

Investigating the Impact of Technological Distinctive Competencies and Information Technology Capabilities on Internet Entrepreneurship by Means of Innovation Capability

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Abstract

In the information age, establishing an online business has become the most prevalent approach for intrapreneurship. Entrepreneurs with creative ideas have created websites which are now a part of people's daily life. In addition to high financial turnover and considerable economical profits, these websites have changed the face of human life entirely. In this research we intend to investigate the impact of information technology and technological competencies on internet entrepreneurship and compare the extent of their effect. In this research, we try to present a new and unique model for explaining the relationship between internet intrapreneurship and information technology. To achieve this, a model has been provided which can be said to be the only model that investigates the relationship between internet intrapreneurship and technological distinctive competencies. The current research is a descriptive survey which has employed the questionnaire tool in order to gather the required information. Therefore, an authentic questionnaire has been designed and distributed among internet entrepreneurs who do all their activities including advertisement, marketing, and sales through internet. The statistical analysis was conducted on the 202 usable questionnaires using SmartPLS and SPSS software packages. The findings reveal that technological competencies and information technology have significant impact on internet entrepreneurship.

Keywords : Distinctive technological competencies, information technology capability, information technology management, innovation capability, internet intrapreneurship online business

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Starting from the second half of the twentieth century, the world has entered a new era and the dawn of industrial age has begun. Introducing computers to the market and upheaval in the information and communication field linked computers to communication technologies such as telephone and television, and the information technology revolution occurred. The combination of these technologies caused the emergence of global communication network which paved the way for the digital economy (Quinones, Nicholson, & Heeks, 2015). Transforming from the industrial age to emergence of internet, massive changes in goods, products, quality, and customer tastes occurred and we have witnessed salient technologies which caused the development of a complete competitive environment. In the existing competitive environment which is concomitant with fast changes in technology, the importance of constant innovation increases and new knowledge and technologies and also

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commitment to development are critical factors for organizations (Berchicci, 2013). These changes have led to entrepreneurship presenting new products/services and innovation. When entrepreneurial technological organizations pursue opportunities for reaching new resources, they can be much more successful than their competitors (Newbert, Gopalakrishnan, & Kirchoff, 2008). It can be said that technology-based organizations cause economic growth and profitability, and also create new industries, products, and innovative processes (Grinstein & Goldman, 2006). To achieve these organizational goals, such organizations should have top management support in fields of technology and improve their technological skills. They also should develop technological competencies, have strong organizational learning, and have comprehensive cooperation with entrepreneurs in organizations (Fernandes, Raja, White, & Tsinopoulos, 2006). On the other hand, it is obvious that organizations need to be more innovative in new product development to survive in this hyper competitive environments (Chen, Wang, Nevo, Benitez-Amado, & Kou, 2015). As an example, the greatest challenge for Procter & Gamble is considering the vast spectrum of consumer needs in order to offer fast economic services (Day, 1994). Internet boom in the late 1990s can be considered as an example of combined innovation. Technologies combine with each other and create components that can produce a new array of goods (Rhee, Parent, & Oyamoto, 2012). Product innovation is the introduction of products/services that are meant to resolve the needs of people or markets (Damanpour, 1991). Entrepreneurship culture is the ability of a firm to provide a working environment which encourages creativity, innovation, risk-taking, tolerance of ambiguity, and productivity. For a business to be innovative, it should develop innovation culture first which is a subcategory of entrepreneurship culture (Khazanchi, Lewis, & Boyer, 2007). Only in this way an organization can exploit all of its information technology resources for enhancing its performance. Also, intrapreneurship culture is associated with growth and profitability of the firm (Zahra, 1991). Leaders and managers of organizations have a critical role in implementing strategies and moving towards the organization vision. Senior managers should take into consideration supporting technology, effective cooperation in execution, and with the help of internal capabilities, entrepreneurship development can be practiced (Martín-Rojas, García-Morales, & Bolívar-Ramos, 2013). According to researchers, organizations which increased their entrepreneurial capabilities had reached higher levels of trust and commitment throughout the organization. Support from senior management enhanced the strategies of entrepreneurial endeavors and entrepreneurship would be feasible with the aid of senior management (Knight, 1987).

