

# FACTORS AFFECTING PERCEPTIONS OF MANAGERS / OWNERS OF SMALL AND MEDIUM SIZED BUSINESSES FROM INVESTMENT RISKS IN E-BUSINESS

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## *Abstract:*

*Small and medium sized enterprises are considered as the most influential sectors of the countries' economy that are currently moving towards e-business and facing with some risks in this regard. According to the risk perceptions of managers / owners, each enterprise decides to invest in e-business. This research aims to investigate factors affecting perceptions of managers / owners of SMEs in regard with these risks. To collect field data, a questionnaire with 26 questions was developed according to Grant et al. The study population included small and medium sized enterprises in Tehran which their staffs are less than 100. The sample size was achieved 330 using stratified method. After evaluating validity and normality of data distribution, Kruskal-Wallis test was applied using SPSS to investigate research hypotheses. The research results indicated that perceptions of managers / owners of these risks are different in regard with three variables of this study.*

*Keywords: Small and Medium Sized Enterprises, e-Business, Risk, Risk Perception*

## **1. Introduction**

In recent years, the role and importance of small and medium sized enterprises have been increasing both in industrialized and developing countries. With the advent of new technologies in manufacturing, some changes have been occurred in methods of manufacturing, distribution and organizational structure of enterprises and small and medium sized enterprises have been more important than before. Hence, small and medium sized enterprises can be considered as appropriate contexts to develop competitive industries. However, recent studies show that many small and medium sized businesses react slowly in capacity building for utilizing of technology.

Use of e-commerce and generally investment in new technology in an organization or enterprise are accompanied by some risks which should be reduced to avoid additional costs. The first step to reduce and minimize risks is to

identify them. The main issue is that managers and specialists of different fields in small and medium sized enterprises may be less aware of risks of investing and also how to make use of technology for various reasons than their counterparts in larger enterprises. Therefore, first, these risks should be identified and perceived, then, some decisions be made in regard with investing in related technology (Grant et al. 2013).

## **2. Statement of the problem**

Both field and amount of investment are important and vital for each company. However, any wrong decision made by the owner of small and medium sized enterprise leads to destruction and bankruptcy in economic downtown. Investing in a particular technology is vital for owner of small and medium sized enterprise because it has a potential effect on the company's competitiveness in terms of both scale and duration. Acceptance of e-commerce will lead to tangible financial benefits for small and medium sized enterprises in the field of development of target customers and e-marketing (Johnston et al. 2007). During this process, Pena et al. (2011) showed that technology has a positive impact on marketing. Therefore, it seems that this competition helps small and medium sized enterprises have better performance than large ones and increase e-business potentials (Chong & Pervan, 2007). The use and value of investments in technology and innovation should be considered in small and medium sized enterprises before anything else, so that companies can focus on this category that what technology is and what it can do for the company (Haddara & Zach, 2011).

Most likely, making decision for selection and implementation of technology differs in small and medium sized enterprise and large ones. Typically, smaller companies have a flat organizational structure (Levy & Powell, 2005) mainly focused on managers / owners (possibly the same person) and may be responsible for different roles. Core competencies associated with existing technology in larger companies may not be available for small and medium sized enterprises. Also, managers / owners of small and medium sized enterprises may be less aware than their counterparts in larger companies in terms of operational and strategic benefits of technology (Malhotra & Temponi, 2010; Levy et al. 2011).

This approach emphasizes on the perception of e-business in making decision in regard with investment in small and medium sized enterprises, which is a combination of objective and subjective assessments of risk. The researcher assumes that factors affecting owners of small and medium sized enterprises differ from factors affecting their large counterparts because small and medium sized enterprises cannot usually affect the market price and also have less comprehensive information for making decision. According to the research carried out by Grant et al., 23 risks which managers / owners of small and medium sized enterprises face with when investing in e-business, were investigated. Taking this into consideration, this study investigated this category that whether perception of managers / owners differs when deciding to invest in e-business or not according to e-business experience of enterprise, organizational status of the individual and type of industry involved in.

### 3. Review of theoretical framework and related literature

Definition of small and medium sized enterprises differs in various countries and it depends on economic and industrial conditions. Some criteria used to determine the type of industry (small, medium and large) are as follows: number of its personnel, capital, total assets, sales volume and production capacity. The most common measure among them is the number of personnel which is determined differently from one country to another. In Iran, according to the studies conducted and based on the websites of "Central Bank of the Islamic Republic of Iran" and "Central Bank Statistics Bureau", businesses have defined as follows: Units with fewer than 10 employees is considered as "micro", between 10-9 employees as "small", between 50-99 personnel as "medium" and more than 100 staffs are called "large" enterprises.

