

## Analysis of Effective Factors on Investors' Risk Appetite

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### Abstract:

*The subject of this research is "analysis of effective factors on the investors' risk appetite". The population of study includes senior student of ABYEK Basir Non-profit University sampled in 2013. This study tries to answer (with the expression of one main hypothesis) whether the demographic, behavioral and individual attitude of investors have an effect on their risk appetite? Hereon, by studying various books and articles, various factors that affect the risk taking degree of investors were identified and the research hypothesis was tested. Hypothesis was tested and data was analyzed by binary regression (LOGIT model) and SPSS.V19. For investigating the relationship between each independent variable and dependent variable, the chi-square test was used. The results indicated that independent variables are effective on the dependent variable (risk appetite) and main hypothesis was accepted. But with the implementation chi-square test, only the experience variable had a negative relationship with risk taking degree of investors, while other research variables had not a statistic relationship with dependent variable.*

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**Key words:** risk, risk management, investment, attitude, investors  
**Introduction**

Risk management is an assessment process or risk evaluation followed by planning strategies to manage risk. Overall, the used strategies include: Risk transfer to other sectors, avoiding the risk, reducing the negative effects and accepting part or whole of the consequences of a particular risk (Mirmohammadi 2012).

The understanding process is the tolerance and acceptance of risk, which means recognizing and examining the existing risks. It is a risk-taking degree that a company or an individual can tolerate and adapt to it without experiencing irreparable losses (Kwak & Laplace 2005).

The term of risk-taking or risk tolerance is usually not taken into account. Risk tolerance is an important part of risk management planning. It should be noted that not all risks can be controlled and organizations, especially those faced with more risky projects, should increase their risk tolerance. However, without the existence of risk analysis, the risk level that an organization or a person can tolerate cannot be assessed. Therefore, the risk tolerance survey cannot be done at the beginning of the project without knowing the risks. And later, due to a variety of factors required by the dynamic behavior analysis of risk tolerance during the project lifecycle and due to its time consuming, the risk tolerance survey is to be forgotten in next stages (Kwak 2003).

Risk is an integral part of human life and organizations. Moreover, all decision-making situations are faced with a diverse range of risks and also risk acceptance is not bad in itself. It is important that we should not be exposed at risk without logical reason. Human life is associated with risk acceptance so that probably lack of absolute risk-taking resulted in human life is placed in lower level than present levels. Due to constant changes in environmental factors and economic systems, different risks could affect the financial

structure of various firms every day (Raei & Saeedi 2011).

Individuals and organizations should attempt to invest according to identifying a variety of risks and their risk appetite degree that may influence them. It seems important that we study and assess the effective factors on degree of investors' risk-taking. These factors typically resulted from behavior or psychological-personality traits of individuals.

In this research, we have tested the level of risk tolerance and risk-taking degree of individuals with respect to their psychological-demographic characteristics and behavioral variables including age, gender, and income. Additionally, we investigated the type of relationship and influence of these variables on risk-taking degree of individuals who are a group of college students. Obviously, the results of this research could help individuals and organizations in investment, project risks, and personal risk management substantially.

Individuals, companies and financial institutions are unaware of the future. Therefore, this ignorance is equivalent to uncertainty about it and is encountered by an important factor called risk. For this reason, if any legal investor has the ability to predict future accurately, there is no longer such a phenomenon known as risk. In this study, demographic-behavioral factors will be examined. Thus, the implications of these attitudes about factors influence the customer understanding of the risk and risky decision-making behavior. This probably gives valuable information about the needs of their clients to professionals that in turn, will lead to enhanced sales efforts. Further, this research will cause scientific and practical benefits (here customer is the investor). Existing studies on the determinants of risk and risky decision-making try to explain dangerous behavior by demographic-behavioral variables. But they discover different results. So far a clear consensus has not been obtained on the impact of demographic variables on risk attitudes due to varying factors in different environments (Alanko 2009).

However, in terms of investors' condition the question is: can we identify factors that influence the risk-taking degree of investors? So, in this paper, we are looking to analyze the effective factors on risk-taking level of investors.

Research results of Iraqi Khalili & Ghorbani (2010) suggest that risk aversion has a significant relationship with extroversion characteristic. But there was no significant correlation between personality traits of conscientiousness, openness to experience, neuroticism, being agreeable and risk aversion.

Asgari et al. (2011) in a study showed that there is a significant and positive relationship between risk-taking and sensation seeking variables with personality type of D.

Lialestani et al. (2010) investigated the effect of professional experience of companies' managers, who are investing in stock exchange, on their risk appetite, overconfidence and mass behavior. One of the important findings of this study was presenting a conceptual model that represents the relationship between variables and effect of each on gaining return for managers.

