

The Role of Credit Scoring, Cost and Product Discrimination in Improving the Competitiveness of Jordanian Insurance Companies

Mohammad H. Saleh¹, Jamil J. Jaber¹ & Abdullah A. Al-khawaldeh²

¹ Department of Risk Management & Insurance, The University of Jordan, Aqaba, Jordan

² Department of Accounting, Hashemite University, Zarqa, Jordan

Correspondence: Mohammad H. Saleh, The University of Jordan, Aqaba, Jordan. Tel: 962-032-090-450. E-mail: Mohsaleh1966@yahoo.com or Mohd.saleh@ju.edu.jo

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Abstract

The turbulent start of the new century has brought new challenges for firms and countries. Survival and success in this period increasingly depends on competitiveness. Competitiveness is described in different ways by researchers. The focus of this paper extends earlier works on the role of credit scoring, cost of insurance and product discrimination in improving competitiveness in insurance companies to increase the demand of insurance policies. The paper strength is that the competitive advantage of insurance companies is measured from perspective of the insured. In the result show there is a significant effect of credit scoring, cost and product discrimination on competition in insurance companies. Also, there is a lack of understanding of the concept of insurance in Jordanian companies because they lack people who are specialist in insurance. OLS and ANOVA test are used in this paper.

Keywords: credit score, insurance policy, competitiveness, insurer, and policyholder

1. Introduction

1.1 Intruduction of the Study

Economic development is improved by the insurance sector through encouraging investments and reducing poverty for several reasons. First of all, pure risk is reduced by insurance that transfer risk from insured to insurer. In addition, income at retirement is improved by a life insurance contract. However, the competitiveness in insurance companies to attract the grater share from policyholders contributes to enhance its performance.

Several definitions of competitiveness have been proffered with no general agreement on any given one. The aim of this paper is to extend earlier works on the role of credit scoring, the cost of insurance and product discrimination on competitiveness in insurance companies to attract the lion share from policyholders. In the past few years, the business of credit products and insurance products increased enormously. Approximately every day, individual's and company's records of past lending and repaying transactions are collected and evaluated to know if they creditworthy to complete their commitments (Hand & Henley, 1997). Credit scoring is basically a way of recognizing if the insurer is creditworthy that has ability to compensate at the time of loss or not. (Serio, 2003) said that credit history can be used effectively to differentiate between groups of policyholders. Therefore, He believes credit scoring is an effective tool in the underwriting and rating of personal lines of insurance. (Richards, 2009) used Iowa consumer's perspective to determine insurance eligibility. He used the survey conducted of 29 questions and distributed it to a randomized, cross-sectional sample of Iowans, and conclude that the belief that this is unfair, but lacks the necessary justification for the claim.

In Jordan, there are twenty-five insurance companies, even though the population of Jordan in 2015 is almost seven million. Health and auto insurance have the lion share in Jordanian insurance market. The percentage of health insurance and auto insurance is almost 61 percent of total insurance premiums. However, the insurance policy is a contract between the insurer and insured that is known as the policyholder. The insurer promises to pay for losses that the insured suffers during the time of coverage and the insured promises to pay the premium. The elasticity of insurance demand is related with the performance of insurance companies to increase its pool from insured. (Nakata & Sawada, 2007) said that wealth elasticity of insurance demand for non-life insurance is smaller than unity for the upper, middle and high wealth countries. In low wealth countries, the wealth elasticity

of insurance demand is greater than unity.

Moreover, product differentiation is another way to improve competitiveness in insurance companies. It's a marketing process that shows cases the differences between products. Differentiation looks to make a product more attractive than other competing products. Successful product differentiation creates a competitive advantage for the issuer of insurance policies, as insured view these policies as unique or superior. (Elango, 2008) investigates the relationship between product diversification and firm performance in the US PC insurance industry using data for 1994-2002. The extent of product diversification shares a complex and nonlinear relationship with firm performance. The findings suggest that performance benefits associated with product diversification are contingent upon an insurer's degree of geographic diversification.

1.2 Importance of the Study

This paper differs from the earlier mentioned studies in several aspects. First, it studies the Jordanian insurance sector. Secondly, it used Jordanian insured perspective to determine the competitiveness in insurance companies. Finally, it measured elasticity of insurance demand in Jordan.