Due to the research environment and objectives of researchers, e-business has been defined in various ways. However, e-business can be generally defined as follows: "The process of buying and selling a product or service using electronic transfer of data via the Internet and web" (Grandon & Pearson, 2004). WTO defines e-business as follows: production, distribution, marketing, sale or delivery of product and service by electronic equipment.

In investigation process of e-commerce adoption by small and medium enterprises, two internal and external factors are effective on the acceptance of this kind of commerce. Internal factors affect e-commerce adoption within the enterprise and include features of enterprise, information technology knowledge of executive managers, previous collaboration, views and trade. External factors affect ecommerce adoption outside the enterprise and include infrastructures, factors related to commerce, competitiveness, government support, comparative advantage, cost and compatibility (Dholakia, 2004).

Perceived risk is considered as the consumer belief in uncertain and adverse potential results which may be obtained from online business (Kim et al. 2008). Perceived risk is in fact perception of managers / owners of enterprise in regard with uncertainty of the potential consequences of investing in technology. It should be noted that risk perception is a combination of subjective and objective assessments that contribution of subjective elements are more (Littler & Melanthiou, 2006).

In a study titled Identifying and Prioritizing Risks of Investing in High-tech Projects, Case Study: Nanotechnology, Mortezaia & Fallah Shams (2012) pointed out Iran's weakness in the field of advanced technologies, especially nanotechnology and stated that increase of activities and investment in this field are factors affecting the development of these enterprises. According to the opinions of the experts, they placed 23 factors affecting investment risk in nanotechnology companies in three areas of business, financial and political risks and determined the priority of risks using Friedman analysis of variance. The results show that business risks were the most important one and political and financial risks were respectively ranked in second and third positions.

In a research titled perception of small and medium sized enterprises in England from E-business risks, Grant et al. (2013) investigated the risk perception of shareholders and key managers of small and medium sized enterprises in England when investing on technology. After analysis of 125 questionnaires gathered, they found out that there is no difference between risk perception of managers / owners due to type of industry in which they work; however, both e-business experience and status of decision makers in company are effective on risk

perception. One implication of these findings is that interventions of different groups of shareholders / owners, information technology specialists and other people in this section and determination of policies of small and medium sized enterprises should be done more sensitive and targeted.

In a research titled e-business, small and medium sized enterprises and risk, Sukumar & Edgar investigated risk perception of five groups of shareholders of small and medium sized enterprises and members of e-business clubs. They concluded that technological risks associated with lack of awareness and security threats and strategic risks were significant at the highest level. The risk of lack of appropriate leadership was placed on the second level of importance. Customer-related risks, outsourcing and dependence on external institutions were placed on the third position and risk of tax and laws gained the lowest level of importance.

In a study titled A Conceptualization of e-Risk Perceptions and Implications for Small Firm Active Online Internationalization, Pezderka & Sinkovics (2011) claimed that due to increase of Internet influence and especially the facilitating effect of Internet on small enterprises, the need for international conceptualization of e-risk has been increased. They classified risks in three groups of traditional, administrative and online; they believed that operational and administrative risks are more serious and obvious than traditional risks. They have been mentioned in the literature of ebusiness. At first step, an enterprise should look for a solution to cover these risks.

#### **4. Methodology of research**

From aim point, this research is applied. The purpose of applied research is development of practical knowledge in a particular field. From data collection point, it is survey-descriptive research which aims to investigate factors affecting perception of managers / owners of small and medium sized enterprises from investment risk in e-business in Tehran.

Study population included small and medium sized enterprises in Tehran with 100 personnel or less, and official website which are independently working in accordance with commerce laws. A total number of 2327 enterprises were extracted from websites of the Ministry of Industry and Mine and Trade (enamad.ir). Sample size was 330 small and medium sized enterprises based on Cochran's formula. Each enterprise compiled a questionnaire. Stratified random sampling method is applied in this research. In this regard, based on the relative frequency of 15 industrial groups in the society, first, the sample size has been determined in each industrial group. Then, a total number of enterprises were selected using simple random sampling method to be investigated.

