

# The Impact of IT Investments on Sales: Case of Iran Insurance Company

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## Abstract

The role of Information Technology (IT) in service organizations like banks and insurance offices is very important. These organizations are developing IT-based services because in this way they apply not only more economical methods comparing to traditional methods but also they could increase the innovating and fascinating aspects of IT-based services. In this essay, we have investigated the influence of information technology on insurance policy sales from the view of the property insurance experts in Iran Insurance, Tehran. The statistical population is all the staff of Iran Insurance at Tehran branches who are working in property insurance section and using information technology. After gathering questionnaires, we have described and categorized data from descriptive statistics prospectation. Then, we have tested the hypotheses using one-sample T test. According to the results, information technology investing which has been considered from four aspects- Communication frequency, decreasing consumers waiting time, cost reduction and developing innovation in products- would lead to insurance policy sales increasing.

**Keywords:** Insurance, insurance policy, information technology, one-sample T test.

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## Introduction

There is no doubt that information-based services has benefited mostly from technological progresses since these services make it possible that customers get services without physical presence. New technologies in telecommunications and computer could

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connect themselves to the system which offers services elsewhere. For example, customer could order computers in their houses or offices to buy or sell stock. Also, they could monitor their portfolio directly (Lovelock & Wright, 2007).

Here, we are going to investigate benefits of new technologies within insurance industry. We define several variables that measure our hypotheses and use a model which was developed by Sriram and Stump (2004). This model examines the nature of IT investments and discusses the strategic and operational consequences that this investment plays to enhance purchasing performance, as well as the social communications and inter-firm relationships that may arise (Sriram & Stump, 2004). The dependent variable which we measure the effects of two main independent variables is insurance policy sales in insurance industry. We also determine two main variables which are quality of service and competitive advantage. Then, in order to facilitate measuring these two main variables we divide each of them into two sub-variables which are measuring in next parts. Finally, we analyze these variables and test them which are describing in a conceptual framework and then present the conclusion.

## **Background**

As already mentioned these research hypotheses are based on Sriram and Stump model, therefore firstly, this model will be introduced. The role of IT investments in communication strategies, company relationships with other firms and performance improvement in organization has been investigated by Sriram and Stump. This model shows essential elements for motivating to invest in information technology (Fig. 1). As Sriram and Stump stated the model incorporates two complementary views of IT that may influence performance outcomes. The reflecting traditional perspective from the IT literature considers technology as locomotive that drives performances and productivity. From this perspective, the expectation is that IT investments, per se, should improve the performance. This is considered to be possible since IT's productivity enhance the features (e.g. automating labor, intensive process and cost reduction), and its role as enabler that makes possible development of management tools and other initiatives that rely on the generation, manipulation, and dissemination of vast amount of information (Sriram & Stump, 2004).

In general, there are several purposes and motivations behind IT investment decisions. In some companies, it is improved due to strategic considerations while here it is considered as a tool to create stable competitive advantage or productivity.