1.3 Literature Review

The 21st century begins with turbulence. Survival and success in such turbulent times increasingly depend on competitiveness. The criteria of competitiveness change over the time. Competitive definition of companies is their ability to meet different consumer desires by providing products and services of at a fair price. Scoring system has an operational advantage of reducing premium calculations and can be treated as a more sophisticated device for customers to assess their individual risks. Scoring system may be used by insurers to differentiate between high and low risks insureds, thus allowing the profitability of insureds to be predicted in order to improve competitiveness (Ismail & Jemain, 2008). On the other hand, (Momani & Mqatif, 2012) investigate the effect some factors on building advantage competitiveness in insurance sector in Jordan. This paper finds that quality and prices show a positive effect on competitive advantage for these companies in Jordan. (Eling, 2013) studies the determinants of micro-insurance demand. This paper identifies 12 key factors affecting micro-insurance demand, and further highlights that research focused on the role of contract performance (including basis risk and quality), trust, financial literacy and informal risk-sharing mechanisms. (Dragos, 2014) investigates life and non-life insurance demand. The different effects of influence factors in emerging countries from Europe and Asia, this paper concluded that the Urbanization, incomes and their distributions, and the population degree of education are relevant factors for the development of insurance sector. However, (Thornton et al., 2010) found the direct evidence about the importance of transaction costs in the health insurance for the informal sector in Nicaragua. The enrollment procedure for the health insurance they offer in Nicaragua normally requires about a day of work to complete. When, instead, they allow market vendors to sign up directly at their market stall, uptake is about 30 percentage points higher. (Adamu, 2011) discovered that economic environment significantly affects the performance of Insurance Companies in Nigeria. Multivariate regression and ANOVA were used to analyze the data collected and test the hypothesis formulated. (Patrick et al., 2013) found that there is misinformed about the importance of credit rating in people seeking insurance, and they think that using credit information to determine insurance reliability is unfair. (Fadun, 2013) examines the impact of Information and Communication Technology (ICT) on insurance companies' profitability. There is a positive relationship between ICT adoption and insurance companies' profitability in Nigeria. This implies that adoption of ICT by insurance companies can enhance their efficiency, their quality of service delivery, and their profitability. (Kiragu, 2014) used a survey of insurance firms in Kenya to establish whether the insurance products influence for building competitive advantage in the insurance firms. The study concludes that the most significant factor is government regulation as a unit change leads to a 2.45 increase in building competitive advantage followed by insurance products at 1.97. The study concludes that insurance products were effective in meeting the needs of customers. The study recommends that insurance companies monitored/assessed based on their level of risk. (Mwangi et al., 2015) determined the factors that affect the profitability of general insurers in Kenya. This study suggested that for general insurers in Kenya to perform better, improve competitiveness they should increase leverage, equity capital and quality of staff.

1.4 Hypotheses

The main hypotheses in our study are divided by groups as following:

- | | |
|--------|--|
| Group1 | H0: There is no significant impact of independent variables on dependent variables |
| | H ₀₁ : There is no significant impact of cost for insurance policies on competitiveness in insurance companies. |

- H₀₂: There is no significant impact of product discrimination on competitiveness in insurance companies.
- H₀₃: There is no significant impact of credit scores on competitiveness in insurance companies.
- Group 2 H₀: There is no significant difference in mean of the impact of independent variables on competitiveness in insurance companies based on qualification.
- H₀₄: There is no significant difference in mean of the impact credit scores on competitiveness in insurance companies based on Majors.
- H₀₅: There is no significant difference in mean of the impact of cost for insurance policies on competitiveness in insurance companies based on Majors.
- H₀₆: There is no significant difference in mean of the impact product discrimination on competitiveness in insurance companies based on Majors.
- Group 3 H₀: There is no significant difference in mean of the impact of independent variables on competitiveness in insurance companies based on the type of policies.
- H₀₇: There is no significant difference in mean of the impact credit scores on competitiveness in insurance companies based on the type of policies.
- H₀₈: There is no significant difference in mean of the impact of cost for insurance policies on competitiveness in insurance companies based on the type of policies.
- H₀₉: There is no significant difference in mean of the impact product discrimination on competitiveness in insurance companies based on the type of policies.