Research Background

(1) Technological Distinctive Competencies and Innovation Capability

Technological distinctive competencies is an appropriate concept for describing and studying the innovation trend in technology. On the other hand, this concept deals with the process of technological knowledge creation (Nieto, 2004). In fact, innovative organizations employ continuous learning process in order to produce new technological knowledge (Nonaka & Takeuchi, 2000). Decarolis believed that exploiting the satisfying development of organizational innovation was one of the main functions of technological distinctive capabilities (Carolis, 2003). On the other hand, according to Autio and Yli-Renko (1998), it has been shown that organizations with new technologies have certain strengths which competing organizations cannot easily imitate. On the top of these strengths is the technological distinctive competencies which makes effective innovation possible. Organizations recognize the technological opportunities of the market by means of technological distinctive competencies and employ them for creating competitive advantage (Fontes, 2001).

Technological distinctive competencies increase absorption potential and technological knowledge management and innovation capability and causes steady and sustainable development in organizational performance. Lokshin believed that technological distinctive capabilities had a critical role in innovative performance of organizations and so, had a positive effect on firm performance (Lokshin, Van Gils, & Bauer, 2009). In general, competencies emerged when a mixture of resources were gathered in order to create a specific capability (Real, Leal, & Roldán, 2006). This means that competencies are abilities which differentiate the organization and include a set of necessary behaviors for achieving effective organizational performance, although these behaviors cannot be effective on their own, and the

mixture of these behaviors with individual skills in various sections can be decisive (Cohen & Levinthal, 1990). Another feature of technological distinctive competencies reflects in the discussion of the relationship between new technologies and development of skills. Acquiring new technological skills depends on creating technological distinctive competencies. Also, these competencies include development and implementing new technologies which would be practical in case of existence of various organizational capabilities (Miyazaki, 1999). Nowadays, innovations are the result of creativity and new technologies, so emergence of new technologies can be considered either a threat or an opportunity for an organization. This depends on the support of senior management and the way they deal with new technologies. In other words, managers should welcome new technologies in order to remain in competition and provide a platform to utilize these technologies for creating technological distinctive competencies in an organization.

(2) Technological Distinctive Competencies and Internet Entrepreneurship

Regarding significant changes that occur in global environment in recent times, some call entrepreneurship as the engine for economic development (Duening, Hisrich, & Lechter, 2014). Creating and development of internet network makes fast data transaction possible and some new types of commerce have emerged which is called electronic commerce (Balachandran & Sakthivelan, 2013). Electronic commerce has opened a new field in competition because of the speed, efficiency, cost reduction, and exploitation of passing opportunities, so lagging behind this trend of change results in isolation in the global economy. Therefore, we call the electronic commerce as a job creating platform. Also, entrepreneurs can create jobs in the virtual space by exploiting new opportunities with the help of organizational capabilities (Zhang, Peng, & Li, 2008). They extract scientific and technical resources through technological distinctive competencies and expertise of organization. This is done using a set of rules which finally results in entrepreneurship and new product development (Teece, Rumelt, Dosi, & Winter, 1994). All of these explanations mean that technological distinctive competencies is a specific technological dominance that can lead to competitive advantage (Real et al., 2006). Employing a new technology in an organization would be effective when a correct managerial system pays constant attention to the necessary technological skills in order to execute new technologies. Technological distinctive competencies would make this possible (Schramm, 2006). Usually, organizations which develop technological distinctive competencies have a high potential for adopting technology and are able to understand other technological cognitive models and acquire implementation (Thomas, 2013). In general, development of competencies in organizations, including technological distinctive competencies leads to improvement of organizational learning, and enhancing of organizational performance (Duening et al., 2014). As Thaysen and Kautz said, employees with technological distinctive competencies use information technology easily and facilitate organizational learning (Kautz & Thaysen, 2001). Recent studies have shown that in today's agitated environment, organizations which have founded their business upon technological distinctive competencies have higher levels of performance (Wang, Lo, & Yang, 2004). Organizations which are active in technology-based industries such as biotechnology, software and computer, organizational managers have the main role of employing specialists and motivating them for promotion of innovative activities which is one of the dimensions of entrepreneurship (Casper & Whitley, 2004). Walsh and Linton (2002) believed that distinctive competencies were related to specific industries and were considered as strategic factors for organization. Among these competencies, technological competencies of organization are the most important (Banerjee, 2003). In an industry in which opportunities are changing quickly, technological competency is considered the most important factor for creating competitive advantage (Prahalad & Hamel, 1990).

