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Investigating The Effect of Organizational Innovation and the Use of Online Businesses on Improving the Financial Performance of Startups

Negar Dehqani Sareskanrood

Islamic Azad University Tehran North Branch, Iran

Abstract

The purpose of the present study is to investigate the effect of organizational innovation and the use of online businesses on improving the financial performance of startups. In terms of purpose, the research is developmental-applied and in terms of nature and method it is a descriptive-survey research. The statistical population of the research consists of all managers and experts of creative companies in Tehran, and according to the latest statistics of the "Ecological Development Program of Creative Companies", the Vice President for Science and Technology, is 248.With the inclusion of at least 2 managers and experts in each company, the statistical population was equal to 496. Random Sampling is used to conduct the research and the sample size is 220. Data collection tool was a standard questionnaire with 17 questions and structural transaction modeling with Pls software was used to test the hypotheses.

The results show that the use of e-commerce has a direct negative effect on operating costs of sales in startups with a negative effect of 0.535, the use of e-commerce has a direct positive effect on the return on assets of startups by 0.485 and finally the use of e-commerce It has a direct positive effect on innovation in startups by 0.460. Innovation also does not mediate the relationship between e-commerce usage and operating costs of sales in startups, but mediates the relationship between e-commerce usage and sales returns in startups.

Keywords: organizational innovation, use of online businesses, financial performance, return on assets, startups.

1 .Introduction

Economic globalization has a profound effect on all industries around the world. However, the trend of globalization is not uniform and there are many differences in the degree of integration of industries in a single global market (Caciolatti et al., 2020). in this case, economic globalization puts increasing pressure on manufacturing companies, especially small and medium-sized enterprises (SMEs) and startups, which must compete globally (Soto Acosta et al., 2017). In this regard, with the advent and development of Internet technologies, manufacturing companies are using e-business technologies to increase productivity and quality, reduce operating costs and respond more quickly to the needs of customers and business partners (Jardim Goncalves et al., 2012). As a result, the effective adoption and use of e-business technologies has become a major management concern (Popa et al., 2016).

This is especially important for startups. Start-ups are said to start with a simple and basic idea and grow rapidly and make money (Ramezani Bidgoli, 2019). Startup is a temporary organization that has been created with the aim of finding a repeatable and scalable business model (Nowruzi and Mazlum, 2016). Temporary means that a 10-year-old startup does not make sense. The job of a startup is to quickly find the right business model in the shortest possible time, so speed and time are important factors in the success of a startup, that is, the later it discovers the desired business model, the less chance of success. Concepts such as uncertainty, reproducibility and scalability can also be mentioned among the concepts related to a startup (Soheili et al., 2019).

In addition, the importance of the literature in e-commerce still relies heavily on studies in large corporations, with very few studies in small and medium-sized enterprises and startups (Lopez-Nicholas and Soto Acosta, 2010). In addition, the effects of technology use on business value in startups are still unknown, and it is difficult to find studies that analyze the use of e-commerce in the performance of start-ups, and there are very few studies that Examine the use of e-commerce throughout the product value chain of start-ups and small businesses (Soto Acosta et al., 2015). However, given the e-business conceptual

frameworks, it is the level of e-business integration and integration that creates the best opportunities for business value in these companies (Popa et al., 2018).

Another issue is that most research on the adoption / use of e-commerce has focused on countries with high e-commerce intensities (such as the United States, Canada, and the Scandinavian countries) (Kongaut and Bohlin, 2016). However, the international growth of e-business needs to expand this research to other less studied and developing countries (including Iran) to demonstrate the potential for growth of different cultures (Hernandez et al., 2019) and impact analysis. The use of e-commerce on the performance of start-ups in these countries should also be determined (Vincent and Zakkarvia, 2021).

The performance of the firm in the e-business literature is primarily measured using subjective metrics (Palacios et al., 2014; Soto-Acosta et al., 2015), and shows few traces of objective metrics (Lucas et al., 2013). In addition, most studies have examined the direct relationship between e-commerce and corporate performance, while very little work has been done to identify the variables that mediate this relationship. Therefore, there is a need to develop more comprehensive research models that can examine intermediate metrics, especially in start-ups.