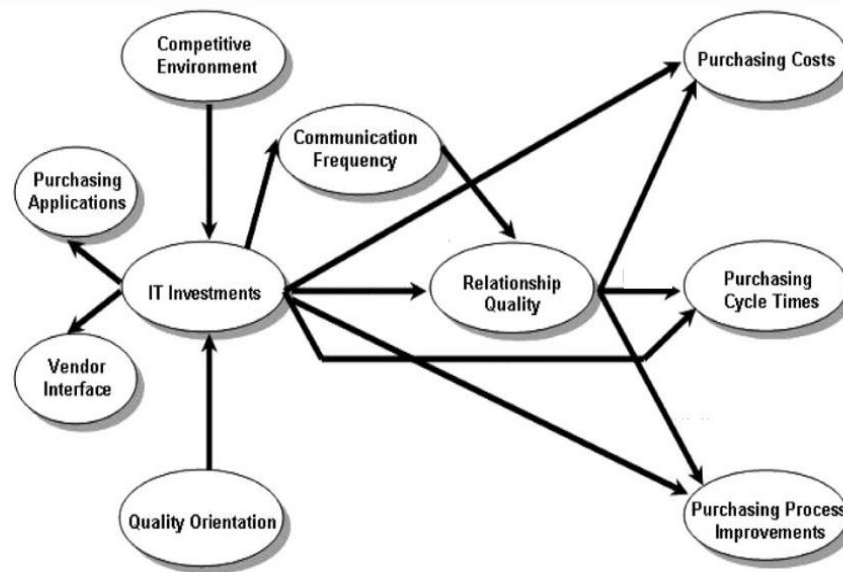


Figure 1 Sriram and Stump conceptual model

Information technology generally includes computer hardware and software, communication tools and personnel and resources that come with these facilities (Weill, 1992). These facilities are as a rationale that persuades manager to allocate budget to them. Some researchers tried to show that IT could bring about financial outcomes. Neirotti and Paolucci showed that the more distribution channels are connected through IT and computers, the more their efficiency ratio increase. Moreover, they proved companies with an executive strategy for IT has experienced an increase in their efficiency ratio (Neirotti & Paolucci, 2007).

Currently, information technology has changed the communication ways and even influenced organizations routine processes. New technologies are completely changing communication ways with their suppliers. Early investments in technologies such as e-mail and fax have been replaced with other more sophisticated logical systems (King, 2000). These days, business can use IT to gain global access to the wider range of goods and services, place order and exchange transaction information with vendors through electronic data interchange (EDI) and internet (Dunn & Thomas, 1994). Companies are competing to use information technologies which are considered necessary and beneficial. It is considered that information technology is much more economical comparing to traditional methods (Lengel, 2009).

The model which presents below is based on Sriram and Stump conceptual model (2004). Their findings showed indirect and qualitative results of IT which proved that there is a relationship between IT investments and quality of services and competitive advantage. Also, they proved that the growth and quality of contacts with customers and waiting time reduction could improve the quality of services and on the other side cost reduction and creating innovation will lead to creating competitive advantage. They focused mostly on qualitative results of IT, and we continue their studies and measure quantitative and objective results of IT in organizations. In other words, we used their

findings on the qualitative aspect of IT to show mentioned elements directly influenced insurance policy sales. As we investigated, there are many models show relationship between IT investments and insurance policy sales. Here we introduce the following model when we study existing literature in IT and relate it to insurance policy sales.