(3) Technological Distinctive Competencies and Innovation Capability

Information technology is defined by American Association of Technology as follows. Information technology includes study, design, development, implementation, and support of information systems based on computer and specially, software and hardware applications (García-Villaverde & Ruiz-Ortega, 2011). The role of information technology in today's economy is obvious. Various firms have invested heavily in information technology infrastructures in order to be successful in their industry (Bordonaba-Juste, Lucia, & Polo-Redondo, 2012). With

regards to the important role of information technology in facilitating organizational innovation, investigating the relationship among information technology, innovation, and business performance is of high importance (Jacks, Palvia, Schilhavy & Wang 2011; Tarafdar & Gordon, 2007). Different industries are directly involved in information technology including hardware, software, electronics, semi-conductors, internet businesses, producers of telecommunication apparatus, electronic commerce, and computer services industries (Chandler & Day, 2012). In the recent years, the relationship between information technology and business innovation has been the focal point of many studies. These studies have mentioned information technology as the driving force in the progress of organizations towards innovation in processes and products (Ramachandran, Devarajan, & Ray, 2006). The existing literature and researches show that information technology capabilities have positive and significant effect on product innovation (Bharadwaj, 2000). Nowadays, there is a close bond between organizational strategic planning and information technology, so determining their priority is difficult. Information technology can be a source of creating competitive advantage for firms and can change the way in which a business operates (Henderson & Venkatraman, 1993). The term information technology capabilities or values driven from information technology is usually incorporated with performance results including innovation, enhancing efficiency or productivity, improvement of customer services, cost reduction, and creating competitive advantage (Davenport, 2013). Understanding the relationship between information technology capabilities and innovation have great importance because this age is called information age. Most of the innovations are through information technology (Cooper & Zmud, 1990). Information technology has provided many advantages for organizations through its rapid growth and finally led to creating competitive advantage for the organization in comparison to its main competitors (Powell & Dent-Micallef, 1997).

(4) Information Technology Capabilities and Internet Entrepreneurship

On the basis of previous studies, entrepreneurial organizations which are active on the internet should pay a great deal of attention to the resources, infrastructures, alignment of their strategies and management of information technology in their organizations (Matlay, 2004). Luftman explained the two-sided impact of information technology on entrepreneurship. On one hand entrepreneurs could use information technology according to their technical abilities and on the other hand, they could employ creativity to establish a new venture (Sledgianowski & Luftman, 2005). Information technology capabilities are the ability of an organization to unify and establish its information technology resources and combine them with other resources (Bharadwaj, 2000). Information technology capabilities have the potential to cause cost reduction, increase profitability, and other performance criteria (Tarafdar & Gordon, 2007). To summarize, it can be said that information technology capabilities can form organizations with low organizational hierarchy because these kind of organizations have flexible processes and operations, which are necessary for new product development, business process re-engineering, and business models (Chen, Wang, Nevo, Benitez-Amado, & Kou, 2015). In general, information technology has two capabilities for organizations :

(a) Enabler : Information technology acts as a strong enabler and provides effective and sufficient tools for all the aspects of an organization. Cases which express the role of information technology as an enabler include gathering, storing, call creation, and technological innovations.

(b) Infrastructure : Sharp, Irani, and Desai (1999) believed that this aspect related to the capabilities which information technology created for organizations. From resource-based view, information technology infrastructure and capabilities can be defined as information technology resources. Many approaches have been employed by researchers in the field of information technology value in businesses for analysis and formulating information technology resources (Wade & Hulland, 2004). Ross, Beath, and Goodhue (1996) divided information technology resources into these categories :

(i) Human assets (technical skills of information technology employees, capability for understanding, and solving business problems).

(ii) Technical assets (technical architecture, data standards and platform).

(iii) Relational assets (cooperation with other sections, relationship with customers, senior management support, responsibility, and shared risk).

Interest in measuring the impact of information technology on business performance has been seen from time of Roach. He expressed the term “productivity paradox”. This expression means that although some organizations have invested heavily in information technology, they do not see a significant impact on their business performance (Roach, 2003).

