The Effect of Human Capital, Assets, and Social Interactions on Life Insurance Demand  
(Case Study: Branches of Iran Insurance Company, Tehran, Iran)

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Abstract

This article aims to study the effect of human capital, assets, and social interactions on life insurance demand in Iran. An applied survey was performed. The statistical population consisted of individuals who used insurance services of Iran Insurance Company in Tehran, Iran. Since the exact number of members was not clear in statistical population, it was considered infinite. Therefore, the sample size consisted of 384 using Morgan table. In order to enhance the reliability, a total of 454 individuals, however, entered the study. Simple random sampling method was employed. A researcher-made questionnaire was administered. The validity was verified by experts. The reliability was reported 0.82 by Cronbach’s Alpha test. Descriptive and inferential statistics was employed to analyze the data and Structural Equation Modeling (SEM) was used. SPSS and SmartPLS softwares were also employed. Findings show that human capital is not effective in life insurance demand. Other factors including assets and social interaction have a positive and direct effect on life insurance demand.

Keywords: Life Insurance, Human Capital, Assets, Social Interaction.
1. Introduction

Considering the insurance premiums and the impact on GDP, insurance industry is one of the foundations of economy. With the increasing demand for insurance, we can achieve the financial development which is one of the factors influencing the economic growth. Life insurance is an effective way in which people with relatively low incomes make long-term investment for themselves and their families. Insurance premiums collected by insurance companies result in investment in capital market which is also a stimulus for capital market. The main motivation to buy life insurance is to protect families against the risk of deaths which leads to the loss of family’s human capital. Life insurance contributes to the formation of huge savings of country’s wealth. Life insurance is a contract in which the insurer is committed to pay a certain amount of money to the insurance policy holder in case of death or survival at a specific time. Life insurance provides pension for the insurance policy holder’s family, retirement pension, financing for the risks of disability, and capital savings without tax.

2. Literature Review

The beginning of studies in the fields of insurance dates back to 1965 by Yaari. Hammond, Haston, Melender, in their study entitled" Determining the Cost of Household Life Insurance Premiums: an Empirical Study", showed that a positive relationship is found between Dependency Burden and life insurance demand. Campbell (1980) showed that the level of education and income have a direct effect on life insurance purchase. He also sound out that Dependency Burden has a direct relationship with life insurance purchase. Life insurance purchase is also negatively affected by inflation. Life insurance demand is based on the lost human capital at the time of head of household’s death. Lweis (1989), in his study entitled "Effective factors in Life Insurance Demand", assumed that head of household’s demand for life insurance depends on the number of family members. He concluded that life insurance demand is found to have a positive relationship with head of household’s death, current value of households consumption, and family’s risk aversion. It is also found to have a negative relationship with family wealth and overhead costs.

Lim and Haberman, in their study entitled" the Effect of Macroeconomic Variables on Life Insurance Demand in Malaysia", studied the relationship between macroeconomic variables including inflation rate and income and life insurance demand from 1968 to 2001. They concluded that life insurance has a positive relationship with income and negative relationship with inflation rate.

Shi et al. (2015), in their study entitled "the Role of Life Insurance in Emerging Economies: Human Capital Protection, Assets Allocation and Social Interaction", showed that two factors (human capital protection and assets allocations) are effective in determining the life insurance demand in China.

Ghazaleh Mahdavi (2009) conducted a study entitled "Effective Factors in Life Insurance Demand" using time series data from 1978 to 2007. The results showed that compensation, national income, literacy percentage, and war have a positive and direct effect on life insurance demand. Life expectancy has an inverse and negative effect on life insurance demand.
demand. According to the results, life insurance demand is considered an inelastic commodity. On the other hand, applicants for this service considered it a luxury item.

Derakhshideh (2011) conducted a study entitled "Factors Influencing Life Insurance Demand in Iran". She showed that per capita income, interest rates, and savings rates have a significant and positive relationship with life insurance demand. Expected inflation rate has a significant and negative relationship with life insurance demand. No significant relationship is found between literacy rate and life insurance demand.