The research which is done by Elias Alanko (2009) in University of Helsinki was with the aim of investigating risk attitude of private investors from two aspects. Research results indicate that Finnish investors are very risk averse. They often are investing in portfolio. Also the experience variable, men and having debt, have positive and significant relationship with risk-taking attitudes. However, the age variable has negative and non-linear relationship with risk-taking attitudes: older investors were more inclined to accept the risk (Alanko 2009).

A study is conducted by Lucas Menkhoff & et al from the University of Hannover in Germany in 2005. First, the study was performed according to previous research which had shown that less experienced managers of funds lose much more efficient than experienced managers. They also believe that inexperienced managers accept less risk that is inconsistent

with efficient market hypothesis. The question posed in this study was whether less experienced managers of investment funds have a tendency towards risk-taking and acceptance or not? The results indicate that the mass behavior reduced with increasing experience. Furthermore, there is a significant positive correlation between over-confidence and risk-taking. The most important result of this study was that less experienced managers are more willing to take risks.

## **Research Method**

In this research, library (including use of books, magazines and Internet) and field (15-item questionnaire of researcher made) method was used. Since research population was senior students of non-profit university in Abyek (majors in accounting, financial management, business and industrial management) and this included 120 people, the whole population was studied due to enhancing the validity of results; that is, the census method was used. Thus, the questionnaire was distributed among 120 persons. Cronbach's alpha coefficient was used to test the reliability of questionnaire. According to the results achieved by the implementation of this test it was evident that this coefficient was equal to 77.3%, which confirmed the validity of questionnaire.

## **Research questions**

**Main question:** Do demographic-behavioral variables and personal attitudes have meaningful impact on risk-taking degree of investors?

### **Sub-questions**

1. Is there any relationship between age variable and risk-taking degrees of investors?
2. Is there any relationship between gender variable and risk-taking degree of investors?

3. Is there any relationship between marital status variable and risk-taking degree of investors?
4. Is there any relationship between training variable (level of education) and risk-taking degrees of investors?
5. Is there any relationship between experience variable and degree of investors' risk-taking?
6. Is there any relationship between income variable and degree of investors' risk-taking?
7. Is there any relationship between wealth (assets) variable and risk-taking degrees of investors?

### Research analytical model

The relationship between research variables can be presented in the following model (Alanko 2009).

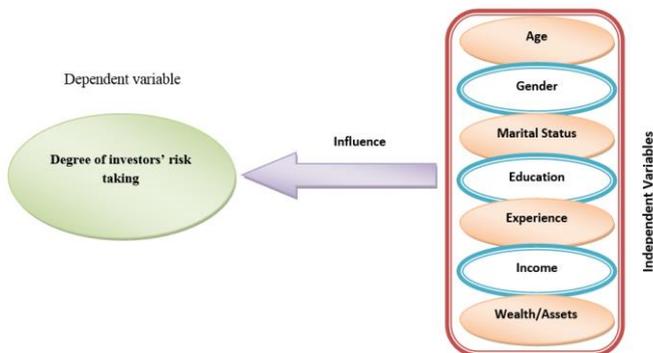


Figure 1: The relationship between research variables

### Data analysis

The main hypothesis test and data analysis was performed by logistic regression method (LOGIT Model) and using the software Spss.v19. To investigate the relationship of variables individually the chi-square test of independence was used.

**Main hypothesis:** There is a significant impact between demographic-behavioral variables and personal attitudes on risk-taking degrees of investors.

		Chi-square	Degree of freedom	Significance level
Step 1	step	15.920	8	0.044
	block	15.920	8	0.044
	model	15.920	8	0.044

**Table 1: Omnibus**

This test was performed with regard to independent variables and their influence on investors' risk-taking.

In the first step, chi-square statistics of model equals to 15.92 and its significance level (sig) is less than 5% (0.044). So, behavioral-demographic variables and personal attitudes have a significant effect on risk-taking degrees of investors and indicate a good fitness.

step	2- Log likelihood	Cox & Snell R Square	Nagelkerke R Square (R <sup>2</sup> )
1	150.302 <sup>a</sup>	0.124	0.166

**Table 2: Summary of model**

Determination coefficient in above table ( $R^2 = 16.6$ ) shows that 16.6% of variations in dependent variable is explained by the independent variables in implemented model for logistic regression. The remaining variability is related to factors that are out of this research control and further investigation is needed.