The resource-based view holds that organizations create value based on their resources which should be unique, rare, valuable, and difficult to imitate. Organizational competencies form when these resources are combined together and create a specific organizational capability (Wernerfelt, 1984). With this approach, organizations can understand the advantages of using information technology if they create competencies related to information technology.

(5) Innovation Capability and Internet Entrepreneurship

This age is the era of innovation and if the quality of products does not improve, they will vanish from the competition rapidly. Obviously, innovation and creativity is the best way to maintain the existing market and reach new markets. In today's world, the biggest capital of an economic firm is its employees who are learners and creative, and they create entrepreneurs (Martin, 1994). Nowadays, organizational innovations are highly affected by information technology that can lead to competitive advantage. From the organizational innovations which are affected by information technology, cases like new business plans, global markets (globalization), new products, new marketing, super systems, and new sales methods (Davenport, 2013) are mentioned. According to Adler and Shenbar (1990), innovation capability has four features (conditions) including: a) ability to develop new products and markets; b) ability to employ optimum process technology for producing new products; c) ability to develop and adopt new products and processes for satisfying future needs; and d) ability to encounter technological activities and unexpected activities by competitors (Adler & Shenbar, 1990).

Today, world's economy is based on innovation, creativity, and employs knowledge; especially, information and communication knowledge. This economy is called knowledge-based economy. In the knowledge-based economy,

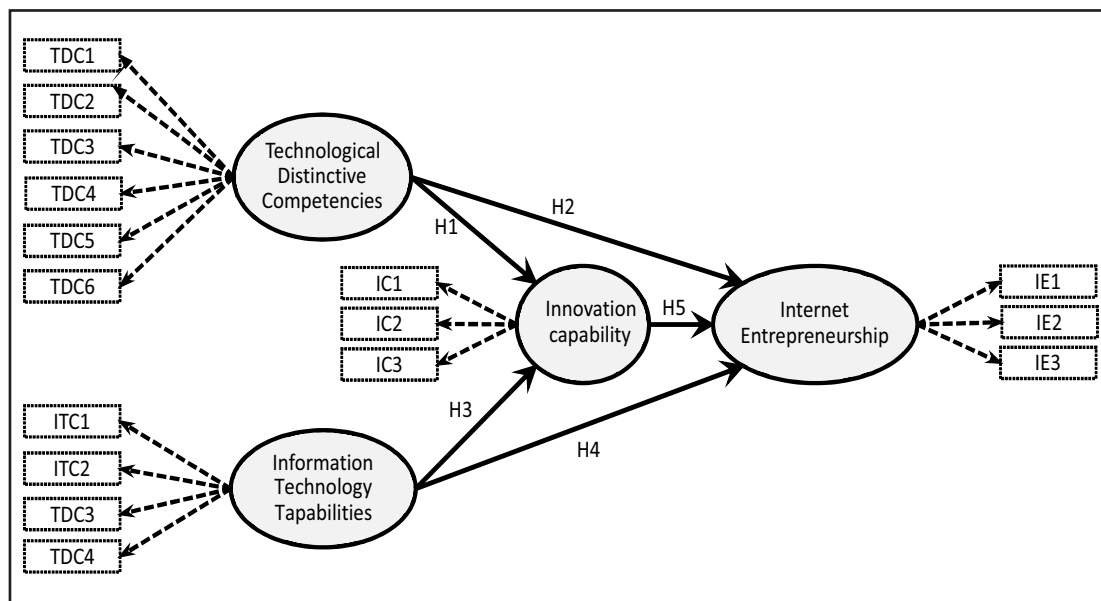


Figure 1. Hypothesized Model

innovators and thinkers are the main capitals for producing entrepreneur companies (Bhupatiraju, Nomaler, Triulzi, & Verspagen, 2012). Entrepreneurship through the internet is not limited to internet sales and many cases, especially in the fields of entrepreneurship use methods of acquiring customers through internet, internet marketing, cooperation and virtual networks, virtual reality, and remote education. These are aspects of electronic commerce. An entrepreneur is a person with specific innovation who transfers ideas into reality and entrepreneurship which results in the enhancement of productivity, continuous innovation in goods, encouraging investors, and wealth creation. Electronic commerce and entrepreneurship have close relationship with each other. Entrepreneurship leads to creativity and innovation grows electronic commerce. Electronic commerce has direct effect on facilitating and creating new ideas and markets and expands existing ones. So, considering these facts, the hypotheses are proposed. According to the present explanations, the conceptual model is shown in Figure 1.