To address the above gaps in the literature, this article focuses on the country's startups and start-up businesses in creative companies. This article not only analyzes the direct effect of e-commerce usage on financial performance, but also the mediating effect of organizational innovation and other issues in these companies. A study of the birth and activity of startups in recent years in the country shows that the average life expectancy of startups is almost three years, and after three years, they are no longer recognized as a startup. 14.4% of startups are more than 3 years old and have probably not been able to become an independent company due to financial problems and lack of investment. There are several reasons for the end of the three-year period of being recognized as a startup, including the acquisition by other large companies, increasing the number of offices to more than one center, increasing revenue, increasing the number of employees to more than 80 and increasing the number of members. The principal referred to more than five people or the sale of shares of the principal members. In fact, in a simple sentence, a startup achieving profitability can be considered the end of being recognized as a successful startup. All of this is associated with technological approaches to business and the need to identify the effect of online business and practices on innovation and. The performance of startups is very important in their survival.

In this regard, the main question of the present research is what is the effect of organizational innovation and the use of online businesses on improving the financial performance of startups?

2 .Theoretical background and development of hypotheses

2.1 Knowledge-based and resource-based perspectives

The "knowledge-based view" considers knowledge to be the most important strategic resource available to a company and states that a company's knowledge is usually difficult to imitate and socially complex and, therefore, is related to the potential for sustainable competitive advantage and superior company performance. (Nickerson and Zenger, 2004). This view is an extended view of the "resource-based view" that provides the basis for explaining why companies in an industry systematically perform differently over time (Hoopes et al., 2003). The resource-based approach shows that the effects of individual and company-specific resources on performance can be significant. In general, resources broadly include assets, infrastructure, skills, etc., based on the two basic claims of resource heterogeneity and resource immobility. The resources and capabilities of competing firms are heterogeneously distributed and may be a source of competitive advantage when they are valuable, rare, difficult to emulate, and not replaceable (Barney, 1991). At the same time, resources and capabilities are the source of sustainable competitive advantage. It also highlights the role of complementarity between resources as a source of commercial value. Company resources are considered complementary when the existence of one source increases the value of another (Ravichandran and Lertwong Satien, 2005). This complementarity of resources is the cornerstone of the resource-based perspective and has been used, for example, as an explanation of how to overcome ICT and its paradoxical nature and contribute to the commercial value of companies (Beth and Grover, 2005). E-business technology itself is often imitative and, therefore, such tools should not be a source of competitive advantage (Barney, 1991). However, as Marona Sardan et al. (2014) argue, "the combination of Internet resources and other valuable resources of the company, and their integration into the organization of processes, may lead to better performance of the company. Since knowledge is a key factor for companies become more competitive, e-business tools may facilitate knowledge creation and sharing (Del Giudice et al., 2018).

2.2 Start-up businesses

Every business enterprise can be described by controllable variables that determine its relative success in the market. Identifying and manipulating these variables determines the extent to which a start-up business benefits from gaining a competitive advantage. By focusing efforts to maximize performance in startups and start-ups based on these key success factors, entrepreneurs can achieve extraordinary market advantages over their competitors. The key factors for success appear in different patterns depending on the type of industry. They are the factors determining a company's ability to compete successfully in the industry. All start-ups need to identify the key to success in their industry; Otherwise, they will be the losers of this field (Malekpour, 2015: 93).

Success factors for startups can be broadly classified into three dimensions: organization, process, and technology. The organizational dimension includes elements such as support for committed management, a clear vision, and a well-established business, in turn, the process dimension includes business-based competition and a balanced team composition. Is an interactive, business-oriented development approach and change management. The technology dimension also considers elements such as business-based, scalable and flexible technical framework, and data quality and integrity. Finally, it should be said that startups need prerequisites to implement business intelligence, without which investing in business intelligence will not be profitable for them (Musa Khani and Saeedi, 2010). Therefore, the role of business intelligence in the operational success of start-ups is very important.

From a practical point of view, start-ups have been considered in the new economy approach. And the purpose of forming these companies is to gain research and technological achievements from production to market, to meet the social and economic needs of society and to transfer technology to the owners of ideas in the economy. These companies are usually based on risky ideas and their business model is quite innovative and their markets are not completely clear at first (Nadafi et al., 2017).