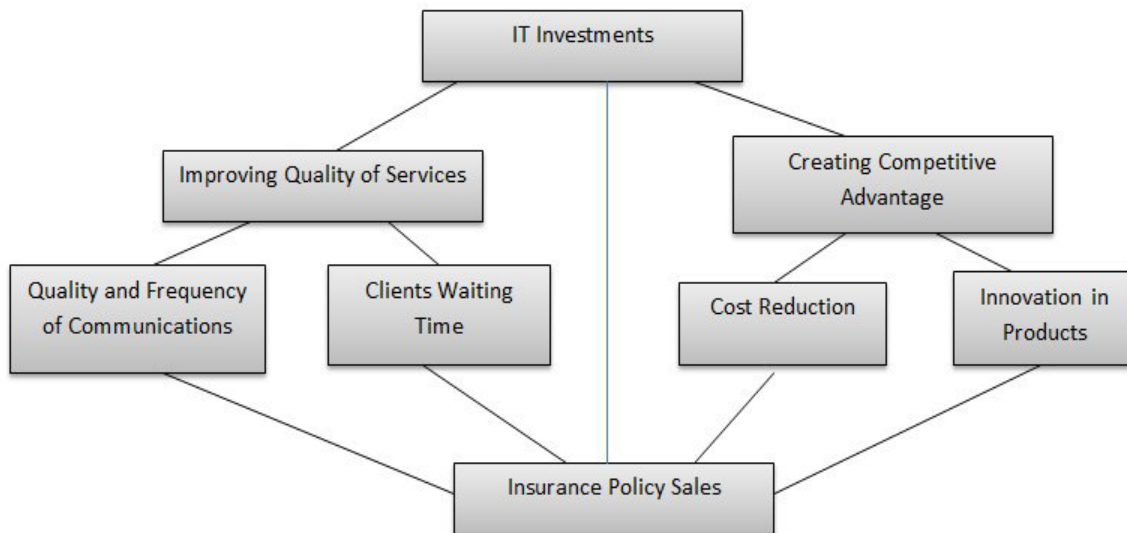


Figure 2 Research model

### Significance of the study

The insurance industry as all other industries has been changed by development of business administration over the recent years to take rapid progress in the new business world and to be able to meet the market demands based on the new conditions. The efficient use of information technology in the insurance industry is significant and if insurance companies do not neglect its benefits, they will ensure their growth in the future and face less unpredictable risks (Sarbakshian et al., 2017).

The traditional methods are not efficient in the contemporary insurance industry and should be accomplished scientifically and through the reliance of the past knowledge (Sarbakshian et al., 2017). There is no alarm from outdated methods yet and many insurers still highlight the use of old methods. Overlooking the numerous benefits of using IT will lead to economic losses in the short term and consequently can lead to the disappearance of the insurance industry in the long term (Moghadas nejad & Asgari Rankouh, 2014).

With the presence of various private and public insurance companies, the current level of insurance market in Iran is highly competitive and different organizations are working to attract customers and sell more insurance policies. Today, with the extensive use of

internet and computer, IT can play a very influential role in this regard. Various IT tools such as computers, tablets and smartphones all make it easier to get access to the customers, and can have many benefits in marketing, selling and paying damages in the insurance industry. Due to these circumstances and the pervasiveness of information technology and information systems, the use of this tool has been compelled in order to remain in the competitive environment to execute the activity of the organizations (Moghadas nejad & Asgari Rankouh, 2014). Investing in the use of information technology is essential if the insurance company plans its business horizons beyond the local market. In recent years, the use of information technology as a main factor of global developments has been led to a rapid changes in the business and the expansion of internet has made business conditions continually changing. The insurance industry, like all other industries, needs to be adapted to the new global transformations associated with business. Insurance companies that have been able to transform their business strategies and benefited from IT, have had the significant growth. Our country is a young country in the field of information technology and electronic insurance, and needs a long way to reach the desired situation in order to expand the electronic experience through the successful countries and international organizations (Hasanzadeh & Kazemnejad, 2011).

The development of information technology emerged with the initial steps of private companies. This development created an opportunity for other industries and corporations to flourish their structure based on information technology and exploit it as their greatest competitive advantage tool; thus moving from traditional and old structures to modern and new ones was initiated (Hasanzadeh & Kazemnejad, 2011).

In addition to the local and international requirements mentioned above, in the macro-area, managers also recognized the importance of IT in insurance. Under the comprehensive e-commerce development program, central insurance is required to study and policy-making with regard to providing new insurance services within the framework of e-commerce standards so that the insurance industry benefits from IT (Naderi, 2014).

In recent years, the adoption and use of this technology in the insurance has been very limited than the banking industry due to some considerations and complexities (Naderi, 2014). This study can help to objectify the results of using information technology in the daily affairs of insurance companies and encourage managers of other similar companies to invest more in this tool.

## **Hypotheses and Research Method**

In this section we want to test two main hypotheses and will break them down into more specific sub-hypotheses. After introducing all the hypotheses which are defining based on the research model in figure 2, the research method would be described. Our null hypothesis is demonstrated as follows:

H<sub>0</sub>: Insurance policy sales won't be significantly influenced by frequency and quality of communication with customers, cost reduction, customer waiting time reduction and creating innovation in products.