Research Methodology

The statistical population for this research includes internet entrepreneurial organizations which are working on the internet and all of their activities including marketing, sales, payment, product introduction, and after sales services that are done through the internet.

According to the previous studies, verification of an internet business by third party institutes has the greatest effect on creating trust among buyers. In this case, the buyer will feel safe about his information and can sue the business if needed. On the other hand, there are lots of websites which do not have the legitimacy and are operating illegally. In Iran, the center for development of electronic commerce has the responsibility for creating security infrastructure, and issuing the electronic symbol of trust to the internet businesses. In fact, the electronic symbol of trust is for building trust for users when they visit websites and make online purchases. This symbol will be issued by the responsible organization only after receiving all the required documents. People can visit www.enamad.ir website which belongs to electronic commerce development center and see the list of verified companies.

A questionnaire was designed based on the mentioned models and was confirmed by qualified professors for measuring the reliability.. We first distributed 30 questionnaires and after initial verification of the reliability the internet version of the questionnaire was developed and sent to 4,100 email addresses of which 217 answers were received. 15 of them were not usable because of imperfection. So, finally we have 202 verified questionnaires on which we have done statistical analysis.

(1) Dimensions and Indicators : The existing variables of this research have dimensions, indicators, and items which are extracted from other researches.

(i) Technological Distinctive Competencies

The first variable is technological distinctive competencies. Many researches have done about the effects of various technological variables in organizations including: senior management support, technological skills, investment, and technological distinctive competencies (Martín-Rojas, García-Morales, & García-Sánchez, 2011).

In this research we have chosen the technological distinctive competencies variable based on Real, Leal, & Roldán (2006), and its effect on the internet entrepreneurship. For measuring this variable, we have adopted a 5-point Likert scale (1 = *totally disagree*, 5= *totally agree*).

(ii) Information Technology Capabilities

The next variable is information technology capabilities and because in the previous studies this variable is not measured directly. We have measured it according to Chen et al. (2015) and we have used the 5-point Likert scale which is from 1 = *totally agree* to 5 = *totally disagree*. The indicators are: information technology flexibility, information technology integration, information technology alignment, and information technology management.

(iii) Innovation Capability

Tsui and Minetaki have mentioned three factors for measuring innovation capability in their research (Tsui & Minetaki, 2011) and we have adopted them with a 5-point Likert scale from 1=very bad to 5=very good.

(iv) Internet Entrepreneurship

We have chosen entrepreneurship in technological organizations for investigating the internet intrapreneurship variable. Based on the Heavey, Simsek, Roche, and Kelly (2009) model, intrapreneurship has three dimensions including business investment, new product development, and self-actualization.

Statistical Analysis

After collecting the answered questionnaires, statistical analysis was conducted on the data. The statistical analysis of this research is divided into two parts. In the first part, we investigated the fitness of the model, and in the second part we tested the hypotheses. In the first part, the fitness of model includes three steps. In the first step, we tested the fitness of measurement model; in the second step, we tested the fitness of structural model, and in the third step we tested the fitness of overall model. In the second part, we analyzed the authenticity of the hypotheses which is explained as follows :

(1) Checking the Fitness of the Model : As we have previously mentioned, checking the fitness of the model is conducted in three steps which are explained as follows:

Table 1. Reliability and Validity of Research Constructs

Research Constructs	Cronbach's Alpha	CR	AVE
Technological Distinctive Competencies	0.94	0.943	0.504
TDC1	0.93	0.925	0.806
TDC2	0.88	0.878	0.708
TDC3	0.94	0.935	0.786
TDC4	0.89	0.894	0.629
TDC5	0.93	0.926	0.757
TDC6	0.89	0.888	0.727
Innovation Capability	0.89	0.893	0.509
IC1	0.87	0.872	0.695
IC2	0.93	0.927	0.815
IC3	0.86	0.856	0.667
Information Technology Capability	0.82	0.825	0.552
IT Capabilities1	0.87	0.874	0.625
IT Capabilities2	0.93	0.932	0.816
IT Capabilities3	0.86	0.877	0.670
IT Capabilities4	0.94	0.941	0.830
Internet Entrepreneurship	0.89	0.895	0.513
IE1	0.88	0.881	0.713
IE2	0.93	0.919	0.816
IE3	0.86	0.834	0.681