Proper financing is one of the most difficult and complex elements in the process of starting an entrepreneurial business and plays a very important role in starting and developing an entrepreneurial business. The various methods and approaches that exist in the field of entrepreneurial financing provide entrepreneurs with many choices and decisions that can further complicate the process (Eckhart et al., 2006). Financing is one of the bottlenecks in the process of entrepreneurship development. Finding ways to overcome this obstacle and accelerate the engine of entrepreneurship development and thus economic growth is a significant issue in many countries. Meanwhile, what seems to be most influential in financing small businesses are informal investors who can decide to spend money instead of spending money on it. Entrepreneurs' businesses should be left to the wheel of production and entrepreneurship. Evidence and research show that start-up entrepreneurs in the start-up phase cannot count on the help of reputable banks and financial institutions. Findings from the Global Entrepreneurship Watch study in 42 different countries in 2006 show that less than half of these countries have sufficient informal business investment. Investors have been family members, friends, co-workers, neighbors, and strangers to meet the informal startup needs in this report (Bygrave & Quill, 2007: 4).

There is no doubt that these informal resources are essential for entrepreneurship because banks and even venture capitalists are more inclined to invest in superstar companies. Hence, most of their resources are allocated to organizations that are in the pre-growth and development stage, not to organizations that are in the start-up stage. The World Entrepreneurship Watchman explicitly states, "If a nation wants to have an environment in which entrepreneurship can thrive, it must pay close attention to the issue of informal investment." Researchers should make a great deal of effort to study informal investors as a source of entrepreneurial financing. " Helping in the entrepreneurial process is of great importance (Aspray and Cohoon, 2017: 2).

But overemphasis on formal sources of financing at the start-up stage and lack of attention to informal sources in our country can be one of the reasons for the formation of entrepreneurial activities (Amini Nejad, 2011). Many entrepreneurship projects in our country either fail due to lack of financial resources of the entrepreneur or companies with ideas, or do not find the desired development due to the novelty and purity of their original idea. This important case demonstrates the importance and necessity of studying financial performance for entrepreneurs and new businesses based on the theoretical literature.

2.2 .Use of e-commerce and financial performance

Based on resource-based theory, Bharadwaj (2002) develops a research model for analyzing the relationship between enterprise-specific information technology (IT) resources and financial performance. Experimental findings show that profit ratios are significantly higher for companies with superior IT capabilities, while cost ratios are significantly lower. Ravichandran et al. (2005) examined the relationships between IT resources, information system capabilities, IT support for core competencies, and financial performance, and the results showed that firm performance depends on how IT resources are used to enhance a firm's core competencies. (Amuna et al., 2019). The work of Zu and Kramer (2002) provides empirical support for the positive relationship between e-commerce capability and business value. They also concluded that in order to achieve higher benefits from e-commerce, companies need to align their e-commerce capabilities and IT infrastructure. In this regard, Zu (2014) found that complementarity between e-commerce capability and IT infrastructure positively contributes to the company's performance, because these company-specific resources become more effective when combined. Lucas et al. (2013) concluded that the adoption of e-business strategy due to the adaptation of business processes has a positive effect on business performance that can improve decentralized hierarchical coordination, specific technical and operational requirements, and decentralization of employee competencies. However, little is known about the benefits of e-business in terms of cost-cutting or revenue generation for startup-specific areas, while finding studies analyzing the use of e-commerce in startup production is less common (Soto Acosta et al., 2015). Previous research has shown that the use of Internet-based technologies may bring benefits in the form of significant cost reductions and improved efficiency of start-up business processes across the value chain, such as human resource management, procurement, marketing, sales or customer service. In addition, these benefits are expected to be important in activities that may require higher levels of information (Palacios et al., 2014). In this regard, the business may improve the effectiveness of supply chain management by facilitating cooperation between the company and its business partners. Automation of core business activities such as procurement, order processing, production planning, or inventory management also allows companies to reduce errors and costs, as well as improve operational efficiency throughout their supply chain. Also, from a resource-based perspective, previous studies suggest that firms that develop firm-specific capabilities, such as IT capabilities, may achieve higher economic returns because they are more resource-efficient than competitors (Santhanam and Hartono, 2017). For the reasons mentioned above, two research hypotheses are propose

H1. The use of e-commerce has a direct negative effect on the operating costs of sales in startups.