Mahdavi and Majed (2011), in their study entitled "The Analysis of Economic, Social, and Psychological Factors Influencing Life Insurance Demand in Iran", showed that life insurance demand, in the sample size, has a negative relationship with the individual’s expected health, premiums, positive inflation expectations, the degree of risk aversion, individual’s assessment of mental health, income, and tendency to share personal beliefs in public. Belief in bequeathing, economic optimism, belief in the future of national economic recovery, age, spouse employment, and the level of individual’s study in this regard have a positive effect on life insurance demand. Along with the mentioned factors, individuals are not influenced by advertisements of insurance companies. Being introduced by friends or acquaintances is more common in purchasing life insurance. The second point is related to profession. Employees involved in public sector are more willing than private-sector employees for the purchase of life insurance.

Rahimi (2012) conducted a study entitled "Factors Influencing the Life Insurance Demand in Kar Afarin Insurance Company in Tehran, Iran". She showed that income and marital status have a significant and positive relationship with life insurance demand. However, levels of education and inflation have a negative relationship with life insurance demand. Gender is another effective factor in life insurance demand. The results also showed that no significant relationship is found between age and life insurance demand.

Abbas Gholi Qafqazi (2013), in her study entitled "Determining and Identifying Factors Influencing Life Insurance Demand and Investment in Iran", found that life insurance demand and investments decline by life expectancy and social security fee payments. It, however, rises by dependency burden and nominal per capita income. Inflation rate decreases the demand.

Kalantari (2013), conducted a study entitled "The Impact of Socioeconomic Factors on Individual’s Tendency for Iran Life Insurance Demand in Rasht, Iran". She showed that socioeconomic factors are effective in life insurance demand.

3. Theoretical Foundation

Life insurance plays an important role especially in an economy where capital markets are less developed. This article aims to study the life insurance demand using a set of data. Considering the literature review, three factors were taken into account: human capital, assets, and social interactions.

**Life insurance:** is a contract between an insurance policy holder and an insurer or assurer, where the insurer promises to pay a designated beneficiary a sum of money (the benefit) in exchange for a premium, upon the death of an insured person (often the policy holder), critical illness, or even survival (Insurance Encyclopedia, 1970).
**Human Capital**: it is one of independent variables in this study. The dimensions consisted of Level of Education, Health Status, Insurance Status, and Working Experience. (Shi, 2015)

**Assets**: is another independent variable. The dimensions are wealth, consumption, income, and investment in financial markets, and savings. (Shi, 2015)

**Social Interactions**: The dimensions are social payments (offerings, gifts, donations), Party Tendency (the impact of others), social communication (social networks). (Shi, 2015)

4. **Hypotheses**

**Main Hypothesis**: Human Capital, Assets, and Social Interaction are Effective in Life Insurance Demand.

**Secondary Hypotheses**:  
**H1**: Human capital is effective in life insurance demand.  
**H2**: Assets are effective in life insurance demand.  
**H3**: Social Interactions are effective in life insurance demand.

**Research Conceptual Model**
5. Methodology

An applied survey was performed. The statistical population consisted of individuals who used insurance services of Iran Insurance Company in Tehran, Iran. Since the exact number of members was not clear in statistical population, it was considered infinite. Therefore, the sample size consisted of 384 using Morgan table. In order to enhance the reliability, a total of 454 individuals, however, entered the study. Simple random sampling method was employed. Data were analyzed using descriptive and inferential statistical methods and Structural Equation Modeling (SEM) by SmartPLS and SPSS 22. Apart from the articles and books, data were collected using questionnaire. The validity was verified by experts. Cochran's alpha was employed to verify the reliability. The results show that the questionnaire has an acceptable level of reliability.

Fig. 1: Conceptual Model Taken from the Study Conducted by Shi et al. (2015)
Table 1: Results of Reliability- Cochran's Alpha

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Cochran's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital</td>
<td>0.876</td>
</tr>
<tr>
<td>Social Interactions</td>
<td>0.813</td>
</tr>
<tr>
<td>Assets</td>
<td>0.77</td>
</tr>
<tr>
<td>Insurance Demand</td>
<td>0.857</td>
</tr>
<tr>
<td>Total Questionnaire</td>
<td>0.829</td>
</tr>
</tbody>
</table>

Kolmogorov – Smirnov test was employed to determine the normal and non-normal distribution of data. Confirmatory factor analysis and SEM were also used for data analysis.