2. Data Sources

2.1 Descriptive of Variables

The data was collected by questionnaires and interviews in this study. The questionnaires were distributed to 250 employees who are responsible to choose the insurance policies in their companies in Jordan. We choose 182 from questionnaires and we exclude the rest. The data was analyzed and that followed with a number of basic statistical techniques in order to identify and interpret the results by using the SPSS-20 program.

2.2 Measures and Covariates

Cronbach's alpha coefficient uses to measure the reliability of study. The Cronbach's coefficient alpha for all variables is 68% that is greater than 60%. It means there is highly consistency between questions in the questionnaire (Sekaran, 2010). Also, KMO test is used to test the adequacy of the sample size, where its value reached to 0.73 that is greater than 0.5. So, the sample size is appropriate which means the reliability of the results. (Hair, et al., 2010) Fiedel (2005).

3. Statistics and Data Analysis

Table 1. The descriptive statistics of demographic variables in our sample

		Frequency	Percent
Gender	Male	152.00	83.50
	Female	26.00	14.30
	Missing value	4.00	2.20
	Total	182.00	100.00
Age	Less than 30	56.00	30.80
	30-40	78.00	42.90
	More than 40	46.00	25.30
	Missing value	2.00	1.10
	Total	182.00	100.00
Education	Graduate	110.00	60.40
	postgraduate	12.00	6.60
	Others	58.00	31.90
	Missing value	2.00	1.10
	Total	182.00	100.00

Industry	industry	26.00	14.30
	services	96.00	52.70
	others	58.00	31.90
	Missing value	2.00	1.10
	Total	182.00	100.00
Occupation	General Manager	94.00	51.60
	Chair of department	54.00	29.70
	Employee	32.00	17.60
	Missing value	2.00	1.10
	Total	182.00	100.00
Experience	Less than 5 years	28.00	15.40
	5-10 years	64.00	35.20
	More than 10 years	88.00	48.40
	Missing value	2.00	1.10
	Total	182.00	100.00
Qualification	Insurance	6.00	3.30
	Business management	38.00	20.90
	others	134.00	73.60
	Missing value	4.00	2.20
	Total	182.00	100.00
The types of insurance policies	Property insurance	80.00	44.00
	Life and medical insurance	36.00	19.80
	both	62.00	34.10
	Missing value	4.00	2.20
	Total	182.00	100.00

Table 1 describes the frequencies and percentages for the demographic employees who have the authority to choose the insurance policies in the companies in Jordan. It appears the percentage of males is 83.5%, but the percentage of females is 14.3%. Furthermore, the percentage of graduate, postgraduate and others are 60.4%, 6.6% and 31.9% on succession. Moreover, the percentage of people who work in industrial companies is 52.7%, but the percentage of people who work in service companies is 14.3%. In addition, the percentage of general manager, chairman and employee are 51.6%, 29.7% and 17.6% on succession. Also, the percentage of people who have qualification in insurance is 3.3%. And, the percentage of people who have qualification in business management is 20.9%. On other hand, the percentage of people who don't have qualification in insurance or business management is 73.6%. Finally, the percentage of the companies that have property insurance policy is 44%, but the percentage of companies that have life and medical insurance is 19.8%.

Table 2. The mean and standard deviation for survey items

		Mean	S.D	Level
Credit Score	Q1	4.36	0.81	H
	Q2	3.44	1.08	M
	Q3	4.18	0.84	H
	Q4	4.19	0.84	H
	Q5	4.11	0.90	H
	Q6	4.09	0.85	H
	Average	4.06	0.50	H
Cost of Insurance "premiums"	Q1	3.95	1.13	H
	Q2	2.69	1.26	M
	Q3	3.88	1.01	H
	Q4	3.76	1.06	H
	Q5	3.46	1.11	M
	Average	3.55	0.65	M

Discrimination of insurance policies	Q1	4.45	0.78	H
	Q2	3.67	1.17	M
	Q3	4.09	0.91	H
	Q4	4.42	0.73	H
	Average	4.15	0.50	H
Competitiveness	Q1	3.57	1.20	M
	Q2	4.53	0.69	H
	Q3	3.95	0.87	H
	Q4	3.90	1.04	H
	Q5	4.48	0.72	H
	Q6	4.33	0.90	H
	Average	4.13	0.46	H

Likert scale has been adopted, consisting of five degrees to determine the degree of agreement of each paragraph of the questionnaire. The mean and standard deviation for the survey items shows in the Table 2. It appears that there is a high impact to the credit scoring of insurance policies for buying the insurance policies. The mean of people who think that the credit scoring of insurance policies is very important for buying the insurance policies is 4.06 and the standard deviation is .5. Furthermore, there is a medium impact to the cost of insurance to choose the insurance policies. The mean of people who think that the cost of insurance is very important to buying the insurance policies is 3.55 and the standard deviation is .65. Moreover, there is a high impact to the discrimination of insurance policies to buying the insurance policies. The mean of people who think that the discrimination of insurance policies is very important for buying the insurance policies is 4.15 and the standard deviation is .5.