H2. The use of e-commerce has a direct positive effect on the return on assets of startups.

Use of e-commerce and innovation

Knowledge brought to businesses by online space enhances knowledge exchange and collaboration, and stimulates innovation (Acosta et al., 2014). Previous literature shows that knowledge creation is the main prelude to the development of new products, services and processes (N. Choi et al., 2006). However, knowledge creation depends on the collective ability of employees to share and combine existing knowledge (Del Guides and Della Prota, 2016;). Thus, knowledge sharing is another important premise of innovation (Del Guides and Maguini, 2014). Internet technologies have great potential for creating competitive advantage through the development of important innovations in products, services and business processes. Marona Cardin et al. (2014) believe that most participatory technologies are positively associated with innovation in startups and start-ups. These technologies facilitate the creation of virtual teams, where employees are empowered and motivated to share real-time experience, knowledge and personal information. Similarly, technologies such as websites or extranets can be used to share knowledge with customers and suppliers and use it for innovation (Adamides and Caracapilidis, 2006). In summary, the benefits of e-business, which include the efficient sharing of information and knowledge as well as working with people from remote locations, are expected to stimulate the development of organizational innovation. Based on these arguments, the third hypothesis is proposed:

H3: The use of e-commerce has a direct positive effect on innovation in startups.

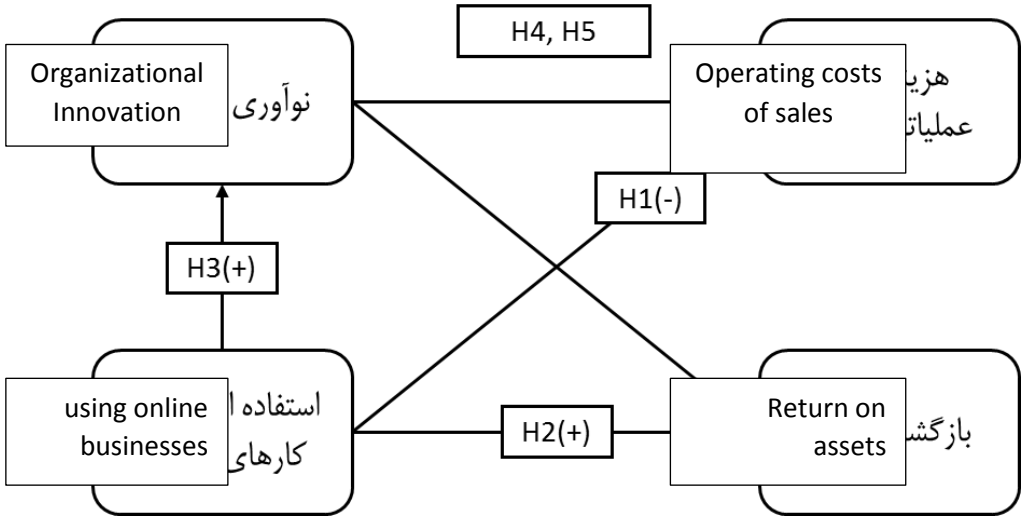
2.4 The mediating role of innovation in the relationship between e-commerce usage and sales operating costs

There is literature that has found positive relationships between e-business and corporate performance as measured by objective financial metrics (Lee et al., 2011). However, few studies have examined these relationships in start-ups. Even less research has analyzed the effect of intermediate outcomes or intermediaries on the complex relationships embodied in the e-business-performance link. However, there is research that examines the importance of Internet technologies for knowledge creation (Lopez-Nicholas and Soto-Acosta, 2010) and the relationship between information technology, knowledge management, innovation, and company performance (e.g., Lopez-Nicholas and Merono- Sardan, 2014) examined the finding of direct and indirect positive links between information technology, knowledge management, innovation and company performance. Thus, innovation may mediate the relationship between e-commerce usage and firm performance given its potential to reduce costs and improve asset returns. So, the following hypotheses are raised:

H4: Innovation mediates the relationship between e-commerce usage and operating costs of sales in startups.

