified Open Coding (SOIC) of Table 1 is as follows: '1': Providing the original product to the market; '2': Loss of financial resources due to failure; '3': Extracting the reasons for the failure of similar businesses; '4': Persons talent spotting; '5': Use of consultant services; '6': Market information; '7': Decision maker's confidence in decision's outcomes; '8': Validation of the received information from the environment; '9': Validation of the decision through feasibility analysis; '10': Validation of the decision based on the main purpose of the business; '11': Validation of the identified need from others' opinion; '12': Trust in the structure of the decision team; '13': Corrective action on the decision-making process; '14': Benchmarking from International Business; '15': The role model in the initial decision; '16': Possible future growth of the plan; '17': Feasibility study through theobservation of successful and unsuccessful samples; '18': Transferring experiences from traditional to modern systems in decision making; '19': Creating initial income; '20': Creating alternative options.

Table1. Open coding results (sample codes)

Row	SIOC*	Interview Number																				Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	'1'	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	5
2	'2'	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4
3	'3'	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	5
4	'4'	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	5
5	'5'	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	10
6	'6'	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	5
7	'7'	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	5
8	'8'	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	5
9	'9'	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	5
10	'10'	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	5
11	'11'	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	5
12	'12'	1	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	5
13	'13'	0	0	1	1	0	1	0	0	1	1	1	1	0	0	1	1	0	0	1	1	11
14	'14'	0	1	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	1	1	0	9
15	'15'	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	4
16	'16'	0	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	5
17	'17'	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	5
18	'18'	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	5
19	'19'	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	4
20	'20'	1	0	0	1	1	0	0	1	1	0	1	0	0	0	0	1	1	0	0	1	9

In the second step, axial coding was done, after integrating codes that had semantic overlap. In other words, identifiable open codes were attributed to a higher level of abstraction. Axial coding is carried out in five main categories, which include: causal conditions, context and intervening conditions, phenomenon (or core category), strategies of action, and consequences (Bohm, 2004). Finally, in the third step of analytic operation, selective coding is conducted, by which the identified classes are linked to the core category in order to provide the basis of Grounded Theory (Babchuk, 1996). The refined results of categories and dimensions resulted from selective coding are presented in Table 2. In Diagram 1, the final model of the research is presented.

Table2. Selective coding results

Class	Subcategories (from selective coding)	Samples of codes in the category
Preconditions of Business Creation Decision Making		Decision maker's confidence in the outcomes of decision
		The role model in the initial decision
		Possible future growth of the plan
		The decision to continue the business that seems to be failed
		Sleep on the issue in the period after the initial failure
		Access to financial resources
Business creation decision making	Identification (emergence) of the idea	The emergence of new technological trends in the market
		Screening emerging issues for decision-making or not decision-making about them
		Transferring experiences from traditional to modern systems in decision making
		An initial idea generation by the entrepreneur
		Ideas from everyday problems
		Analysis of information and market trends
		Previous learning
		Entrance of new ideas
		Analytical decision making
		Intuitive decision making
	Idea evaluation	Scenario building before creating
		Validation of the identified need from others' points of view
		Creating alternative options
		Financial analysis of the project
		Market need assessment
		Informing members about the issues
		stakeholder's Analysis of decision
		Analysis of competitors
		Project time analysis
		Scenario analysis for the idea presentation session
		Analysis of weaknesses in decision making
		Required human resources analysis to implement the decision
		Determining the decision parameters
		Determining the failure consequences
		Determining the probability of failure