(i) Fitness of the Measurement Model : In this step, indicators such as composite reliability (CR) and Cronbach's Alpha have been used in order to measure the reliability, convergent validity of the constructs have been measured by AVE and Fornell – Larcker method were employed to check the divergent validity of the constructs which are shown in Table 1 and Table 2.

Table 2. Fornell – Larcker Matrix

*	TDC	TDC1	TDC2	TDC3	TDC4	TDC5	TDC6	ITC	ITC1	ITC2	ITC3	ITC4	IC	IC1	IC2	IC3	IE	IE1	IE2	IE3
TDC	0.491																			
TDC1	0.286	0.529																		
TDC2	0.393	0.371	0.619																	
TDC3	0.242	0.325	0.521	0.796																
TDC4	0.315	0.289	0.534	0.583	0.604															
TDC5	0.288	0.404	0.472	0.585	0.554	0.762														
TDC6	0.278	0.329	0.513	0.662	0.599	0.648	0.542													
ITC	0.284	0.305	0.547	0.656	0.506	0.740	0.476	0.683												
ITC1	0.315	0.384	0.529	0.602	0.434	0.742	0.501	0.546	0.883											
ITC2	0.401	0.414	0.418	0.621	0.567	0.669	0.449	0.590	0.711	0.798										
ITC3	0.312	0.242	0.413	0.695	0.523	0.705	0.436	0.525	0.738	0.744	0.753									
ITC4	0.436	0.273	0.467	0.595	0.505	0.669	0.456	0.667	0.687	0.725	0.618	0.672								
IC	0.269	0.365	0.307	0.656	0.459	0.676	0.389	0.507	0.712	0.735	0.615	0.625	0.758							
IC1	0.289	0.412	0.530	0.704	0.577	0.693	0.453	0.530	0.848	0.699	0.685	0.590	0.664	0.757						
IC2	0.344	0.322	0.475	0.581	0.495	0.503	0.491	0.575	0.769	0.714	0.679	0.537	0.617	0.706	0.589					
IC3	0.387	0.369	0.491	0.714	0.532	0.528	0.393	0.491	0.535	0.419	0.519	0.614	0.622	0.650	0.478	0.892				
IE	0.396	0.298	0.532	0.651	0.428	0.709	0.533	0.632	0.639	0.644	0.643	0.568	0.577	0.716	0.457	0.788	0.831			
IE1	0.231	0.453	0.606	0.533	0.579	0.698	0.479	0.606	0.815	0.714	0.711	0.577	0.615	0.635	0.405	0.815	0.755	0.489		
IE2	0.409	0.391	0.522	0.684	0.504	0.662	0.485	0.622	0.753	0.741	0.728	0.629	0.681	0.582	0.398	0.796	0.754	0.423	0.514	
IE3	0.299	0.493	0.567	0.583	0.554	0.848	0.492	0.607	0.822	0.788	0.721	0.598	0.718	0.607	0.384	0.766	0.801	0.394	0.451	0.615

Table 3. Standardized Path Coefficient with Direct Effect

	Technological Distinctive Competencies	Information Technology Capability	Innovation Capability	Internet Entrepreneurship
Technological Distinctive Competencies	*	*	0.514	0.813
Innovation Capability	*	*	*	0.892
Information Technology Capability	*	*	0.274	0.119