H5: Innovation mediates the relationship between e-commerce usage and productivity in startups.

Based on the relationships between research variables, the research conceptual model can be developed as Figure 1:



3. .Research methodology

This research is developmental-applied in terms of purpose. Because in the field of examining the effect of organizational innovation and the use of online businesses on improving the financial performance of startups, in the theoretical part to explain its various dimensions and in the operational part to provide practical and executive solutions for start-ups. On the other hand, this research is descriptive-survey in terms of nature and method. The statistical population of this research consists of all managers and experts of creative companies in Tehran, whose number, according to the latest statistics of the "Creative Companies Ecology Development Program" of the Vice President for Science and Technology, is 248. According to the inquiry, at the time of the start of the research, according to the latest report, there are 248 creative companies, which with the inclusion of at least 2 managers and experts in each company, the statistical population was equal to 496. Sampling was simple random. To determine the sample size, Charles Cochran's formula has been used and based on this formula, the sample size for the community of 496 companies is equal to 216 people, of which 220 questionnaires have been distributed to ensure a sufficient number of return questionnaires in the statistical sample. Data collection tool was a standard questionnaire with 17 questions. In order to measure the validity of the questionnaire in this study, content validity and construct validity have been used. To assess the content validity, the questions have been adapted from reliable sources and then provided to professors and experts, and the number of questions and their content has been approved. Confirmation, construct validity used. Cronbach's alpha coefficient has been used for reliability.

4 .Data analysis

4.1 Demographic analysis of statistical sample and descriptive analysis and reliability of research variables

In order to analyze the data obtained from the questionnaires, first in the descriptive analysis section, the statistical sample of the research was reviewed. The results of these calculations are given in Tables 1:

Demographic variable		Frequency	Percentage
Gender	Female	164	36
	Male	220	64
Education	BA/BS	135	37.1
	MA/MS	165	42.9
	PHD	104	19.9

Also, the results of measuring the reliability of variables as well as their central descriptive statistics (mean) and dispersion (standard deviation) are given in Table 2:

Key variables	Cronbach's alpha calculated	Mean	Standard Deviation
Organizational Innovations	0.832	4.1	0.711
Using Online Businesses	0.808	3.9	0.862
Operational costs of sales	0.837	3.6	0.890
Return on assets	0.893	3.8	0.791

As can be seen, based on the results of Table 2, most of the statistical sample studied had a master's degree. Also, the reliability obtained for all 4 main variables was acceptable above 0.70, which indicates the reliability of the questionnaire questions. On the other hand, descriptive statistics show that in terms of central statistics, the average of all 5 variables was above the mean (3) and below the allowable standard deviation (1), and therefore their mean and standard deviation are within the allowable range.

4.2 Checking the assumption of normalcy

In this section, the Kolmogorov-Smirnov test is used to determine the type of data distribution as normal or abnormal, and based on that, because the sig value of the test for all variables is less than 0.05, the null hypothesis is zero. Based on the normality, the distribution of quantitative research variables was not confirmed ($P < 0.05$), in other words, the distribution of all quantitative research variables is abnormal.

4.3 Data analysis based on partial least squares model

Based on the results of Kolmogorf-Smirnov test and determining the abnormality of the statistical population distribution, to test the model of this research, data analysis by structural equation modeling based on variance with Smart PLS software was used.

4.3.1 Divergent validity review

Table 2 shows the divergent and convergent validity statistics for the validity and reliability of the research measurement model:

Index/Variable	**cp**	**AVE**	**α**
Organizational Innovation	**0.961**	**0.892**	**0.940**
UsingOnline Businesses	**0.838**	**0.511**	**0.758**
Operational costs of sales	**0.894**	**0.586**	**0.875**
Assets Return	**0.916**	**0.785**	**0.863**

2 Divergent validity review

Co-occurrence between multiple variables occurs when there is a large correlation (greater than 0.9) between multiple variables that results in redundant information. This repetition of information reduces the predictive power of each individual independent variable (Field, 2009; Pallant, 2007). Table 4 shows the results of the correlation coefficients between the research variables.

variable	1	2	3	4
Organizational Innovation	0.854			
Using Online Businesses	0.323	0.715		
Operational Costs of sales	0.570	0.460	0.756	
Asset Return	0.809	0.314	0.527	0.886

In Table 5, the cross-sectional loads of the items on the research structures are reported.