In this research, to collect field data, Grant et al. inventory was applied. To measure the appropriateness of data collection tools, two features of validity and reliability are considered. After rendering the standard questionnaire of Grant et al. to Persian and preparing it for use in the research, the researcher consulted with experts and professors in this field; hence, the validity used in research tools according to the qualitative evaluation of factors and based on experts' opinions is face validity. To measure the reliability of the questionnaire, 40 enterprises were randomly selected and then were investigated. After collecting the questionnaires, Cronbach's alpha was calculated 0.91 in regard with risk perception factor which was indicating the appropriate reliability of research tool.

## 5. Findings

In this part, first, demographic variables of research are investigated. Table 1 shows a summary of results obtained from demographic findings.

**Table 1**

**Demographic variables of research**

gender	Level of education	Number of personnel	Experience	
man	Associate degree and lower	10-49	More than 6 years	38
			More than 3-6 years	113
woman	Bachelor's	Less than 10	More than 1-3 year	138
			1 year and less	41
range	Ph.D.	50-99		
			Master's	147
				87
Organizational status				
			Other occupations	14
			Head of operations	26
			Manager of other sections	67
			IT manager	46
			Head of IT	19
			Chief executive director	88
			Head of finance section	39
			Partner/shareholder	22
			executive officer	9
Type of industry				
			wholesale	27
			Drinks and food	10
			Agriculture and fisheries	11
			Health services	25
			Advertising	19
			Hospitality and tourism	24
			Construction and mining	12
			Financial services	22
			Software supplier	30
			Retail	49
			Advanced technology	15
			Educational	41
			Public section	21
			Professional and consulting services	18
			Manufacturing	6

Kolmogorov-Smirnov test was used to test normal distribution of e-business risks. Since significance statistic of perceived data of investment risks in e-Business is less than 0.05 (0.037), the hypothesis of normality of distribution is rejected. To analyze data, Kruskal-Wallis test (by SPSS) was applied. In this test, the difference between values of a variable among multiple dependent populations is investigated. Since this test is usually considered at 0.05 error level, to understand the difference among samples, significance statistic should be less than 0.05.

Hypothesis 1. Investigating the effect of firm experience on manager / owner perceptions of investment risks in e-Business

**Table 2**

**Results of Kruskal-Wallis test to investigate risk perception based on experience factor**

	Risk perception
Chi-square	14.205
Degree of freedom	3
Significance level	0.003
<p>The first hypothesis is approved; therefore, perceptions of managers / owners of small and medium sized businesses are different with regard to e-business experience.</p>	

**Table 3**

**Ranking mean of risk perception with regard to e-business experience**

Risk perception		
Experience variable	Frequency (N)	Decision-making statistic (ranking mean)
1 year and less	41	140.48
More than 1-3 years	138	160.53
More than 3-6 years	113	178.19
More than 6 years	38	191.18
	330	

Hypothesis 2. Investigating the effect of organizational status on manager / owner perceptions of investment risks in e-Business

Table 4

**Results of Kruskal-Wallis test to investigate risk perception based on organizational status factor**

	Risk perception
Chi-square	10.240
Degree of freedom	8
Significance level	0.005
The second hypothesis is approved; therefore, perceptions of managers / owners of small and medium sized businesses from investment risks in ebusiness are significantly different with regard to organizational status.	

Table 5

**Ranking mean of risk perception with regard to organizational status**

Risk perception		
Experience variable	Frequency (N)	Decision-making statistic (ranking mean)
executive officer	9	148.17
Partner/shareholder	22	165.89
Head of finance section	39	174.35
Chief executive director	88	162.40
Head of IT	19	182.56
IT manager	46	141.94
Manager of other sections	67	113.36
Head of operations	26	169.48
Other occupations	14	206.21
	330	

Hypothesis 3. Investigating the effect of type of industry on manager / owner perceptions of investment risks in e-Business.

**Table 6**

**Results of Kruskal-Wallis test to investigate risk perception based on industry type**

	Risk perception
Chi-square	5.824
Degree of freedom	14
Significance level	0.036
The third hypothesis is approved; therefore, perceptions of managers / owners of small and medium sized businesses from investment risks in e-business are different with regard to industry factor.	