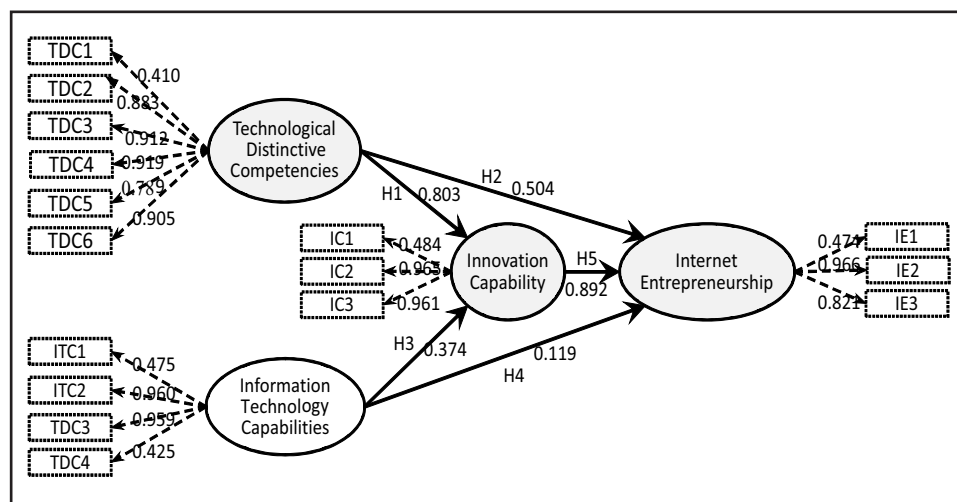


Figure 2. Path Coefficient

(ii) Fitness of Structural Model : After checking the fitness of measurement model, the fitness of structural model should be verified and for this purpose, we have used t -values for measuring the relationship between the constructs and we have used R -square for measuring the effect of independent variable on the dependent variable and f^2 for measuring the intensity of relationships among the constructs which are shown in Table 3 and Figure 2.

Analysis of Data

For testing the main hypotheses (direct relations), Figure 3 should be referred to. In this diagram the t -values are shown and for the indirect relations through a mediating variable, the Sobel test has been used. In Table 4, z -values for Sobel test have been presented which will be explained in detail next. Moreover as reported in Table 5, for measuring the intensity of mediating variable, VAF is used.

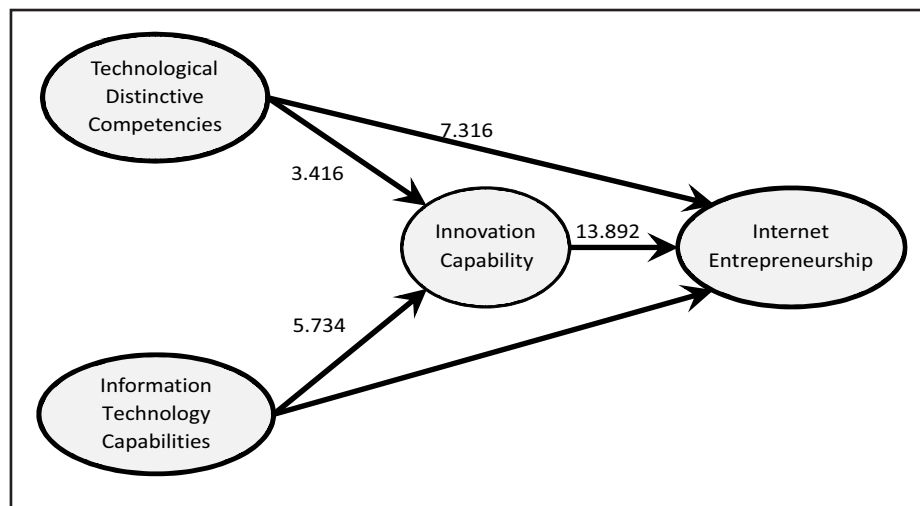


Figure 3. Calculated t -value

Table 4. Results of Sobel test

Depended Variable	Mediator Variable	Independent Variable	Z-Value	Result
Internet Entrepreneurship	Innovation Capability	Technological Distinctive Competencies	12.784	Accepted
Internet Entrepreneurship	Innovation Capability	Information Technology Capability	4.571	Accepted

Table 5. Value of VAF

Depended Variable	Mediator Variable	Independent Variable	VAF
Internet Entrepreneurship	Innovation Capability	Technological Distinctive Competencies	0.363
Internet Entrepreneurship	Innovation Capability	Information Technology Capability	0.672

