

## **NOTHING VENTURED NOTHING GAINED: GENDER DIFFERENCES IN FINANCIAL RISK BEHAVIOR AMONG TURKISH UNIVERSITY STUDENTS**

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### **—Abstract—**

Our study examines issues of risk attitude and risk tolerance among Turkish university students. We surveyed 725 students regarding their attitudes toward risk and asked them to respond to several hypothetical situations concerning possible financial gain and/or loss. Using parametric and nonparametric tests, we examined their risk tolerance and risk attitude as well as their propensity for risk taking behavior. In line with much of the literature, we found women students to be more risk adverse than men. The gender difference increased as risk increased. The importance of this research lies in the portrait it provides of attitudes toward risk and risk tolerance among young people in an emerging market. In particular, for the ways that gender may affect any number of financial decisions over the course of an individual's life.

**Key Words:** *Risk Attitude, Risk Tolerance, Gender Difference.*

**JEL Classification:** G32, J16, C46, D81

### **1. INTRODUCTION**

A willingness to take risks is a generally acknowledged part of life and, in particular, financial life. Whether it is in taking out a mortgage loan or starting

one's own business, a certain amount of risk taking is required in order to better one's existing financial position. A number of questions remain about who will take risks and under what circumstances. Is risk taking a matter of personality or attitude? Is it something we learn? Our research seeks to explore the impact of gender on financial risk taking and risk tolerance. In specific are women, as is generally perceived, more adverse to risk than men?

## **2. LITERATURE REVIEW**

It is generally believed that women are less willing than men to take risks. This belief extends to such behaviors as extreme sports, gambling and financial decisions. Gender differences in attitudes to risk and in level of tolerance to risk have been found in many studies. Recent studies have produced contradictory results on the effects of gender on financial behavior. One stream of analysis reports that gender does not play a significant role in financial behavior (Powell 1990). On the other hand some studies demonstrate that gender, in fact, does impact the way individuals make financial decisions (Donkers & Van Soest, 2001; Bernasek & Shwiff, 2001). Currently, there is no consensus in the literature on this subject.

In a review of literature on gender differences in financial decision making, Johnson and Powell (1994) claim that the research findings before 1980 were influential in forming a dominant view that gender differences exist in business decisions involving risk. These studies argue that women are more cautious and less confident in risky business decisions when compared to men. When asked about their attitudes toward financial risks, women are found to show lower risk propensity than men (Donkers & Van Soest, 2001; Bernasek & Shwiff, 2001). Women tend to feel less competent about financial matters while men feel overconfident (Zinkhan and Karande, 1991; Prince 1993; Barber and Odeon, 2001). Another stream of research in this field claims that any gender differences are the result of different methodologies adopted, especially when framing questions and the effects of familiarity and skill on decision making are not taken into account (Bromiley & Curley, 1992; Eagly, 1995; Unger, 1990).

The framing of decision questions, which refers to the description of a hypothetical gamble as a gain or a loss, can also affect risk behavior (Levin et al., 1988; Diskson, 1982). The tendency to prefer risk averse options when framed positively and risky options when framed negatively is known as the framing

effect. Diskson (1982) found that behavioral differences were more obvious when decisions are framed in terms of losses than gains. Eckel and Grossman (2002) found that women are more risk averse across all frames. Schubert et al. (1999) framed choices as either potential gains or losses. Their findings indicate that women are more risk averse than men in the gain domain. However, men are more risk averse than women in the loss domain gambles, which is not consistent with the previous evidence. Miller et al. (2009) showed that although the positively and negatively framed versions of the decision problems were identical, negative framing resulted in more risky choices. In addition, regardless of framing, men made more risky choices than women.

In two studies which specifically dealt with students, the results were consistent in that women preferred less risk than men (Zinkhan and Karande 1991; Powell and Ansic, 1997). Interestingly, Zinkhan and Karande in their study of American and Spanish MBA students found that women's risk aversion persisted across cultural boundaries. Yet, in a study of the risk tolerance of Chinese and American students in the domains of investments, Hsee and Weber (1999) found that Chinese students were significantly more risk seeking than the American students. Another study by Weber, Blais and Betz (2002) which used a sample of American undergraduate students assessed risk taking in five domains: financial decisions, health/safety, recreational, ethical and social decisions. Respondents' degree of risk taking was domain-specific, not consistently risk averse or risk seeking across all content domains.