**Table 7**

**Ranking mean of risk perception with regard to type of industry**

Risk perception		
Experience variable	Frequency (N)	Decision-making statistic (ranking mean)
Manufacturing	6	212.17
Professional and consulting services	18	155.13
Public section	21	182.94
Educational	41	170.14
Advanced technology	15	189.30
Retail	49	165.58
Software supplier	30	148.70
Financial services	22	122.84
Construction and mining	12	178.31
Hospitality and tourism	24	165.24
Advertising	19	132.17
Health services	25	155.08
Agriculture and fisheries	11	200.32
Drinks and food	10	189.68
Wholesale	27	152.18
	330	



## 6. Conclusion

The results of first hypothesis showed that younger businesses perceive more risk. Experienced businesses experience less risk due to having loyal customers and a good and appropriate brand name as bases of support, better understanding of rules and regulations, being in contact with different suppliers, individuals and organizations to do better and faster, and getting more familiar with e-business environment and its different situations through experiencing. The results of this hypothesis were consistent with findings of the research conducted by Grant et al. (2013) in England. They concluded that younger businesses perceive less risk and it can be mentioned in terms of cultural, economic, environmental and individual conditions. As it was mentioned, risk is a subjective category that person perceives various issues due to the situation and circumstances in which he is.

The results of second hypothesis showed that due to organizational status, individuals have different perceptions of risks. This result is consistent with findings of Grant et al. (2013). They also concluded that people have different perceptions of e-business risks in different organizational statuses.

The results of third hypothesis indicated that due to the type of industry in which people are involved, they have different perceptions of these risks. This result was inconsistent with findings of Grant et al. (2013). In research carried out by Grant et al., type of industry has no effect on perceptions of managers / owners from investment risks in e-business and all had almost equal perception of e-business risks. Differences can be due to cultural, environmental and social differences in business atmosphere in countries.

This study offers four major suggestions to improve our understanding of technology risks in small and medium sized enterprises. Based on above-mentioned categories, the first aid is more technical development of technology-based studies in small and medium sized enterprises.

Second, perception of reported risk is strongly influenced by the characteristics of respondent. For example, managers / owners of small and medium sized enterprises with less history and limited experience in regard with e-business perceive more risk and act more cautiously than those who are more experienced. Organizational status of respondent and type of industry also affect the perceived risk.

Third, it promotes attempts made by previous researchers to provide a classified framework of e-business risks for small and medium sized enterprises. For example, it provides a checklist of the most important risks to inform managers / owners for investing in technology. It is also considered as a benchmark for managers / owners who compare their perceptions of risk with others in a similar business environment; such as enterprises which are similar to them in terms of size, experience or type of industry.

The fourth one relates to public policies. Programs related to training and development of e-business should focus on the risk caused by use or non-use of technology. According to the criteria of experience, growth path, organizational status and type of industry in which the enterprise is involved, training and development programs should be various and focus on a variety of fields.

In this study, there were some limitations; the researcher did not find any significant related research. The lack of easy access to the study population and lack of company's cooperation in completing questionnaires were the most important obstacles of this research. If it was possible that each enterprise responded several

questionnaires to apply outcomes of opinions, it would be better; however, this idea was not achieved.

In this study, suggestions are separated in two enterprise and macro (policy making) levels. One of the most important risks that enterprises encounter it in e-business is security risk. To prevent identity theft, the government can design a website connected to organization for civil registration and documentation in all industries in order to confirm or reject documents received in deals conducted in enterprises. The government can help secure transactions by making signature and electronic seal compulsory in business contracts of enterprises. The government can enact more strict laws on cybercrimes in order to enhance security in enterprises. Some measures should be applied at enterprise level in which security issues are prioritized. These measures can be as follows: Automating internal communication among branches and enterprise's staff, installing the firewall on the enterprise server, developing the culture of using mixed passwords consisting of letters, numbers and structural symbols which should be changed every few months, using a search engine, some systems of company should be only for doing internal affairs and be never connected to the world wide web. It is recommended that executive managers hold permanent and regular meetings to gather comments and

suggestions of people in different organizational statuses in various field of using ebusiness and reflect conclusions in written form to make final decisions. This discussion is not finished by conducting this research and results are not conclusive because the topic of risk perception has subjective and psychological aspects leading to this category that people have different perceptions in different communities and situations; however, this is considered as a starting point for further debates. The following suggestions are offered for further research:

- Investigating the effect of cultural and environmental factors of organization on perceptions of managers / owners of small and medium sized businesses from investment risks in e-Business;
- Investigating the effect of personality features on perceptions of managers / owners of small and medium sized businesses from investment risks in e-Business;
- Investigating the effect of e-government role on perceptions of managers / owners of small and medium sized businesses from investment risks in e-Business

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