**Findings**

Results of Kolmogorov – Smirnov test

This test is employed to determine the normal and non-normal distribution of data.

**H₀:** The variables are normal

**H₁:** The variables are not normal.

Table 2: Results of Kolmogorov – Smirnov test

<table>
<thead>
<tr>
<th></th>
<th>Human Capital</th>
<th>Social Interactions</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>454</td>
<td>454</td>
<td>454</td>
</tr>
<tr>
<td>Mean</td>
<td>3.0676</td>
<td>2.6959</td>
<td>2.5708</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.63210</td>
<td>0.56865</td>
<td>0.69671</td>
</tr>
<tr>
<td>Z statistics</td>
<td>0.114</td>
<td>0.089</td>
<td>0.086</td>
</tr>
<tr>
<td>Significance Level</td>
<td>0.000&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.000&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.000&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Normality</td>
<td>Non-Normal</td>
<td>Non-Normal</td>
<td>Non-Normal</td>
</tr>
</tbody>
</table>
According to table 2, since the significance level is less than 0.05, research variables are not normal. Therefore, considering the non-normal data, SmartPLS is employed for hypothesis testing.

**Diagrams and results of Path Analysis**

Fig. 2 shows the confirmatory factor analysis and structural equation coefficients in standard estimation mode. Human capital, assets, and social interactions are independent variables, while life insurance demand is dependent variable. Numbers or coefficients are divided into two sections. The first section consists of measurement equations which are the relationship between hidden (oval) and latent (rectangular) variables known as loading factors. The second section is structural equations used for hypothesis testing known as path coefficients. Loading factors were used to analyze the questionnaire and identify the constituent elements. All loading factors which are less than 0.4 need to be excluded. The model is, then, modified and estimated. Indicators with less than 0.4 loading factors need to be excluded. Fig. 3 shows the modified model.

![Fig. 2: The Initial Model in Standard Estimation mode](image-url)
Fig. 3: Modified Model of Standard Estimation Coefficients for the Research Structural Model
Fig. 4: Significance Values of Modified Model

Fig. 4 shows the confirmatory factor analysis and SEM in absolute mode of t-value coefficient significance. This model, in fact, examines all measurement equations and structural equations using t-test. According to this model, at 95% certainty level, path coefficient is significant if t statistics is greater than 1.96.

Convergent and divergent validity of model

Convergent and divergent validity criteria, specified for SEM, were employed to examine the questionnaire validity. Convergent validity refers to the degree to which two measures of constructs that theoretically should be related are in fact related. Divergent validity indicates that model constructs need to be correlated with the questions rather than other constructs (Holland, 1990). Average Variance Extracted (AVE) for first order variables was used to evaluate convergent validity.
Table 3: AVE for First-Order Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital</td>
<td>0.609</td>
</tr>
<tr>
<td>Assets</td>
<td>0.654</td>
</tr>
<tr>
<td>Social Interactions</td>
<td>0.647</td>
</tr>
</tbody>
</table>

The acceptable level is 0.4 for AVE (Magner et al., 1996). As stated in table 3, all AVEs are greater than 0.4, indicating the fact that convergent validity is acceptable.

Divergent validity compares the difference between indicators of a construct with those of another. This is performed through square root of AVE for each construct and correlation coefficients. If constructs are strongly correlated with its indicators, divergent validity is verified. To this end, a matrix needs to be formed in which the main diagonal values are square root of AVE coefficients for each construct. Lower values of main diagonal are correlation coefficients between each construct and others. Table 4 shows this matrix.

Table 4: Comparing AVE Square Root and Correlation Coefficients of Constructs

<table>
<thead>
<tr>
<th>Variables</th>
<th>Human Capital</th>
<th>Social Interactions</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital</td>
<td>0.780</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Interactions</td>
<td>0.675</td>
<td>0.804</td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td>0.566</td>
<td>0.780</td>
<td>0.808</td>
</tr>
</tbody>
</table>

As it is clear in table 4, AVE square root is greater than its correlation coefficient, indicating an acceptable level of divergent validity.

**Fitting Evaluation of Research Executive Model**

Goodness of Fit (GOF) is related to SEM overall section. It means that the researcher is able to control the overall fitting after the evaluation of measurement and structural fitting sections. Table 5 shows overall fitting indicator.