However, the evidence on gender difference is not quite settled. There is further research which found no significant gender difference in risky decisions (Powell 1990). Schubert et. al (1999) claimed that under specific conditions, women are as risk loving as men or even more risk loving. A more recent study by Schubert (2006) reported that female subjects do not generally make less risky financial choices than male subjects.

A study by Demirel & Gunay (2011) analyzed financial risk taking behavior of students from a Turkish University and a Macedonian University. The findings of this study showed that gender and age are two factors in determining risk taking behavior of Turkish students. The other interesting finding of this study is female and younger students are willing to take more risk than male and older students in Macedonia. However, male and older students are willing to take more risk than female and younger students in Turkey. Tutek et al. (2010) investigated the

differences in risk perception of female and male financial advisors in Turkish financial institutions. The findings show that female and male financial advisors propose different portfolios for female and male customers having the same risk levels. Anbar & Eker (2010) investigated the relationship between financial risk tolerance and demographic characteristics such as age and gender. Their analysis included 1,100 university students. Their findings indicated that gender was one of the significant predictors of financial risk tolerance.

### **3. DATA & METHODOLOGY**

To gather data for the present study, we conducted an online questionnaire sent by e-mail. The questionnaire was completed by a sample of seven hundred twenty five undergraduate and graduate students at Kadir Has University. In this analysis, we use non-parametric tests because of the not normal distribution and include a set of control variables such as gender, age, major and grade level of the participants and so on.

When we look into the details of the data we can see that the sex was nearly balanced, 335 (46%) were women and 389 (54%) were men. Average age was 22.7 with the majority 59% were between ages 18-22, 24% were between 23-25 and 17% were older than 25. We received almost 15% of responses from graduate students. The allocation of majors of the remaining respondents was mainly Social Sciences (42.7%) and life sciences (32.7%). According to 2010-2011 Turkish Assessment, Selection and Placement Center (SSPC) statistics, the allocation of total number of male and female students, including the vocational schools, undergraduates and graduate students, is about 54% to 46% respectively. There are about 4.92 million vocational and undergraduate students in Turkey, about 45% of the students are female and 55% of the students are male. There are 278,000 graduate students in Turkey, 47% of students are female and 53% are male. These statistics shows us that the sample we used in this study mirrors the overall gender distribution of university students.

The internal consistency of the questionnaire was measured using Cronbach's alpha. The questionnaire obtained an alpha of 0.644 indicating that the items were measuring the underlying factor.

The questionnaire consisted of three parts with a total of 11 questions. Our rationale in limiting the number of questions was the belief that shorter

questionnaires yield higher response and cooperation rates (Galasic and Bosnjak, 2009). The first set of items focused on demographics such as gender, age, major and grade level of the participants. In the second section, risk tolerance was evaluated by three questions. The third part of the questionnaire included four questions dealing with the risk tolerance levels of the participants. The respondents for the second set of questions evaluated their risk attitudes on a five point rating scale ranging from “Strongly Agree” to “Strongly Disagree” (i.e. “Please score the statement below on how closely it resembles your current situation, attitudes and feelings.”).

### **3. EMPRICAL RESULTS AND DISCUSSION**

Financial risk attitude and tolerance levels were analyzed and compared for men and women in the student group. Table 1 shows the descriptive statistics for the total sample, the Spearman Correlation tests and the tests of Normality, while Table 2 shows univariate differences in financial risk attitude and Table 3 shows the univariate differences in financial risk tolerance by gender. We tested the following hypothesis for each category (financial: attitude and tolerance) and groups (gender: men and women).

Hypothesis for analysis:

H<sub>1</sub>: Gender has an effect on the financial risk attitude.

H<sub>2</sub>: Gender has an effect on the financial risk tolerance.