Table 3. The correlation between survey items

	Competitiveness	Cost of Insurance “premium”	Discrimination	Credit Score
Competitiveness	1	.318**	.423**	.496**
Cost of Insurance “premium”		1	.220**	.333**
Discrimination			1	.414**
Credit Score				1

**. Correlation is significant at the 1% level (2-tailed).

The Table 3 appears the correlation matrix for dependent variable and independent variables. There is no multicollinearity problem between the continuous independent variables; this means that the explanatory variables are sufficiently independent of one another. We can note from the table the correlation between cost of insurance and discrimination is 0.42 that is weak because it's less than 0.5. And, the table shows the correlation between cost of insurance and credit score is 0.33 that is also weak because it's less than 0.5. Furthermore, the correlation between credit score and discrimination is 0.41 that is weak because it's less than 0.5.

Table 4. Full regression models between dependent variable and independent variables

Model	Least Squares (OLS)		
	B	S.E	t
Constant	1.54	0.28	5.42**
Credit Score	0.31	0.06	4.83**
Cost of Insurance	0.11	0.05	2.26*
Discrimination	0.23	0.06	3.67**
R Square	0.32		
Adjusted R	0.31		
Durbin-Watson	2.09		
F-test	28.34		
Sig.	0.000		

Note. ** significant at 1%, *significant at 5%.

In the Table 4 appear the multiple regressions for the impact of the cost of insurance, discrimination and credit score on competitiveness between insurance companies. As indicated from table above, we found that there is a positive significant relationship between the costs of insurance on competitiveness. So, we reject H_{01} (H_{01} : there is no significant impact of cost for insurance policies on competitiveness in insurance companies.) at 5% level of significant. The elasticity of insurance demands less than one. That means the insurance is necessary product for insured because most insured in Jordan have to have compulsory insurance for their automobiles rather than other kinds of insurance. This result accords to (Nakata, 2007) and (Thornton, 2010). On the other words, the decreasing in premium contributes about 10 percent in improving the performance of insurance companies in order to attract the lion share from insured. However, we found that there is a positive significant relationship between discrimination of insurance policies on competitiveness in insurance companies. So, we reject H_{02} (H_{02} : there is no significant impact of product discrimination on competitiveness in insurance companies.) at 1% level of significant. This result accords to (Fadun, 2013). On the other words, the discrimination of insurance products contributes about 23 percent in improving the profitability of insurance companies by increasing their pooling from insured. On the other hand, we found that there is a positive significant relationship between credit scoring of insurance companies on competitiveness in insurance companies. So, we reject H_{02} (H_{03} : there is no significant impact of credit scoring on competitiveness in insurance companies.) at 1% level of significant. This result accords (Serio, 2003). On the other meaning, the credit scoring gives a sign to solvency and credit worthy of insurer to pay the compensations in the future. So, credit scoring contributes about 31 percent in improving the competitiveness. Also, we can see that the independent variables can explain approximately 32 percent from the competitiveness in insurance companies (R-square 32%). And, Durbin-Watson test is 2.09. The multiple regression is significant at 1%.

Table 5. ANOVA-test for independent variables on competitiveness in insurance companies based on qualification

Variables		Mean	ANOVA-test				
				Sum of Squares	df	Mean Square	F Sig.
Credit Score	Insurance	3.87	Between Groups	1.033	2	0.517	2.12 0.123**
	Business management	3.85	Within Groups	43.133	177	0.244	
	others	4.15	Total	44.166	179		
Cost of Insurance "premium"	Insurance	3.13	Between Groups	6.967	2	3.483	8.828 0.178*
	Business management	3.48	Within Groups	69.843	177	0.395	
	others	3.59	Total	76.809	179		
Product Discrimination	Insurance	3.43	Between Groups	2.127	2	1.063	4.532 0.012***
	Business management	4.04	Within Groups	41.531	177	0.235	
	others	4.25	Total	43.658	179		

Note. ***significant at 5%, **significant at 15%, *significant at 20%.