Table2. Selective coding results

Class	Subcategories (from selective coding)	Samples of codes in the category
		Determining exit strategy
		Summarizing the opinions of the members by the entrepreneur
		Expected market size
		Maintaining the coherence of the decision team
		Identification of customers
		The appearance of the negotiating headlines in the negotiation session
		Conflict management
	Idea implementation	Initial financing of future decisions
		Decision on start mode
		Generating initial income
		The decision to change the scope of activity
		Deciding market entry mode
		Deciding on the proportion of equities
		Decision on the amount of initial investment
Decision strategies to create		Talent spotting
		Use of outside consultancy services
		Validation of the decision based on the main purpose of the business
		Benchmarking of International Business
		Feasibility analysis through the observation of successful and unsuccessful samples
		Redefining dimensions of the business model continuously
		Sharing decision making knowledge among members
		Deciding to build or outsource
		Determining the number of decision makers based on the specialty of the problem
		Changing the background of the activity resulting from the failure experience
		A general agreement on decision making
		Delegation of decision-making based on expertise
		Democracy in decision making
		Convincing audiences at the initial steps of decision making
		Studying the history of decision activity
Context of business creation decision		Trust in the structure of the decision team
		Familiarity with teamwork
		Decision maker's previous experience (success and failure)
		Conflict over the division of benefits
		Status of decision makers
		Industry history
		Business startup history
		Shared work experience of members of decision-making team
		Organizational flat structure
		Degree of risk taking of decision maker
		The role of accelerator institute in reducing uncertainty
The consequences of decision to create		Providing the unique product to the market
		Loss of financial resources due to failure
		Corrective action in the decision-making process
		Maturity of the business
		Becoming a decision advisor for other businesses
		The decision to terminate based on market feedback
		Scenario based on the analysis of post-failure events
		Decreasing the cost of incorrect decisions