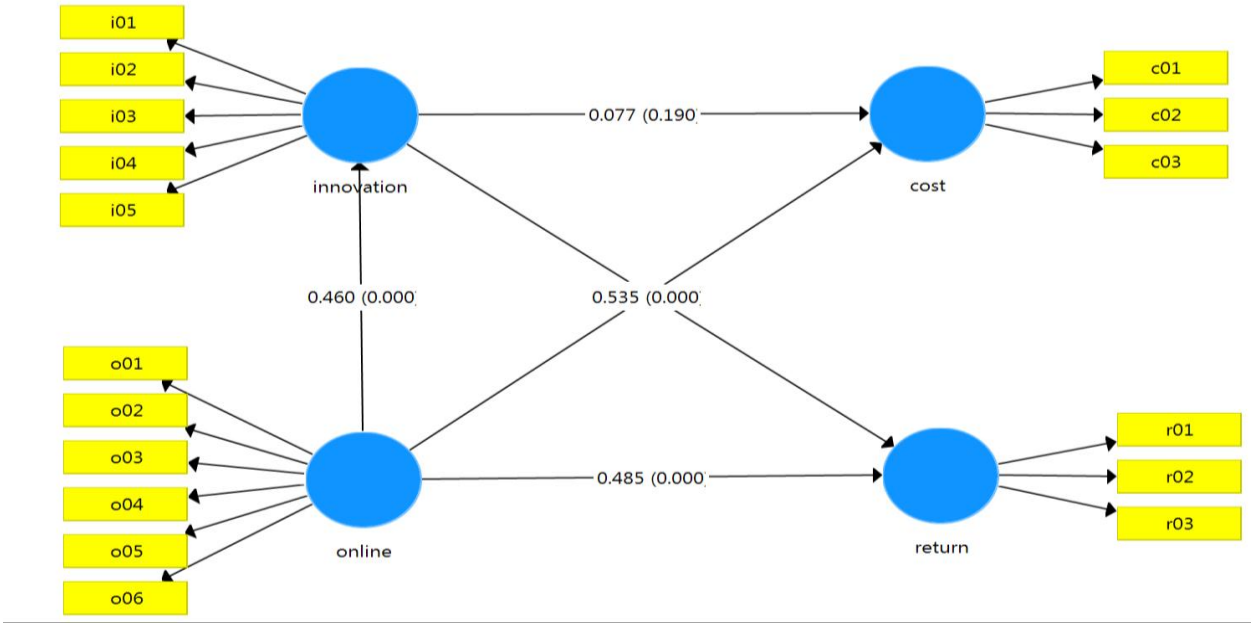
Obvious Variable	Factor load	Criterion Limit	Result
1	0.931	Over 0.7	Factor Confirmed
2	0.949	Over 0.7	Factor Confirmed
3	0.953	Over 0.7	Factor Confirmed
4	0.777	Over 0.7	Factor Confirmed
5	0.725	Over 0.7	Factor Confirmed
6	0.758	Over 0.7	Factor Confirmed
7	0.719	Over 0.7	Factor Confirmed
8	0.777	Over 0.7	Factor Confirmed
9	0.724	Over 0.7	Factor Confirmed
10	0.800	Over 0.7	Factor Confirmed
11	0.818	Over 0.7	Factor Confirmed
12	0.822	Over 0.7	Factor Confirmed