In the Table 5 appears the ANOVA test for the role of the independent variables in competitiveness for insurance companies based on qualification. In credit score, we note from the table that the sum of square between groups is 1.03 and within groups is 43.13 at ($F=2.12$) with significant less than 15%. Consequently, we reject (H_{04} : there is no significant difference in mean of the impact of the impact credit scores on competitiveness in insurance companies based on qualification). Furthermore, we find that there is significant less than 20% in the cost of insurance. The sum of square between groups (qualification) is 6.97 and within groups (qualification) is 69.84 at ($F=8.83$). Consequently, we reject (H_{05} : there is no significant difference in mean of the impact of cost for insurance policies on competitiveness in insurance companies based on qualification). In the product discrimination, we find that the sum of square between groups is 2.13 and within groups is 41.53 at ($F=4.53$) with significant level less than 5%. Consequently, we reject (H_{06} : there is no significant difference in mean of the impact of the impact product discrimination on competitiveness in insurance companies based on qualification).

In the other words, we can note that there are significant differences in perspective between groups that have the authority to give the decisions about selecting the insurance policies in their companies. In our sample, the percentage of people who have insurance, business, and other degree is almost 3%, 21% and 74% respectively. This means the great percentage of people who have the authority to selecting insurance product for their firms is non specialist in insurance. Also, the companies in Jordan avoid hiring people who are specialist in insurance to selecting their needs of insurance product. Therefore, there is a lack of understanding of the concept of insurance

in Jordanian companies.

Table 6. ANOVA-test for independent variables on competitiveness in insurance companies based on the type of policies

Variables		Mean		ANOVA-test				
				Sum of Square	df	Mean Square	F	Sig.
Credit Score	Insurance	4.19	Between Groups	3.017	2	1.508	6.437	0.002***
	Business management	3.82	Within Groups	41.007	175	0.234		
	others	4.01	Total	44.024	177			
Cost of Insurance “premium”	Insurance	3.60	Between Groups	1.763	2	0.881	2.079	0.128**
	Business management	3.34	Within Groups	74.186	175	0.424		
	others	3.61	Total	75.949	177			
Product Discrimination	Insurance	4.23	Between Groups	1.003	2	0.502	2.199	0.114**
	Business management	4.24	Within Groups	39.918	175	0.228		
	others	4.07	Total	40.921	177			

Note. ***significant at 5%, **significant at 15%, *significant at 20%.

In the Table 6 shows the ANOVA test for the impact of the independent variables on competitiveness in insurance companies based on types of insurance policies. In credit score, we find that from the table the sum of square between groups is 3.02 and within groups is 41.01 at (F=6.44) with significant level less than 5%. Consequently, we reject (H_{07} : there is no significant difference in mean of the impact of the impact credit scores on competitiveness in insurance companies based on types of insurance policies). In the cost of insurance, we can note that the sum of square between groups (types of insurance policies) is 1.76 and within groups (types of insurance policies) is 74.19 at (F=0.128) with significant less than 15%. Consequently, we reject (H_{08} : there is no significant difference in mean of the impact of cost for insurance policies on competitiveness in insurance companies based on types of insurance policies). In the discrimination, we find that from the table the sum of square between groups is 1.003 and within groups is 39.92 at (F=2.20) with significant less than 15%. Consequently, we reject (H_{09} : there is no significant difference in mean of the impact of the impact product discrimination on competitiveness in insurance companies based on types of insurance policies).

5. Conclusion

This paper extends earlier works. We study the role of credit scoring, cost and product discrimination in improving the competitiveness of Jordanian insurance companies. We used OLS and ANOVA test for that. We found that there is a positive significant effect of credit scoring, cost and product discrimination on competitive in insurance companies. Also, there is a lack of understanding of the concept of insurance in Jordanian companies because they lack people who are specialist in insurance. In addition, the elasticity of insurance demands less than one. That means the insurance is necessary product for insured because most insured in Jordan have to have compulsory insurance for their automobiles rather than other kinds of insurance.

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