The output of model implementation that is shown in the following table is a two dimensional output to classify, which indicates the observed and predicted values. It will be determined based on this output that how much the model prediction is correct.

observed		predicted		Validity of prediction
		risk-taking or risk aversion	risk-taking	
risk-taking or risk aversion	risk aversion	46	16	2.74
	risk-taking	24	34	6.58
Total percent		-	-	7.66

**Table 3: classification**

According to Wald statistic and its associated significance level, only experience variable has significant relationship with risk-taking and risk-aversion of investors ( $P < 0.01$ ).

$$\text{Dependent variable} = 2.653 - 1.602 (\text{experience variable})$$

$$Y = 2.653 - 1.602X_7$$

In the above equation, the negative coefficient indicates a negative relationship between experience variable and risk-taking status of investors. This means that this variable has a negative effect on the risk-taking degrees of investors.

	coefficients	S.E	Wald statistic	df	Significance level	Exp(B)
Gender	0.039	0.462	0.007	1	0.933	1.040
marital status	0.216	0.536	0.163	1	0.687	1.241
Age	0.342	0.385	0.791	1	0.374	0.710
Education level	0.294	0.254	1.343	1	0.247	1.341
Income	0.348	0.288	1.461	1	0.227	0.706
Wealth/assets	0.335	0.467	0.514	1	0.473	0.715
Experience	1.602	0.543	8.712	1	0.003	0.202
Constant value	2.653	1.876	2	1	0.157	14.204

**Table 4. Coefficients and the type of correlation between independent and dependent variables**

### Testing secondary hypothesis of the study

**H<sub>0</sub>:** There is no relationship between gender variable and risk-taking degrees of investors.

**H<sub>1</sub>:** There is a relationship between gender variable and risk-taking degrees of investors.

The resulting outputs are cross output. They show that among 81 male respondents 40 people are risk taker and 41 are risk averse and vice versa.

		Risk-taking or risk aversion		total
		risk aversion	Risk-taking	
Gender	Male	41	40	81
	female	21	18	39
total		62	58	120

**Table 5. Contingency table between gender and degree of risk-taking**

According to the results of this test, the significance level equals to 0.74, hence this hypothesis is rejected. That means there is no significant relationship between gender variable and risk-taking degrees of investors.

	value	df	Significance level
Pearson Chi-Square	0.110 <sup>a</sup>	1	0.740
Continuity Correction <sup>b</sup>	.019	1	0.891
Likelihood Ratio	.110	1	0.740
Linear-by-Linear Association	.109	1	0.741
N of Valid Cases	120	-	-

**Table 6. Independence test result of first sub-hypothesis**

## Discussion and conclusion

Additionally, test results illustrated that the second sub-hypothesis is rejected. That is: there is no significant relationship between marital status variable and risk-taking degrees of investors, because according to the results of this test, the significance level equals to 0.219. This result is also determined in independence test of third sub-hypothesis as the significance level of this test implementation was 0.118. This shows that there is no relationship between age and risk-taking degrees of investors.

Moreover, in the fourth hypothesis test, there is no relationship between education level and risk-taking degrees of investors, because the significance level of this test is 0.156.

It also became clear that the fifth hypothesis is rejected since the significance level was more than 5% (0.664) and the null hypothesis is accepted. Furthermore, there is no relationship between income variable and risk-taking degrees of investors.

The sixth sub-hypothesis is also rejected due to high significance level (more than 5%). This was determined that there is no correlation between wealth/asset variable and risk-taking degrees of investors.

The significance level of seventh hypothesis test is 0.001.

It shows the relationship between experience variables and degree of risk-taking in confidence level of 99%. Therefore, we reject  $H_0$  and accept  $H_1$ . In other words, there is a correlation between experience variable and risk-taking degrees of investors.

In this study we examined some of demographic features and personal attitudes of university students in Abyek. We tried to measure the influence of these characteristics and indexes on risk-taking degrees of these students. To test the sub-hypotheses the independence test (Chi-square) was used. According to the results, variables of gender, age, marital status, education level, income, asset / wealth have no significant relationship with risk-taking and risk-aversion of the respondents. Experience variable only showed a significant negative correlation with risk-taking degrees of investors ( $P < 0.01$ ). In explaining these results, we can say that since the majority of independent variables of this study were demographic variables, factors such as behavioral, economic variables (inflation, unemployment, etc.) can influence on risk taking of sample investors. So, this is out of this study's control and it is suggested to other researchers that they investigate it as future research.

In a research conducted by Iraqi, Khalili & Ghorbani (2010), it was observed that experience variable has no statistical correlation with dependent variable despite of this study. Also, unlike the results of this study, age correlated negatively with dependent variable and gender variable correlated positively. In a research by Lialestani & et al (2010) the results indicated that there is a significant and inverse correlation between experience variable and risk-taking degree of investors. Further, in a research conducted by Alanko (2009) there is a significant and positive correlation between experience variable and degree of risk-taking attitude. Similar to this study, the research of Menkhoff (2005) showed that less experienced managers are more willing to take risks. Since in

most previous studies and this study the experience variable has a significant relationship with risk-taking degree of investors, it can be said that one of the main characteristics and behavioral variables of attitude toward risk-taking of investors is their experience. Thus, in behavioral finance, individual attitudes of investors, in risk analysis and efficiency, a special attention should be paid to this index.

According to the results of research and variables, it is suggested that the risk-taking level of active investors of stock exchange in Tehran and effects of different types of personality and emotional intelligence on their risk-taking degree should be studied and investigated in future research.

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