Investigating the effect of customers' characteristics on the electronic salability of insurance products (case study: insurance companies in Tehran)

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Abstract: In modern markets, the advent of technology results in considerable changes in business activity particularly activities related to marketing, communication and distribution. Using the Internet in its business sense, guides organizations towards new global markets in such a way tht firms and consumers, for exchanging, obtain not only information and all goods and services, but also new opportunities. The present study is an applied one in terms of aims, and is a descriptive-survey study in terms of the nature of the research. The population of the study is managers and experts of the insurance industry in the City of Tehran and sampling was conducted using simple random sampling method for selecting the participants. The basis of ranking different insurance services/products is customers' characteristics.

Key words: Insurance; New technologies; Insurances electronic sales; Customers' characteristics

1. Introduction

By technological development regarding telecommunications and information technology, the insurance industry has transformed. As a result of the advent of these technologies, E-commerce gives the good tidings of new upheavals. Applying E-commerce provides insurance companies with this possibility to provide a direct and cheap way for exchanging information, products and services. The competitive and commercial pressures as well as changing expectations of customers have made applying IT more necessary (Donaldson, 2011) and in this arena, the success is for those who have the readiness to accept changes and flexibility.

Accordingly, the insurance industry of Iran should be in line with updated technology in the world. Since insurance is salable not purchasable, therefore, physical borders should be broken as rapidly as possible and customers should be considered more than ever.

Prioritizing electronic salability in the insurance industry is among the first measures in this long path because the most important issue in the life is to decide what is considered as more important (Ken Blanchard, 2012: 39).

Accordingly, in the present study, the researcher is to introduce the best insurance services/products in Iran for entering the Internet.

1.2. Statement of the problem and the significance of the study

The effect of technology in the markets of today is clear. In modern markets, the advent of technology results in considerable changes in business activities particularly those related to marketing, communications and distributions.

The appearance e of commercial web-based models has provided frequent opportunities for firms and companies, based on which concurrently, limitations related to realizing customers' expectations, speed and comparability of prices have been fulfilled. Now, the global market, improving services and competition of firms with each other (regardless of their sizes), have been changed into a necessity (E-Insurance Creating, 2012). Statistics indicate the importance of trade in services in global markets in such a way that 40% of the total global commerce is related to the business in the services section and during 15 years ago, trade in services has had an 8.5% of growth (Kata, 2012), particularly when the application ICT will play a significant role in promoting trade in services in the future.

The application of the Internet has a specific effect on executive methods of companies, representatives (agents) and the insurance supervisory authority in the future. In fact, insurers (insurance companies) and the insured (insurance customers) utilize equally the advancement of the Internet. The application of network information has provided a potential market for using more efficient and cheaper insurance products than the past. Insurance companies and agents with technical abilities can provide millions of available or potential insured with appropriate information.

Nowadays, IT is greatly used in the insurance industry for establishing relationship with agents, processing insurance, determining premiums,

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market analysis, sales forecasting and accounting. It is clear tht insurance is an industry dependent on information and therefore, ICT can have a lot of effects (Anektad, 2011).

From 3.5 trillion dollars of premiums all over the world, only 1% can be defined as electronic insurance, while from 1000 billion dollars of trade reinsurances, most of them are conducted using one of the electronic tools.

Regarding the great tendency of virtual companies (dot com), it is expected that electronic insurance have high growth and insurance and reinsurance companies and a large number of agents invest on the capabilities of E-commerce. It was predicted that in 2010, about 5 to 10 percent of the share of the market of Standardized personal insurance in the world is allocated to electronic insurance. This figure in the Europe has been about 3 to 5 percent. In spite of the fact that the presentation of an accurate figure is difficult, it is predicted that the timely sales of insurance products are increasing. In 2009-2012, among 166 million internet users in the US, 25 percent of them have used the tools of fining insurance information and 73 percent of them, have been used the Internet for knowing insurance rates (Anektad, 2011). Currently, the volume of insurance exchanges is a little figure, and this issue raises questions to the mind: are insurance products appropriate for electronic sales? Does the insurance industry this readiness and interest to use the internet technology? Does have the existence of activities of the electronic insurance in developing countries important for insurers and their customers? How customers can benefit from timely purchase of insurance products and which points should be improved? (Sigma, 2009: 3). Regarding the mentioned issues, and considering the rapid expansion of E-commerce in the world, the inevitability of using it, the role of E-commerce in maintaining, reinforcing and developing competitive situation of Iran in the world and savings due to E-commerce in Iran, and concerning the main and basic role of the insurance industry in providing appropriate grounds for developing economic activities, it seems that the insurance industry in Iran should consider and enter the arena of E-commerce in order to stay ahead in the competition. The insurance industry of Iran, for having a successful presence and attaining a desirable productivity requires doing extensive research in this regard. Since in Iran, there have been no research on these cases, as the first action, it is necessary that a research be conducted to answer this question what are the effects of customers' characteristics on the electronic salability of insurance products?