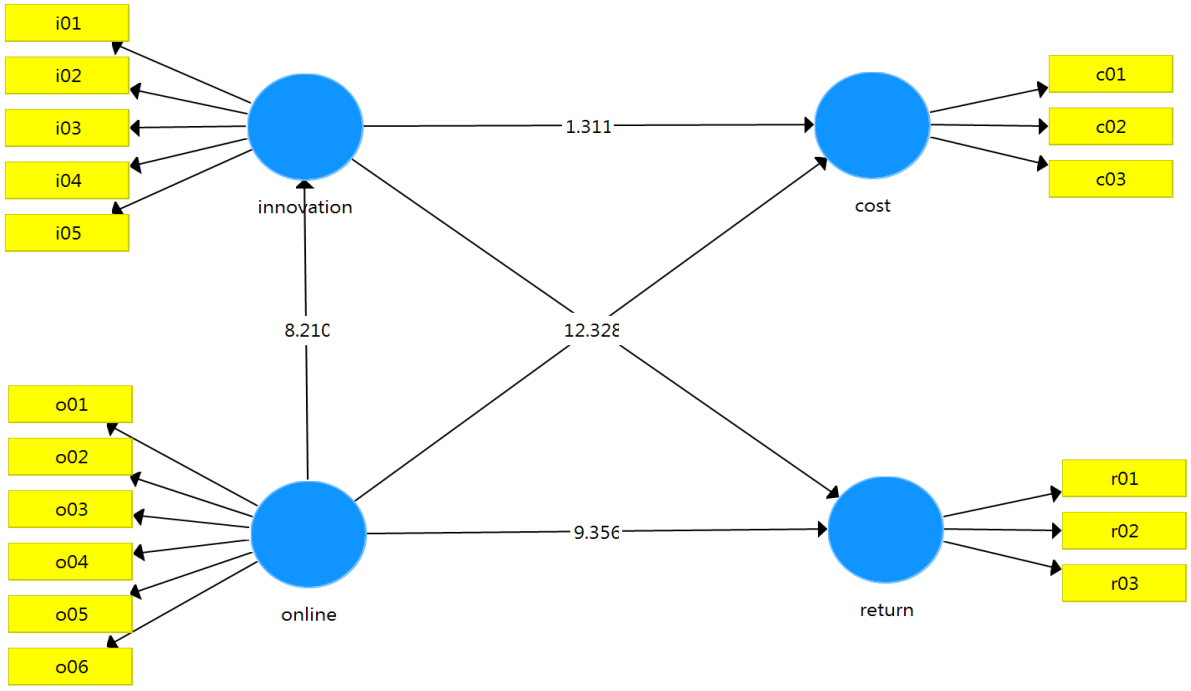
13	0.791	Over 0.7	Factor Confirmed
14	0.818	Over 0.7	Factor Confirmed
15	0.907	Over 0.7	Factor Confirmed
16	0.903	Over 0.7	Factor Confirmed
17	0.847	Over 0.7	Factor Confirmed

According to Table 5, the root mean square of the extracted variance of all research variables is greater than their correlation with other variables. Therefore, the criterion for examining the divergent validity of research variables is established. In addition, numbers below the diameter of the correlation matrix have been reported to investigate the relationship between the variables. As can be seen, the correlation coefficient of all variables with each other is positive and significant.

4.3.3 structural pattern tests

The proposed conceptual model is examined through the structural equation modeling method and according to the research hypotheses mentioned in the theoretical framework, the partial least squares method is used to estimate the model. In Figures 3 and 2, the tested model shows the relationship between research variables. According to this figure, the effect of numbers inside the circle of variance are explained. And the results were given below.





In Table 6, the estimation of path coefficients and explained variance of research variables and the result of testing research hypotheses are reported.

	Hypothesis	Direct path coefficient (β)	آمار هی تی	Meaningful statistics	Results
1	The use of e-commerce has a direct negative effect on the operating costs of sales in startups.	12.328	0.535	0.000	Confirmed
2	The use of e-commerce has a direct positive effect on the startups' assets efficiency	9.356	0.485	0.000	Confirmed
3	The use of e-commerce has a direct positive effect on the innovation in startups	8.210	0.460	0.000	Confirmed

4 3.4 Test results of hypotheses with mediating variables based on Baron and Kenny method

Table 7 shows the test results of hypotheses with mediating variables by Baron and Kenny method:

Hypothesis	Correlation between independent and dependent variable	Correlation between independent variable and mediator variable	Correlation between mediator variable and dependent variable	Investigating the role of the mediator variable	Results
Innovation mediates the relationship	Confirmed (H1)	Confirmed(H3)	Rejected α statistics 1.311	Since the effect of the mediator variable on the intermediary in this hypothesis, ie the effect of	rejected

between the use of e-commerce and the operating costs of sales in startups				organizational innovation on sales operating costs has not been confirmed, so this hypothesis is rejected and innovation does not mediate the relationship between e-commerce usage and sales operating costs in startups.	
Innovation mediates the relationship between using e-commerce and asset efficiency in startups	Rejected Cr statistics 1.434	Rejected Cr statistics 1.311	Confirmed Cr statistics 4.011	Since the effect of the mediator variable on the dependent is confirmed in this hypothesis, ie the effect of organizational innovation on the return on assets, so this hypothesis is confirmed. And innovation mediates the relationship between e-commerce usage and sales returns in startups.	confirmed

4.3.5 model fit

In order to measure the fit of the structural model of the research, two indicators of coefficient of determination and GOF are reported below.

Items	R^2	**GOF**
Using Online Businesses	**0.330**	**0.419**
Operating costs of sales	**0.412**	
Asset Return	**0.482**	

As can be seen in Table 7, the values of the coefficients of determination for the latent variables of the model express the degree of influence of the dependent variables on the independent variable. In fact, from the values in the table above, 0.330 is inferred from structural changes in the use of online businesses, 0.412 from structural changes in sales operating costs, and 0.482 from structural changes in return on assets by the structure entering them. That is, the independent variable of organizational innovation is explained. The GOF index is also above the criterion of 0.3 and is acceptable.

5 .Conclusions and suggestions

The performance of start-ups is ambiguous due to the entrepreneurial nature of their start-ups and the time it takes to achieve quantitatively stable financial indicators, and as a result, researchers' financial performance of these companies from the financial and operational dimensions of performance, rules and regulations. Non-financial (for example, product market results, such as market share, introduction of new products and marketing effectiveness and internal process results), are measured (Caseiro and Coelho, 2017).

This study was conducted in line with the purpose of "examining the effect of organizational innovation and the use of online businesses on improving the financial performance of startups" and the results showed that the use of e-commerce has a direct negative effect on operating costs of sales in startups. The rate of 0.535, the use of e-commerce has a direct positive effect on the return on assets of startups by 0.485 and finally the use of e-commerce has a direct positive effect on innovation

in startups by 0.460. Innovation also does not mediate the relationship between e-commerce usage and operating costs of sales in startups, but mediates the relationship between e-commerce usage and sales returns in startups.

The results of this study are in line with the results of Caseiro and Coelho (2017) in terms of achieving online business capacity in learning about innovation networks and performance. The results of Popa et al.'s (2016) research in terms of achieving e-business results have a direct effect on financial performance and establish a positive relationship with organizational innovation. Also, the results of Kaya and Patton (2011) research in terms of access to "knowledge-based resources, organizational learning orientation and the type of market orientation affect the innovation and performance of start-up businesses"; The results of the research of Kitab et al. (2011) in terms of achieving "simultaneous acquisition of knowledge from external and internal sources increases performance in the product market of start-ups";

Therefore, in line with the obtained results, it is recommended to the managers and decision makers of creative companies to increase their market research in the field of markets related to their product / service and to increase their research teams in new markets to create more knowledge. From the markets and areas of creating niche markets and identifying the strengths and opportunities and weaknesses and threats of the company to operate in electronic markets. Also, use and model the research results of market research companies that systematically and systematically conduct longitudinal and transverse research in the market. On the other hand, in their strategic marketing plans to move to the target markets, identify the amount of innovations required in the field of market-product well and proceed to produce the product and operate in a specific market. Develop, update, strengthen and integrate in-company information systems and make more specialized and better use of in-company research information systems, which is the result of tacit knowledge and expertise of experts, so that they can make more innovations.

6 .Limitations and future research suggestions

This research has been done cross-sectionally and perhaps its results as longitudinal research can provide other generalizable results. Also, due to the corona epidemic, more access to more startup companies was not provided in order to provide more generalizable results.

In this regard, future researchers are also suggested to conduct this research again during the longitudinal research and also to investigate the reasons for not confirming the mediating role of innovation in the relationship between the use of e-commerce and sales operating costs in startups and this hypothesis. Test in other statistical communities and other start-up customers.

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