Findings

As can be seen, the t -value for the relation between technological distinctive competencies and innovation capability was 3.416, and as it is conducted in the confidence level of 95%, the statistic is higher than the critical value of 1.96. So, the hypothesis 1 is accepted and therefore, it can be said that technological distinctive competencies have a positive and significant effect on internet entrepreneurship. The statistic also shows the acceptance of hypothesis 2 because

it was 7.316 and (not between +1.96 and -1.96), so the technological distinctive competencies have a positive, and a significant effect on innovation capability. As the t -value was 5.734 for hypothesis 3, so this hypothesis is also confirmed, and it can be expressed that information technology capabilities has positive and significant effect on the innovation capability. The statistic for the relation of information technology capabilities and internet entrepreneurship was 6.512, and as it was higher than 1.96. So, the hypothesis 4 is also verified and information technology capabilities have an effect on internet entrepreneurship. The t -value for the relation between innovation capability and internet entrepreneurship was 13.892 and it verifies the relationship, so the hypothesis 5 is accepted. As the hypothesis 6 incorporates a mediating variable, the indirect effects should be taken into consideration. First, the effect of technological distinctive competencies on the innovation capability and then the effect of innovation capability on the internet entrepreneurship should be verified. As they are already confirmed, it can be concluded that technological distinctive competencies have an effect on internet entrepreneurship through innovation capability. Therefore, hypothesis 6 is accepted. In hypothesis 3 we have seen that information technology capabilities have a significant effect on innovation capability and the effect of innovation capability on internet entrepreneurship is confirmed in hypothesis 5. So, information technology capabilities have an effect on the internet entrepreneurship via innovation capability. In other words, hypothesis 7 is confirmed.

Conclusion

From hypothesis 1, it has been confirmed that technological distinctive competencies have positive and significant effect on innovation capability. The standardized path coefficient for this relationship was 0.514 which shows that technological distinctive competencies can determine about half of the changes in the innovation capability directly. In other words, technological distinctive competencies have 51% effect on innovation capability. In the conceptual model of research, standardized path coefficient between technological distinctive competencies and internet entrepreneurship was equal to 0.803, which shows great effect of technological distinctive competencies on internet entrepreneurship, and it can be concluded that organizational competencies with individual competencies on top of them are the critical factors for organizations and internet entrepreneurs because they have 80% effect on internet entrepreneurship. The path coefficient between information technology capabilities and innovation capability was 0.274 which shows that there is not a strong relationship between them. It can be explained that some people think creativity and innovation is inherent and some people think it can be taught through education by a four step process which include perception, nurturing, inspiration, and innovation. The standardized path coefficient between information technology and internet entrepreneurship was 0.119, and it shows there is a relationship between them. As we are living in the communication age and according to the fast growth of new technologies, the field has been ready for new products and services, creative entrepreneurs can take advantage of information technology and establish entrepreneurial cyber (internet) businesses. The essence of entrepreneurship is innovation. In other words, entrepreneurship depends on creativity and innovation. The results of this research show that innovation capability can predict changes in internet entrepreneurship to a large degree and the standardized path coefficient between innovation capability and internet entrepreneurship was 0.892, which confirms our statement. This means that innovation capability has 90% effect on internet entrepreneurship. It should be mentioned that the greatest effect on internet entrepreneurship in this research was from innovation capability variable which shows the importance of innovation. In the previous sections, it has been confirmed that technological distinctive competencies have direct effect on internet entrepreneurship. In hypotheses 6, the indirect relationship through the mediating variable of innovation capability was taken into account. As it was mentioned earlier, the direct effect of technological distinctive competencies on internet entrepreneurship is 80%, and for checking the indirect effects we should consider the direct effect of technological distinctive competencies on innovation capability. The direct effect of innovation capability on internet entrepreneurship intensity were 0.514 and 0.892 respectively. With the help of these values and the formula to determine the severity of mediating role, the indirect effect of technological distinctive competencies on internet entrepreneurship was 0.363. This means that technological distinctive competencies also have positive and

significant effect on internet entrepreneurship indirectly but the indirect effect is less than the direct effect. Like hypothesis 6, we intend to measure the indirect effect of a relationship. The direct effect of information technology capabilities on internet entrepreneurship was 0.119, although the indirect effect through the mediating role of innovation capability was 0.244. The important point is that the indirect role of information technology capabilities on internet entrepreneurship is higher than its direct effect. In other words, information technology capabilities do not have an impressive effect on internet entrepreneurship, and when they are combined with innovation capability, the effect intensifies.

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