1.2. Research objectives

✓ Investigating the effect of customers' characteristics on the electronic sales of insurance
✓ Categorizing electronic salability of insurance products

✓ Investigating getting different insurance services/products electronic in public and private insurance companies

1.3. Research questions

✓ What are customers' characteristics on the salability of insurance electronic products in competitive markets?
✓ Regarding the mentioned characteristics, how is the classification of the salability of electronic insurance products?
✓ How is the capability of getting different insurance products/services in public and private companies in comparing each other?

2. Research methodology

The present study is a descriptive-survey research in terms of research method and is an applied one in terms of research aims. The population of the research includes the experts of the insurance industry in insurance companies of Tehran. Stratified random sampling was used to select participants. The instruments of collecting data were library studies, interviews and questionnaire. In the present study, the data analysis was conducted using SPSS and for analyzing tests, inferential statistics including Kruskal–Wallis test was used.

2.1. Population and sample size

The population of the research includes technical managers, deputies, heads of technical departments, their deputies and senior technical experts of insurance companies in Tehran who were 2031 individuals. Among these individuals, the technical experts of each field of insurance separately were considered and questionnaires randomly were distributed among them. The sampling method of the research was stratified random sampling. In the stratified random sampling, the units in the population are classified in classes covering those who are more homogenous in terms of characteristics. Usually, to classify the units of the population, a variable as a criterion is considered which is correlated with the variable of the research. Using Cochrane's formula and with the assumption that $p=q= 0.5$, $t= 0.96$, $d= 0.0$, $N= 2031$, the sample size was determined to include 495 participants and in general, 520 questionnaires were distributed and 490 questionnaires were returned. Questionnaires were collected by researcher referring in person to insurance companies. Submitting recommendations to studied departments by the technical managers of insurance companies was a reason of high return rate. Therefore, the number of the studied subjects in the study was 490 and table 1 indicates their number in terms of each field in each company.

Table 1: The characteristics of the population and sample

Row	Insurance companies	The number of the population	The number of the sample
1	Iran	657	130
2	Asia	339	60
3	Alborz	306	62
4	Dana	262	44
5	Parsian	75	50
6	Karafarin	56	14
7	Sina	56	38
8	Mellat	56	22
9	Razi	56	14
10	Day	42	14
11	Hafez	42	14
12	Saman	42	14
13	Tose'e	42	14
	Total number	2031	490

As Table 1 indicates, the proportion of samples in population in all companies is not the same and in private insurance companies, the proportion of sample to population is higher than other companies. This issue is due to the few number of the population of experts in the private section and on the other hand, the necessity of filling at least one number of the questionnaires of each field in these companies.

2.2. Participants' demographic characteristics

Table 2: Participants' age

Age/years old	The number of respondents	The percentage of respondents
Less than 24	30	6.12
25-34	137	27.96
35-44	59	12.04
45-54	145	29.59
55-64	11	2.25
Older than 65	1	0.20
Total answers	389	78.16
Without answer	107	21.84
Total	490	100

Table 3: Participants' years of services

Duration/Year	The number of respondents	The percentage of respondents
Less than 5	67	13.67
6-10	82	16.74
11-20	94	19.18
21-30	43	8.78
Higher than 30	12	2.45
Total answers	298	60.82
Without answer	192	39.18
Total	490	100

Table 4: Participants' gender

Gender	The number of respondents	The percentage of respondents
Female	133	27.14
Male	251	51.23
Total answers	384	78.37
Without answer	106	521.63
Total	490	100

Table 5: Participants' educational levels

Educational level	The number of respondents	The percentage of respondents
Diploma	28	5.71
Associate diploma	4	0.82
BA	218	44.49
MA	51	10.41
PhD	3	0.61
Total answers	304	62.04
Without answer	191	37.96
Total	490	100

3. Research findings

Ranking main variables of the research based on their importance for electronic purchase of insurances in all fields:

Since these variables have different weights in different societies and conditions, and their weights in Iran has not been measured, to determine the importance and priority of variable "customers' characteristics" in Iran and particularly the insurance industry, the researchers measured this variable and the participants were asked to rank the priority of main variables for electronic sales of insurances. The results are as follows:

Table 6: The eight of main research variable

	Customers' characteristics/percent
Industrial fire insurance	25.31
Non-industrial fire insurance	27.10
Residential fire insurance	27.10
Internal cargo insurance	25.97
Exported cargo insurance	28.57
Imported cargo insurance	27.27
Auto body insurance	24.68
Third-party insurance for cars	24.52
Individual accident insurance	23.03
Life and group events insurance	25.48
Individual life insurance	23.75
Health	22.36
Responsibility	29.68
Engineering	25.64

Table 6 indicates that in the electronic purchase of insurances in all fields in Iran, it seems that regarding the field of responsibility insurance, customers' characteristics has more importance than other fields. Since the basis of ranking insurance services/products in the present research and to measure these variables in the insurance industry, others secondary variables are determined, some of the characteristics of these variable are compared in the following order in all fields.

It should be explained that the variable of complicatedness with the information processing related to questions 2 and 3 of the questionnaire, the satisfaction with the information processing related to questions 9 to 19 of the questionnaire, and variables age, gender, education, and personality type of customers were calculated and presented with related information processing respectively.

Table 7: Comparing some of the characteristics of variables in different insurance fields

Customers' level of familiarity and trust						Products
Personality type	Educational level	Gender (men percentage)	Age group	Satisfaction (mean)	Complicatedness (mean)	
Easygoing	BA	61-80	45-54	3.53	1.84	Industrial fire insurance
Money lover	Diploma	61-80	35-44	3.44	2.84	Non-industrial fire insurance
Moral	Diploma	61-80	45-54	3.50	3.20	Residential fire insurance
Money lover	Diploma	61-80	35-44	3.60	2.37	Internal cargo insurance
Money lover	BA	61-80	35-44	3.62	2.17	Exported cargo insurance
Money lover	BA	61-80	35-44	3.67	2.15	Imported cargo insurance
Money lover	Diploma	61-80	35-44	3.28	3.52	Auto body insurance
Money lover	Diploma	61-80	35-44	3.21	3.68	Third-party insurance for cars
Money lover	Diploma	61-80	35-44	3.26	2.01	Individual accident insurance
Money lover	BA	61-80	35-44	3.48	1.70	Life and group events insurance
Money lover	BA	61-80	35-44	3.31	1.10	Individual life insurance
Money lover	Diploma	41-60	35-44	3.56	1.91	Health
Money lover	BA	61-80	35-44	3.38	1.70	Responsibility
Money lover	BA	81-100	35-44	3.41	1.20	Engineering

In table 7, the comparison of the complicatedness of products and satisfaction in different insurance fields was conducted via calculating and investigating mean scores and the magnitude of this figure, as presented in the questionnaire, means highness of electronic salability. Therefore, as observed, insurances for cars have the least level of complicatedness and consequently, the highest potential of electronic salability in terms of complicatedness, individual life insurance has the highest complicatedness and consequently the least potential of electronic capability.

Regarding variables of age, gender, education and personality type, comparison of frequencies in each field was conducted. Therefore, as table 7 indicates. Regarding age, it can be said that except industrial and residential fire insurances, other fields, based on this variable, increase its electronic salability.

And at last, regrind the last column of the table, it can be said that in industrial fire field, the highest electronic salability and in residential fire field, the lowest potential of electronic salability are present based on customers' purchase behaviors.

3.1. Ranking the 14 insurance services/products the capability of making insurance services/products electronic

One of the main findings of the present research is ranking the electronic salability of different insurance services/products in the insurance industry of Iran, which answers the main question of the research. According to the following ranking, auto body insurance and third-party insurance for cars have the highest levels of electronic salability and individual life insurance and engineering insurance have the lowest levels of electronic salability in the whole insurance industry of Iran from the perspectives of participants.

Statistical tests indicate that there is a significant different between the mean scores of the rank of each product/service for electronic salability in the whole insurance industry.