Depending on the descriptive statistics presented in Table 1, the results show that, there is variability of between men and women. The results of the Spearman correlation rho test in Table 1 confirmed that the p-value is less than the chosen 1% significant level, thus the null hypothesis (there is no relation between financial risk variables and gender) is rejected. In short, financial risk attitude and tolerance are related with gender differences.

Whether variables are normally distributed or not can be decided after an accurate test of analysis is used. One of the widely accepted tests of the normality of a distribution is the Shapiro-Wilk test. The results of the Shapiro-Wilk test in Table 1 confirmed that the p-value is less than the chosen 1% significant level, and therefore the null hypothesis is rejected. In other words, the variables are not normally distributed.

**Table 1: Descriptive Statistics, Spearman Correlation Rho Test by Gender, Shapiro Wilk Test of Normality**

Variables	Descriptive Statistics				Spearman Correlation		Shapiro Wilk Normality Test	
	count	Avg.	Med.	St. Dev.	Rho	P-val.	W*	P-value: W*
Please score the statement below on how closely it resembles your current situation, attitudes and feelings." People who know me would describe me as a cautious person."	724	2.1229	2	0.8722	0.23*	0	0.84	0
Please score the statement below on how closely it resembles your current situation, attitudes and feelings. "I am willing to take substantial risk to earn substantial returns."	724	2.8757	3	1.1346	0.21*	0	0.87	0
Please score the statement below on how closely it resembles your current situation, attitudes and feelings. "When it comes to investing, I'd rather be safe than sorry."	725	1.9545	2	0.8837	0.12*	0	0.76	0
Please score the statement below on how closely it resembles your current situation, attitudes and feelings. "I am not willing to take any financial risk."	726	3.2245	3.5	1.1193	0.20*	0	0.89	0
When you think of the word "risk" in a financial context, which of the following words come to mind first?	724	3.2528	3	0.9115	0.14*	0	0.86	0
When faced with a major financial decision are you more concerned about the possible losses or the possible gains?	720	3.6333	4	0.853	0.24*	0	0.87	0
How much confidence do you have in your ability to make good financial decisions?	724	3.2279	3	0.836	0.20*	0	0.85	0

We use an unpaired-nongaussian Mann-Whitney test to compare each gender group because the individual values were not paired or matched with one another and came from a nongaussian population. The results of the Mann-Whitney test in Table 2 and 3 confirm that financial risk attitudes and tolerance are different in terms of gender. Depending on the results the hypothesis, “*Gender has an effect on the financial risk attitude and tolerance*” was proven. Our research found statistically significant differences between men and women university students in Turkey with regard to financial risk and risk tolerance. The financial risk attitude and tolerance of men and women appear to differ based on the univariate results as shown in Tables 2 and 3.

**Table 2: Univariate Differences in Financial Risk Attitude by Gender**

<b>Financial Risk Attitude Variables</b>	Mann-Whitney*	P-value:
Please score the statement below on how closely it resembles your current situation, attitudes and feelings.(Q5) “People who know me would describe me as a cautious person.”	-0.52	0.6
Please score the statement below on how closely it resembles your current situation, attitudes and feelings.(Q6) “I am willing to take substantial risk to earn substantial returns”	-5.71	0
Please score the statement below on how closely it resembles your current situation, attitudes and feelings.(Q7) “When it comes to investing, I’d rather be safe than sorry.”	-3.3*	0
Please score the statement below on how closely it resembles your current situation, attitudes and feelings.(Q8) “I am not willing to take any financial risk.”	-5.33*	0

\* denoted is statistically significant at 0.01 level.

Risk attitude values were compared for men and women in the student group in Table 2. It was found that with the exception of the first statement “People who know me would describe me as a cautious person.” the rest of the findings show statistically significant results. In other words, men and women show different risk attitudes. One possible explanation for the difference in the first statement can be the framing used. The following three statements were framed in terms of a financial setting rather than a statement of personality.

Table 3 shows us that there is a statistically significant level of difference between men and women in risk tolerance levels except with regard to the first question in the table “When faced with a major financial decision are you more concerned

about the possible losses or the possible gains?” The rest of the findings show statistically significant results.