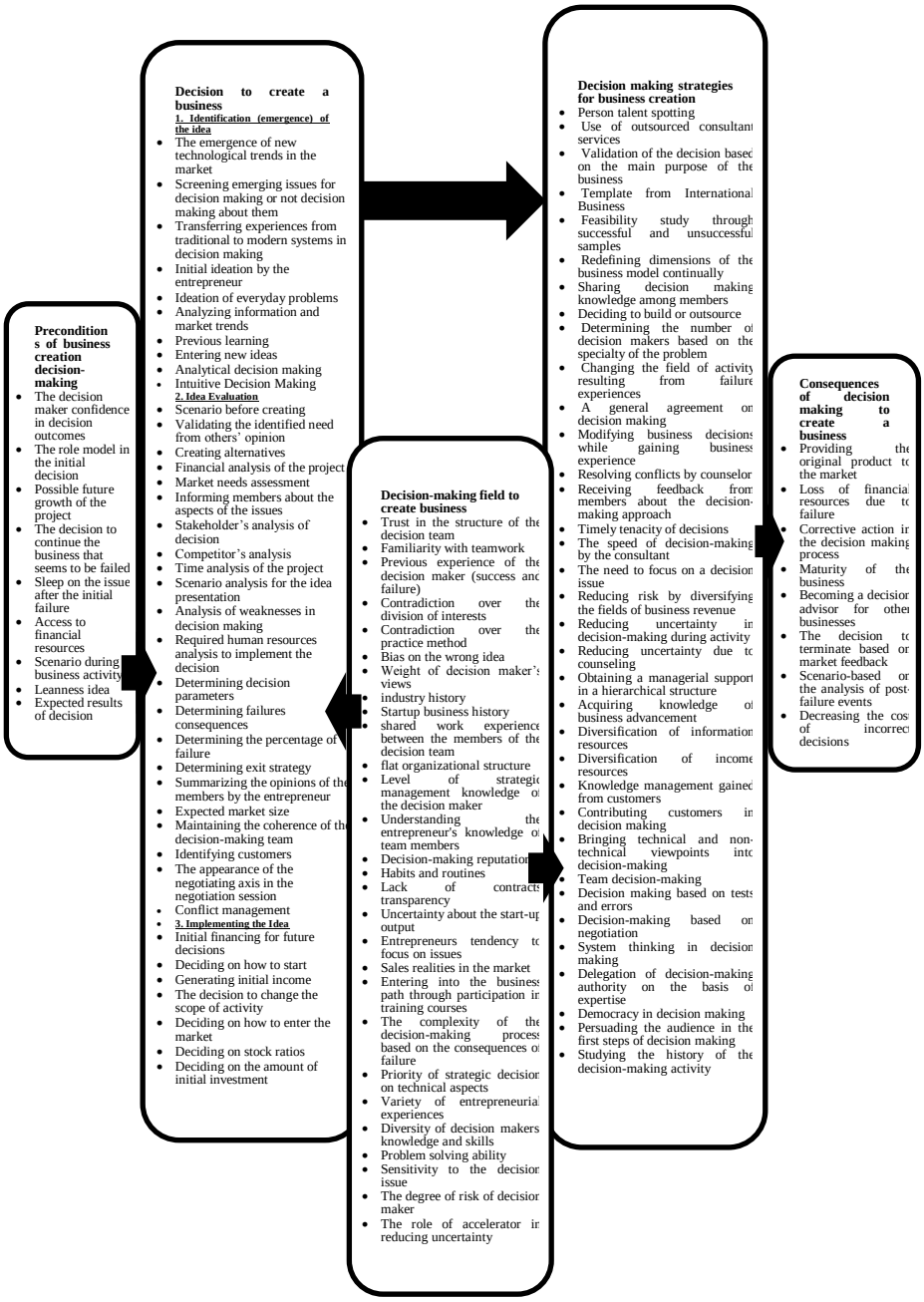

Diagram1. The final model of the Grounded Theory: The decision to set up a business

Discussion

As described at the beginning of this study, the present study was conducted in order to provide a comprehensive model of entrepreneurial decision making that can explain decision-making events and its strategies in the process of creating an e-business, timely and along with an effective context for these events and its implications. In this study, 20 entrepreneurs who began to set up an e-business or manage it in the city of Tehran and were responsible for making strategic decisions related to that business were interviewed. The theoretical path is as follows: there are preconditions for creating an electronic business that without them, the entrepreneurial decision to create an e-business does not take place and, basically, the entrepreneur does not enter such a decision.

These decision factors led to creating a business; the decision is based on research findings in three phases. The three phases of the entrepreneurial decision to create an e-business were: 1) the emergence of the idea, 2) evaluation of ideas, and 3) implementation of ideas. The realization of these three phases involves adopting strategies by which entrepreneur links the decision to its outcomes. For an entrepreneur in the field of electronic business, decision-making strategies for creating e-businesses encompass a wide range of options todecide from among. The major part of the identified strategies in this study is new findings in the area of decision-making in the case of creating an e-business.

Despite the fact that Scenario planning has a high variation among these strategies, the use of these strategies is not equal and inclusive and is determined by the influence of underlying and intervening factors, the composition and extent of their use. The context and intervening factors influence both the core phenomena of research (decision making) and decision-making strategies. The context and intervening factors determine the manner in which decision-making strategies lead to the consequences of the decision. The implications of decision to create an e-business that was identified in the present study include a set of optimal outcomes resulting from both the favorable and unfavorable outcomes caused by failure as well as the modification of the results and changing the decision into a new field of activity, that by no means can be considered as a null finding.

Conclusion

E-businesses play a critical role in today's knowledge-based economies. These businesses have developed fast and include an increasing share of economic activities. Despite their increasing portion, e-businesses experience high rates of failure. Therefore, it is of prime importance to identify their decision-making activities encountering outer competitive forces and their internal structural events. This paper developed an entrepreneurial decision-making model in case of the extreme decision-making context faced by many entrepreneurs such as high uncertainty, time pressure, emotional charge, and consequential extremes. For this aim, a holistic decision-making model based on Grounded Theory approach is developed that includes the predisposing factors, background, strategies and consequences of entrepreneurial decision making. For validating the proposed approach, the interviews are conducted by 20 entrepreneurs who have started and run e-businesses, based on an ex-post facto view. Finally, important factors impacting the entrepreneurial decision-making of the e-business in Tehran were found out and probable consequences were discussed. Through this research, following suggestions are provided:

- It is suggested that entrepreneurs' uncertainty about decision outcomes will be reduced in the area of business policy, especially in the field of e-commerce, by improving the ease of business variables.
- It is suggested that policy makers, by adopting supportive policies of the businesses that have failed, provide continuity of their activities.
- It is suggested that entrepreneurs, before deciding to create an e-business, evaluate the future growth of their projects and explain their business ideas in economic terms and in the form of possible growth patterns.
- It is suggested that entrepreneurs develop specific scenarios before they begin to decide on the success or failure of the decision.
- It is suggested that in future studies, the truth of the findings of this study should be evaluated in other businesses, especially in the field of services.

- It is suggested that in future studies, in addition to business creation, decision making for business management and related events should be analyzed.
- Due to the fact that the researcher encounters numerous failures, it is suggested that in future studies, appropriate exit strategies for failed e-businesses be studied.

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