Table 8: Ranking of the 14 fields

Priority	Field	Number of participants	Ranking mean scores
1	Auto body insurance	30	388.67
2	Third-party insurance for cars	28	352.43
3	Residential fire insurance	35	327.06
4	Health	29	310.67
5	Non-industrial fire insurance	35	290.63
6	Internal cargo insurance	38	27.89
7	Exported cargo insurance	39	270.24
8	Imported cargo insurance	40	264.53
9	Life and group events insurance	34	259.43
10	Industrial fire insurance	37	233.49
11	Individual events insurance	35	232.29
12	Responsibility	39	166.19
13	Individual life insurance	35	65.31
14	Engineering insurance	36	65.1
	Total	490	

3.2. Ranking insurance services/products in a comprehensive classification (based on 6 main fields) the capability of making insurance services/products electronic

Based on a general classification, the insurance fields were divided into six general groups including (fire insurance (industrial, non-industrial, and residential fire), engineering, responsibility, cargo (internal, exported, imported), cars (auto body, third-party), persons (individual events, life and group events, individual life, health). this classification is usually based on the categorization of fields in insurance companies. If the electronic salability of insurances can be viewed from this perspective, the following results in table 9 are obtained.

The mean scores of the ranks of the six insurance services/products fields have significant differences with each other.

Table 9: Ranking the degree of electronic salability of the six main fields in the insurance industry of Iran

Priority	Field	Number of participants	Ranking mean scores
1	Cars	58	371.17
2	Fire	107	285.79
3	cargo	117	268.48
4	Persons	133	212.38
5	Responsibility	39	166.91
6	Engineering	36	65.1
7	Total	490	

3.3. Comparing the insurance companies of public and private sectors in terms of the capability of making insurance services/products electronic

Table 10 indicates a summary of ranking insurance products in the whole insurance industry and in the whole insurance companies of Iran.

Table 10: T-test for the two private and public sectors

	Number of participants	Mean	SD	Mean errors
Public	296	1.54681	0.1619215	0.009411496
Private	195	1.5929	0.1893681	0.013131263

Table 11: Independent t-test

	Leven's Test for Equality of Variances		t-test for Equality of Means			Mean difference	Errors difference
Equal Variances assumed	F	Sig.	T	df	Sig. (2-tailed)		
Equal Variances not assumed	2.94	2.09	-2.93	489.00	0.00	-0.05	0.02

Regarding the fact that the t-values are bigger than t-table (2.93 and 2.85>1.96), therefore, it can be concluded that the null hypothesis is rejected and H_1 was confirmed. The SIG_0 related to the table indicates that there is a significant difference between the mean scores of the two groups. Therefore, comparing private and public sectors of insurance industry indicates that there is a significant difference in terms of electronic salability between private and public insurance companies and private ones enjoy a higher potentiality for electronic sales.

3.4. Factor analysis and presentation of the research model

After identifying important factors and variables in insurance electronic sales and ranking the electronic salability of different insurance services/products in terms of these factors in the insurance industry of Iran, the researchers were to present a model for investigating and identifying different insurance services/products in the insurance industry of Iran. To achieve this objective, factor analysis technique was used. In the present study, to create factor analysis, stages were taken as follows:

To find out that in the present study is allowed, and there is relevance for sampling, KMO statistic was used. In fact, this statistic is an indicator for comparing the values of the simple correlation coefficient of all variables. The high values of KMO are a reason for confirming factor analysis. To test the intensity of the relationship of variables, Bartlett's test was used.

The results indicate that the value of KMO is obtained as 0.789 (the fact that this value is bigger than 0.7 indicates the significance of factor analysis). Bartlett's test with df =604 and value 3873 is significant. As mentioned, the significance of Bartlett's test is the least requirement to conduct a factor analysis.

Table 12: General information of variance

Factors	Special value	Total	Variance percentage	Percentile	Cover percentage of common variance	Validity coefficient
1	2.552	2.884	10.682	21.469	34.99	0.81
2	1.308	1.672	6.194	52.381	85.37	0.31

Regarding the present study which is an exploratory one and its objective is to summarize data, analyzing main components is used. In other words, the variance of the correlation of measured variables has the original value 1.

These results indicate that the two factors have special values bigger than 1. This issue indicates the confirmation of the validity of factors. Customers' characteristics have a factor loading bigger than 0.5.

Table 13: The second factor: customers' internet belief and culture

Variable	Factor loadings
Customers' considering electronic purchase reliable	0.546
Customers' skills in using the Internet	0.85
Customers' accessibility to the Internet	0.897
Customers' culture in using the Internet	0.846

Regarding the sixth factor which conducts the measurement of "customers' personal characteristics", has an acceptable factor loading and due to more having more relevance, it was put in this factor (Table 14).