**Table 3: Univariate Differences in Financial Risk Tolerance by Gender**

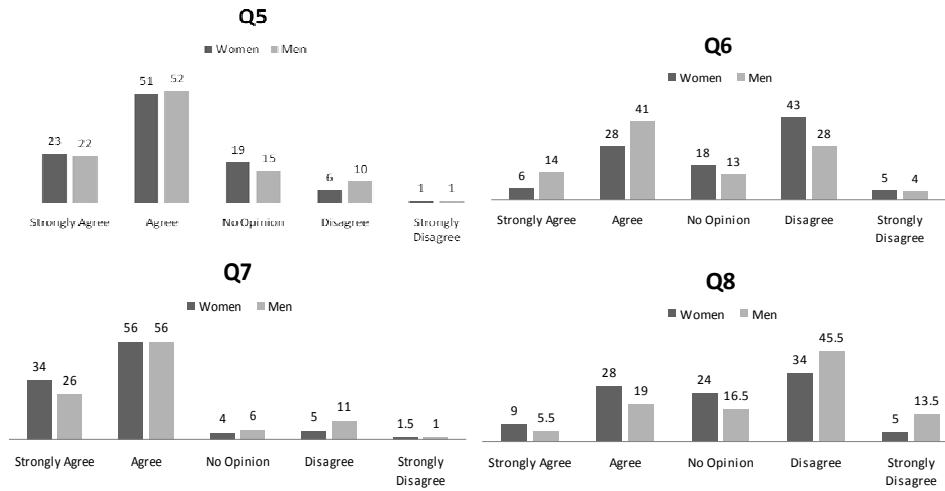
<b>Financial Risk Tolerance Variables</b>	<b>Mann-Whitney*</b>	<b>P-value</b>
When you think of the word “risk” in a financial context, which of the following words come to mind first?(Q9)	-3.72*	0
When faced with a major financial decision are you more concerned about the possible losses or the possible gains?(Q10)	-0.12*	0.9
How much confidence do you have in your ability to make good financial decisions?(Q11)	-5.42	0

\* denoted is statistically significant at 0.01 level.

Item 5 (Q5) aimed to identify the respondent’s general risk propensity. Q5 in Figure 1 shows that there is almost no difference in terms of gender when the question is framed in general terms. However, Item 6 (Q6) showed that women are significantly less willing to take substantial risk to earn substantial returns. In item 7 (Q7), to assess propensity for regret in investment decisions, we asked respondents to state their level of agreement with the statement: “When it comes to investing, I’d rather be safe than sorry.” Scores range from 1 to 5, from “Strongly Agree” to “Strongly Disagree”, where high scores show more risk propensity and less regret. Results showed that women have a higher risk and regret propensity than men. In item 8 (Q8) we aimed to evaluate the financial risk attitude with a more direct statement in a negative frame: “I am not willing to take any financial risk.” The results in Figure 1 show that women are less willing to take financial risk than men.