Despite the benefits of the competitive advantage for companies, some have questioned it, stating that IT is more appropriately viewed as only a competitive necessity rather than as a basis for competitive advantage (Booth & Philip, 1998). Sriram and Stump has shown relationship between competitive advantage and IT. They proved that one of benefits of IT is creating competitive advantage for the company. They believed that whether one subscribes to the competitive advantage or competitive necessity view of IT, both share the recognition that competition pressures firms to be more cost-efficient, more nimble, and more responsive to the dynamics of the market. Thus, firms look to IT investments to better coordinate inter-functional and inter-firm activities as a general means of improving organizational efficiency and effectiveness (Sriram & Stump, 2004). Here we are going to state our first main hypothesis:

**H<sub>1</sub>:** *Insurance policy sales in insurance industry are influenced significantly by competitive advantage.*

As already mentioned information technology is one of key trends which influence cost to create competitive advantage. Purchasing costs as the intermediate performance measure (Leenders & Fearon, 2005; McGinnis & Vallopra, 1999) involve the transaction costs expended to ensure the ongoing availability of required services. They include non-product costs related to processing orders, evaluating service quality, and comparing services with existing similar products. Through comprehension of IT, this tool would be as the value-added role beside the other innovation practices by decreasing costs and up-to-date information (Hrisak, 1996). With implementation of IT, all planning, measuring and following up processes require less manual work. All these could be happened due to notable standardization and centralization that comes with the help of IT systems (Nilsson et al., 2011).

**H<sub>1a</sub>:** *Purchasing cost reduction significantly influence on insurance policy sales.*

IT contributes to innovation in product significantly. Philipp Koellinger (2008) stated that internet based technologies were main trigger for innovation. It was found that all studied types of innovations are positively associated with turnover and employment growth. Also Chen and Tsou proved that the higher degree of information technology acceptance is the greater the degree of service product innovation. They proposed that the positive aspect of information technology acceptance enables a cooperation mechanism that improves a firm's capacity to create various innovation practices. Based upon the MIT90 model, information technology acceptance is harmonized and approached by components of information technology infrastructure, organizational structure, employee learning and strategic alignment (Chen & Tsou, 2007).

**H<sub>1b</sub>:** *Innovation in products significantly influence on insurance policy sales.*

Another aspect that IT contributes mainly is providing a vehicle whereby frequent, accurate, and secure information can be compiled, manipulated and exchanged (Stump & Sriram, 1997). Nowadays, improving quality of services has become one of main purposes for organizations which different methods used to fulfill it. Besides, productive firms are frequently using programs such as TQM, BPR, and JIT and these programs

provide enough motivation to invest in IT (Pollalis, 1996) since the need for correct and on-time information is essential within these programs. Moreover, IT enables organizations to improve the information (Dewett & Jones, 2001) As Sriam and Stump has proven quality of services are influenced positively by IT investments, we use this idea and state that there is a relationship between quality of services and insurance policy sales in insurance industry which is shown in our second main hypothesis:

**H<sub>2</sub>:** *Insurance policy sales in Insurance industry are influenced significantly by Quality of services.*

Also, we focus on Mohr and Nevin findings that IT could increase quality of communications. They believed that communications make distribution channels to stick to each other (Mohr & Nevin, 1990). Personal and official communications are activities that could send messages to strengthen the quality of relationship (Campbell, 1985). Anderson and Nares has suggested that open and frequent communications is necessary for building trustful and committed environment in long term (Anderson & Narus, 1990). Since a major role of IT investments is to facilitate the information processing and communication, they will lead to more communications with clients which are in turn will lead to building close relationship with customers, insurance policy holders and the other stakeholders (Dwyer et al., 1987). Companies could use Information Technology tools to increase communications with their customers. IT tools offer various types of media for communication such as text, pictures, audios and videos (Bhatt & Stump, 2001). IT investments can be an important medium for implementing collaborative communication initiatives and they could provide a platform for fostering greater communications frequency. On the other hand, we measure relationship between frequency of communication and sales in insurance industry within our first subsidiary hypothesis:

**H<sub>2a</sub>:** *Quality and frequency of communications significantly influence on insurance policy sales.*

We believe client waiting time influence on sales through IT investments. IT connects all departments, regions, and divisions in organizations and there is no need to traditional mailing systems which was very time-consuming as well as expensive so that all mails and messages are exchanged in real time through IT facilities. Consequently, this study includes cycle times as the intermediate performance measure (Leenders & Fearon, 2005; McGinnis & Vallopra, 1999). Purchasing cycle times relate to the time regarding insurance policy order, agent process, cost evaluation and issuing the insurance policy. It is quite clear that customers prefer to use insurance company services which the waiting time to get the insurance policy is the least.

**H<sub>2b</sub>:** *Client waiting time for the product or service significantly influence on insurance policy sales.*

Since this paper describes what exists and measures studied population through survey, we could say that it is using descriptive-survey method. Statistical population in this study is all Iran insurance staff working at 24 existing branches in Tehran who deal with at least

one type of insurance policy (property insurance policy) and use information technology at work. We used simple sampling method and selected 111 employees as sample. Moreover, we used questionnaire as data collection tool which were distributed among sample employees. We requested two experienced insurance experts and two university professors to review the data and their reliability. After correcting them the validity was confirmed. According to the results Cronbach Alpha coefficient is 0.92 which confirms the reliability of the questionnaire. Finally 107 of correct questionnaires were returned to us.

In order to test research hypotheses, we used one sample T parametric test and then compared true mean of population for each variable with comparing value which is 3 here. We should mention that as we compare normal true mean with a number in this research, we use one sample T parametric test. For all tests, null hypothesis is accepted where significant level was higher than error and  $H_1$  is accepted where less than error.

Alternative Hypothesis: Insurance policy sales will be significantly influenced by frequency and quality of communication with customers, cost reduction, customer waiting time reduction and creating innovation in products.

Table 1 One sample T-student test Result

Quality and frequency of communication with customers	Comparing Value: 3				
	No.	T-statistic	Freedom-degree	Significance level	Mean difference
	107	16.216	106	0.00	107
Customers waiting time reduction	Comparing Value: 3				
	No.	T-statistic	Freedom-degree	Significance level	Mean difference
	107	21.185	106	0.00	107
Cost reduction	Comparing Value: 3				
	No.	T-statistic	Freedom-degree	Significance level	Mean difference
	107	19.212	106	0.00	107
Innovation in products	Comparing Value: 3				
	No.	T-statistic	Freedom-degree	Significance level	Mean difference
	107	21.172	106	0.00	107

Now since for all variables significant level is 00/00, and it is lower than error (0.05), we conclude that  $H_1$  is confirmed.



## Results

Based on our findings and interpretations, we could say that two main variables of our research which are improving quality of services and creating competitive advantage influenced on insurance policy sales significantly. As we mentioned before, our research is continuing Sriram and Stump (2004) findings and is based on their model. They showed that within their tested population, there is a direct relationship between IT investments and our two main variables (improving quality of services and creating competitive advantage). In other words, they already proved that investments in information technology could improve quality of services and create a competitive advantage for the company. We based our research on their findings and divided each of these variables into separate variables as it is explained in Fig. 1 and measured their relationship with insurance policy sales.

We proved relationships of these variables with insurance policy sales and then conclude that dependent variable which is insurance policy sales is influenced by improving quality of services and creating competitive advantages and in broadly it is influenced by IT investments. In conclusion, we should say that organizations must be very careful about IT investment decisions because as we proved in this research it could influence on the company in many ways. Also, it is recommended to use cost effective analysis for using IT systems and other related projects. Moreover, considering proved effect of IT on organizations, it is suggested to establish a comprehensive plan for organizations so that companies could take maximum advantages of IT. Also, applying these systems could help companies to evaluate themselves regularly from different aspects and when it is necessary correct it.

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