Table 14: The sixth factor, "customers' personal characteristics"

Factor loading	Variable
0.769	Customers' risk appetite
0.891	Customers' education
0.632	age

4. The summary of research findings

4.1. Analyzing the findings

In Iran, among other available insurances, people have more familiarity with insurances of cars and these insurances have the highest capability for being electronic. Another finding of the research is investigating the comparison of some of the characteristics related to main research variables in all fields. As table 7 indicates, in the section of customers' characteristics, "age", "gender", "education" and "personality type were compared with each other in terms of purchase behaviors. The results indicated the lowness of the degree of complicatedness in the fields of auto body insurance and third-party insurance for cars.

The results indicate that in the field of residential fire insurance, higher the age means scores is higher than other fields. It seems that the main reason for this issue in residential fire field is that in Iranian society, due to available economic problems; usually individuals can afford to buy houses in older ages. Of course, there is a part of people who can own houses, but it should be noted that insurance is for the middle class of the society because low-income classes cannot purchase insurances and high-income ones have no need to insurance products.

Another part of customers' characteristics is gender. In engineering field, 61-80 percent of the customers are men. This is due to the fact that one of the commonest mandatory insurance is the engineering field. Engineering insurance covers all risks of contractors. It is obvious that most of the insured of this field are men. But, in health field, the percentage of men is lower than those of women. This issue can be due to the fat that affairs related to health insurances are managed by women because health insurance is a group insurance particular to the staff of an organization. In this method, one person as the agent of insurance affairs makes a contract with the insurance company.

Customers' educational degrees in different fields indicate that almost a half of the fields includes diploma and another half includes BA. It is clear that in the fields of auto body and the third-party insurance for cars, the educational degree of the owners of cars is diploma, particularly that a significant percentage of the owners of cars have lower educational degrees and uses their cars as main resources of gaining income. Finally, regarding the personality type, it can be said that most of human beings, particularly in Iranian society, due to economic problems are in search of financial benefits. Therefore, in all fields, except industrial and residential fire insurances, the percentage of money lovers is higher. In the field of industrial fire, according to the findings, most of customers are easygoing. The insurance of industrial fire is specific to great plants and industries and these plants are outside the scope of cities. This issue makes customers' relations with insurances companies more difficult. Therefore, customers are ready to pay more money per receiving appropriate services and more convenient access to insurers.

- One of the important findings of the present study is presenting a framework for identifying appropriate insurance services/products for selling via the Internet in Iran. This framework helps this industry in line with ranking services/products and the 14 different insurance fields in this framework were tested and ranked. The results indicated that in the insurance industry of Iran, the highest levels of electronic salability are related to auto body insurance and the third party insurance of cars and the lowest levels of electronic salability are related to engineering and individual life insurances.

- In the insurance industry, the magnitude of companies depend the size of companies' portfolios and the income from premiums. In all insurance companies in Iran, insurance services/products were compared in terms of electronic salability. Table 1 presents a summary of ranking insurance services/products in the whole insurance industry and in all insurance companies of Iran. Iranian Insurance Company, as the greatest insurance company in the public sector, and Pasian Insurance Company as the greatest one in the private sector were analyzed.

5. Suggestions for the insurance industry

Since it is inevitable to enter the virtual world; therefore, it is recommended that insurance companies, for successful entrance and present in the Internet, regarding the importance of the factor of familiarity and confidence whose satisfaction is an important variable, pay attention to improving and enhancing their own brands and provided services and consider customers' satisfaction. They should always consider this issue that customers are ready to pay more money for being satisfied with the quality of services and the mode of providing them.

It is recommended that the insurance industry of Iran, for a successful presence in the web, consider the prioritization of table 8 and prioritize electronic sales of services/products having high potentials in their plans for entering the Internet. These measures result in acculturation and creating familiarity and confidence of customers to electronic purchase and provide grounds for electronic sales of products with lower potentials. Regarding products with lower potentials, for electronic sales, insurance companies should provide consultation and information regrinding companies, the rates and conditions of services/products and documents for the payment of compensation in the web. This issue is important due to the fact that customers of individual life insurance are usually educated individuals and have more access to the internet. Therefore, making different insurances services/products and the brands public via the web and informing these fields result in purchasing premiums in other fields.

It is suggested that insurance companies of the public sectors for surviving in the competitive market, provide necessary requirements for electronic sales of their own services/products. It is also suggested to the private companies that in addition to keeping and enhancing the quality of service providing, sell electronically services and products having a high potentiality of getting electronic.

The activity of powerful private banks, particularly the holding of insurance companies (banks and insurance companies which have the same brand), has provided a valuable opportunity for these companies to be able to act more adroitly than their competitors and provide the grounds of electronic transference of money with their customers.

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