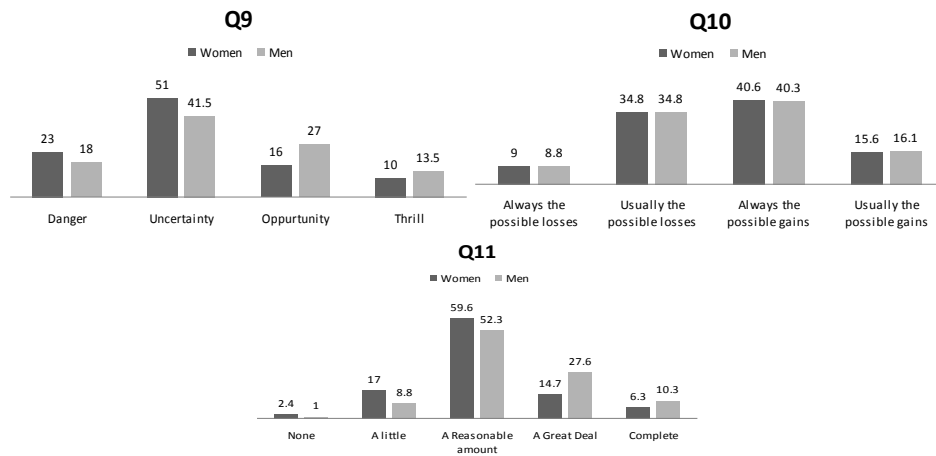


**Figure-1.** Financial Risk Attitude Differences by Gender



In order to assess varying dimensions of financial risk tolerance, we used the word associations in items 9 and 10. Item 10 was adapted from Prospect Theory. Prospect Theory claims that individuals evaluate potential losses and gains relative to a reference point (Kahneman & Tversky, 1979). The results for item 10 showed that there is statistically significant gender difference when the question is framed in terms of gains and losses. According to the results for item 9, women are more inclined to perceive financial risk as danger or uncertainty than men. Men are also more inclined to perceive financial risk as opportunity and thrill.

**Figure-2.** Financial Risk Tolerance Differences by Gender



To assess the role of skill in financial decisions, we asked respondents to rate their level of agreement to the statement: “How much confidence do you have in your ability to make good financial decisions?” (Q11). Results in Figure 1 showed that men have a higher propensity to attribute good financial decisions to their own skills. These results also reveal support for the term overconfidence which was defined as “the tendency to place an irrationally excessive degree of confidence in one’s abilities and beliefs.”(Grinblatt & Keloharju, 2009). The results in item 11 are consistent with the findings of Barber & Odean (2001) which showed that men are inclined to feel more competent than women especially in financial matters and indeed gender differences are confirmed.

#### 4. CONCLUSION

In our study of Turkish university students, we found that gender differences do, indeed, exist regarding risk attitude and tolerance of risk. Overall, women were found to be less risk tolerant and less willing to undertake financial risk. Women were far less willing to risk financial losses even with the prospect of great gain. Women were also more apt to feel regret at any losses that they might incur which points to the important role that potential regret plays in financial behavior. On the other hand, men tended to equate risk with thrill and opportunity whereas

women viewed it as dangerous. Finally, men were more inclined to feel confident in their ability to make good financial decisions than women.

The willingness to undertake some amount of financial risk is enormously important in terms of attaining financial success. As the old saying goes nothing ventured, nothing gained. If women are generally more risk adverse, as our study indicates, this has important implications for both providers of financial services and the economic position of women in emerging markets such as Turkey. While the actual reasons for women's aversion to financial risk lay outside the scope of this study, it remains an important area for further research. Understanding what divides the genders with regard to issues of financial risk will allow for the development of financial services and instruments which will help women become better integrated into financial markets.

## **BIBLIOGRAPHY**

Anbar, Adem, Melek Eker (2010), "An Empirical Investigation for Determining of the Relation Between Personal Financial Risk Tolerance and Demographic Characteristic", *Ege Academic Review*, Vol. 10, No. 2, pp.503-523.

Barber, Brad, Terrance Odeon (2001), "Boys will be boys: gender, overconfidence, and common stock investment", *The Quarterly Journal of Economics*, Vol. 116, No. 1, pp.261-292.

Bernasek, Alexandra, Stephanie Shwiff (2001), "Gender, Risk, and Retirement", *Journal of Economic Issues*, Vol. 35, No.2, pp. 345-56.

Bromiley, Philip, Shawn Curley (1992), "Individual Differences in Risk Taking", (in: Yates, Frank-Ed., *Risk-Taking Behavior*,) Chichester, UK: Wiley, pp. 87-131.

Cordell, David (2002), "Risk Tolerance in Two Dimensions", *Journal of Financial Planning*, Vol. 15, pp.30-33.

Demirel, Engin, Süleyman Gökhan Günay (2011), "Financial Risk Taking Behavior Comparisons between two Different Countries Based on Demographic Factors: Turkey and Macedonia Case", *Middle Eastern Finance and Economics*, Vol. 10, pp.111-120.

Donkers, Bas, Bertrand Melenberg and Arthur Van Soest (2001), "Estimating Risk Attitudes Using Lotteries: A Large Sample Approach", *Journal of Risk and Uncertainty*, Vol.22, No.2, pp.165-95.

Diskson, Gordon (1982), "A Comparison of Attitudes Towards Risk among Business Managers", *The Geneva Papers on Risk and Insurance*, Vol.23, No.7, pp. 89-97.