Table 5: The overall fitting of the tested model

<table>
<thead>
<tr>
<th>GOF</th>
<th>COMMUNALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.837</td>
<td>0.698</td>
</tr>
</tbody>
</table>
The fitting criterion was reported 0.837. This shows that the model is perfectly fit.

Hypothesis Analysis

**First Hypothesis:** Human capital is effective in life insurance demand.

Table 6 shows the results of conceptual model equation outputs.

Table 6: Output of the first hypothesis

<table>
<thead>
<tr>
<th>Path FROM</th>
<th>TO</th>
<th>Sig. value (t-value)</th>
<th>Path Coefficient (β )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital</td>
<td>Life Insurance Demand</td>
<td>0.075</td>
<td>-0.008</td>
</tr>
</tbody>
</table>

According to table 6, the significance level is 0.075 between human capital and life insurance demand which is less than 1.96. This shows that, at 95%, the relationship is not significant between human capital and life insurance demand. The path coefficient is 0.008 between them showing the effectiveness of human capital in life insurance demand. Therefore, the first hypothesis is not verified. It means that human capital has no significant effect on life insurance demand.

**Second Hypothesis:** Assets are effective in life insurance demand.

Table 7 shows the results of conceptual model equation outputs.

Table 7: Output of the second hypothesis

<table>
<thead>
<tr>
<th>Path FROM</th>
<th>TO</th>
<th>Sig. value (t-value)</th>
<th>Path Coefficient (β )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>Life Insurance Demand</td>
<td>4.521</td>
<td>0.411</td>
</tr>
</tbody>
</table>

According to table 7, the significance level is 4.521 between individual’s assets and life insurance demand which is greater than 1.96. This shows that, at 95% certainty, the relationship is significant between individual’s assets and life insurance demand. The path coefficient is 0.411 between them showing the effectiveness of assets in life insurance demand. Therefore, the second hypothesis is verified. It means that individual’s assets have a significant effect on life insurance demand.

**Third Hypothesis:** Social Interactions are effective in life insurance demand.

Table 8 shows the results of conceptual model equation outputs.
Table 8: Output of the third hypothesis

<table>
<thead>
<tr>
<th>Path TO</th>
<th>Sig. value (t-value)</th>
<th>Path Coefficient (β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Interactions</td>
<td>4.461</td>
<td>0.358</td>
</tr>
</tbody>
</table>

According to table 8, the significance level is 4.461 between social interactions and life insurance demand which is greater than 1.96. This shows that, at 95% certainty, the relationship is significant between social interactions and life insurance demand. The path coefficient is 0.358 between them showing the effectiveness of social interactions in life insurance demand. Therefore, the third hypothesis is verified. It means that social interactions have a significant effect on life insurance demand.

**Main Hypothesis:** Human Capital, Assets, and Social Interactions are effective in Life Insurance Demand.

Table 9: Output of the main hypothesis

<table>
<thead>
<tr>
<th>Path TO</th>
<th>Sig. value (t-value)</th>
<th>Path Coefficient (β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Interactions</td>
<td>4.461</td>
<td>0.358</td>
</tr>
<tr>
<td>Human Capital</td>
<td>0.075</td>
<td>-0.008</td>
</tr>
<tr>
<td>Assets</td>
<td>4.521</td>
<td>0.411</td>
</tr>
<tr>
<td>Total</td>
<td>9.057</td>
<td>0.761</td>
</tr>
</tbody>
</table>

According to table 9, all three variables are effective in life insurance demand by 0.761% total. Since it is greater than 1.96, the effect is significant. Therefore, the hypothesis is verified.

6. **Conclusions and Recommendations**

Findings show that human capital is not effective in life insurance demand. Other factors (assets and social interactions) are, however, effective in life insurance demand.

- Considering the result of the first hypothesis, human capital which consists of level of education, insurance records, health status, and work experience dimensions are not effective in life insurance demand. As a result, insurance companies are recommended to consider this issue. No measures are required in this regard. They can also try to find the roots and causes.
- Considering the effect of assets on life insurance demand, insurance companies can invest in society’s high-income deciles to sell more insurance policies.
- Considering the effect of social interactions on life insurance demand, insurance companies can take advantage of marketing and investing through social networking instead of outdoor advertising.
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