Eagly, Alice Hendrickson (1995), "The Science and Politics of Comparing Women and Men", *American Psychologist*, Vol.50, pp.145–158.

Eckel, Catherine, Philip Grossman (2002), "Sex Differences and Statistical Stereotyping in Attitudes Toward Financial Risk", *Evolution and Human Behavior*, Vol.23, No.4, pp.281-295.

Galasic, Mirta, Michael Bosnjak (2009), "M. Effects of Questionnaire Length on Participation and Indicators of Response Quality in a Web Survey", *Public Opinion Quarterly*, Vol.73, No.2, pp.349-360.

Grable, John, Ruth Lytton (1999) "Financial risk tolerance revisited: The development of a risk assessment instrument", *Financial Services Review*, Vol.8, pp. 163-181.

Grinblatt, Mark, Matti Keloharju (2009), "Sensation Seeking, Overconfidence, and Trading Activity", *Journal of Finance*, Vol. 64, No.2, pp.549-578.

Hsee, Christopher, Elke Weber (1999), "Cross-national differences in risk preferences and lay predictions for the differences", *Journal of Behavioral Decision Making*, Vol.12, No.2, pp.165-179.

Johnson, Jonnie, Philip Powell (1994), "Decision making, risk and gender: Are managers different?", *British Journal of Management*, Vol.5, pp.123-138.

Kahneman, Daniel, Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk", *Econometrica*, Vol.47, No.2, pp.263-291.

Leigh, Barbara (1999), "Peril, chance, and adventure: Concepts of risk, alcohol use and risky behavior in young adults", *Addiction*, Vol.94, No.3, pp.371–383.

Levin, Irwin, Mary Snyder and Daniel Chapman (1988), "The Interaction of Experiential and Situational Factors and Gender in a Simulated Risky Decision-Making Task." *The Journal of Psychology: Interdisciplinary and Applied*, Vol.122, No.2, pp.173-81.

Miller, Paul, Nancy Fagkey and Nancy Casella (2009), "Effects of problem frame and gender on principals' decision making", *Social Psychology of Education*, Vol.12, No.3, pp.397-413.

Unger, Rhoda (1990), "Imperfect reflections of reality: Psychology constructs gender", (in: Rachel Hare, Mustin and Jeanne Marecek-Ed., *Making a Difference; Psychology and the Construction of Gender.*), Yale University Press, New Haven, USA, pp.107

Powell, Gary (1990), "One more time: Do male and female managers differ?", *Academy of Management Executive*, Vol.4, No.3, pp.68–75.

Powell, Melanie, David Ansic (1997), "Gender Differences in Risk Behaviour in Financial Decision-Making: An Experimental Analysis", *Journal of Economic Psychology*, Vol.18, No.6, pp.605-628.

Prince, Melvin (1993), "Women, men and money styles", *Journal of Economic Psychology*, Vol.14, No.1, pp.175-182.

Schubert, Renate, (2006), "Analyzing and managing risks – on the importance of gender differences in risk attitudes", *Managerial Finance*, Vol.32, No.9, pp. 706-715.

Schubert, Renate, Brown Martin, Matthias Gysler and Hans Wolfgang Brachinger (1999), "Financial Decision-Making: Are Women Really More Risk-Averse?", *The American Economic Review*, Vol.89, No.2, pp.381-385.

Tutek Hülya., Berna Aydoğan, Gökçe Tunç, Gülin Vardar (2010), "The impact of gender differences on financial risk perceptions (Finansal risk algılamalarında cinsiyet farklılığının etkisi)", *İktisat İşletme ve Finans*, Vol.25, No.292, pp.47-70.

Zinkhan, George, Kiran Karande (1991), "Cultural and gender differences in risk taking behavior among American and Spanish decision-makers", *Journal of Social Psychology*, Vol.131, No.5, pp.741-742.

Weber, Elke, Ann-Renee Blais and Nancy Betz (2002), "A Domain-specific Risk-attitude Scale: Measuring Risk Perceptions and Risk Behaviors", *Journal of Behavioral Decision Making*, Vol.15, pp.263–290.