

EFFECTS OF ANGER AND ANXIETY TRAITS  
ON FINANCIAL RISK TOLERANCE  
OF  
NOVICES AND EXPERTS

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Approval of the Graduate School of Social Sciences

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## **ABSTRACT**

### **EFFECTS OF ANGER AND ANXIETY TRAITS ON FINANCIAL RISK TOLERANCE OF NOVICES AND EXPERTS**

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Anger and anxiety have been analyzed in behavioral decision making field for a long time. Especially, their effects on the process of decision making under risky choices have been examined heavily. In previous studies, it has been found that anger and anxiety, both in state level and trait level; have opposite influences in terms of the propensity to take risk. Concordantly, in the present study, trait anger and trait anxiety were investigated with regards to their effects on financial risk tolerance. The study conducted by using hierarchical linear regression and as expected dispositional anger showed significant positive relationship with risk tolerance, whereas dispositional anxiety became meaningful and showed association in reverse direction

just in the sample consisting of students. Unfortunately, the second sample which involves bank employees gave no statistically valid insights for this study.

Keywords: Trait anger, trait anxiety, financial risk tolerance, financial decision making

## ÖZ

# UZMANLARIN VE ACEMİLERİN KARAKTERİSTİK ÖFKE VE ENDİŞE SEVİYELERİNİN FİNANSAL RİSK TOLERANSI ÜZERİNDEKİ ETKİSİ

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Öfke ve endişe, davranışsal karar verme alanında uzun zamandır incelenmektedir. Özellikle, bu iki duygunun riskli seçenekler içeren kararları alırken, süreci nasıl etkilediği yoğunlukla araştırılmaktadır. Önceki çalışmalarda, öfkenin ve endişenin hem karakteristik yapı olarak hem de anlık duygu durumu olarak incelendiğinde, risk alma yatkınlığı üzerinde birbirine zıt etkiler yarattığı ortaya çıkmıştır. Buna bağlı olarak, bu çalışmada, öncekilerden farklı olarak bu iki duygu kişisel farklılık olarak ele alınıp finansal risk toleransına olan etkisi araştırılmıştır. Hiyerarşik lineer

regresyon kullanılarak elde edilen bulgular, beklenen sonuçları vermiş ve öfke risk toleransı ile pozitif yönlü bir ilişki gösterirken, endişe ise ters yönlü bir ilişki sergilemiştir. Bu anlamlı etkileşim öğrenci ve banka çalışanlarından oluşan ana örneklem ve sadece öğrencilerden oluşan grupta gözlenirken, banka çalışanlarının katılımıyla oluşturulmuş örneklemde maalesef ki istatistiksel açıdan geçerli sonuçlar elde edilememiştir.

**Anahtar Kelimeler:** Finansal risk toleransı, finansal karar verme, karakteristik öfke, karakteristik endişe.

*To my beloved family, my mother Jülide Hüner, my father Kadir Hüner, my brother Cem Hüner and my brother's wife Burcu Hüner.*

*Without the support of my mother during the sleepless nights and encouragement of my father and my brother in any moment of crisis this thesis could not have been completed.*

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## CHAPTER 1

### INTRODUCTION

#### 1.1 State and Trait Emotions in Decision Making

Most of the decisions that are made in our daily lives contain possibilities of gaining or losing rather than status quo. When the matter is a loss case, decisions generally end up with choosing riskier options because people tend to behave in a risk seeking manner; in contrast, if it is a gain case, individuals do not prefer to choose riskier options and take risk-averse attitude. This was actually proven by the research of Kahneman and Tversky. By using gambles involving both gain and loss situations, it was revealed that people had propensity to be more sensitive towards loss cases which means they gave importance to losing possibility of money or objects rather than possibility of a gain. This can be covered by Prospect Theory which is the best model that explains decision making process of individuals under risk and uncertainty (Kahneman, Tversky, 1979).

One of the rising questions of decision sciences is whether emotions are associated with the decisions we make. This issue dates long back and started by Descartes. He was the first scholar who argued influence of our emotions on our cognition ability (Damasio, 1994). After arousal of this issue, the impact of emotions became one of the main concerns in different kinds of disciplines.

Researchers believed that people made their decisions according to expected utilization theorem which states that individuals chose the option which gave the maximum return (Loewenstein, Lerner, 2003) before influences of emotions were approved. Some scholars claimed that high quality results could only be reached by effective usage of expected utilization theorem (Bettman, Luce, and Payne, 1998). However, it was seen afterwards that people actually could not measure quality of their choices and related results and could not behave in maximum utilization

manner (Schwarz and Clore, 1996). Therefore, many scholars started to examine why individuals did not prefer to act by rational manner. At this point, they began to examine impacts of emotions on our economical behaviors and it has been still studied extensively in academia.

Emotions, indeed, can be categorized as 'state emotions' which means levels and kinds of them could be change across time and place and 'trait emotions' which means for each individual it is a specified characteristics and does not change across time and place. Therefore, during the analyses of emotions' effects, scholars worked away with both state and trait emotions. At the beginning, the investigation of those effects was explained by two different theorems which were valence based approach and appraisal tendency approach. In valence based approach, emotions were categorized as positive or negative feeling states and the emotions under same valence were accepted to have same influences on the decisions. However, over time, this approach became a debatable issue because some studies showed that the emotions under same category did not represent same influences on decisions. Therefore, after such inconsistencies, appraisal tendency approach emerged. This theory supported the likelihood that emotions under same valence did not have similar effects on judgment or decisions and emotions under different valence gave similar results (Lerner & Keltner, 2001).

## **1.2 The Present Study**

In the present study, anger and anxiety were dealt. Actually, effects of anger and anxiety on decision making process under risky choices have been examined extensively for a long time. However, this study will focus on the influences under financial risk tolerance rather than risky choice context. Moreover, these influences will be examined on students and bank employees.

In previous research, it has been found that anger and anxiety, both in emotional level and trait level, have opposite effects in terms of propensity to take risk. That is, as the level of anxiety increases, people do not prefer take risk or they avoid making

investments and behave in a more conservative way when dealing with financial issues. Anger, on the other side, plays a totally opposite role. In other words, if level of anger escalates, individuals take more harsh moves in risky environments and they do not avoid taking risks.

Risk tolerance shows the degree of variability that an investor is willing to stand especially in investment environment. Therefore, people with high risk tolerance behave in a more aggressive way while making decisions among risky choices whereas a person with a low level of tolerance chooses not to take risks. Hence, in this study, it is expected that trait anger has a positive relationship with financial risk tolerance which is consistent with former analysis. That is, trait anger level and financial risk tolerance level are predicted to move in same direction. A person with high level of anger chooses a high-risk option in financial field and a person with low level of anger, in contrast, behaves prudently and does not chose to be a part of a gamble as s/he is not tolerant towards risk. Trait anxiety, on the contrary, is expected to have a reverse effect. That is, anxiety level and its effect on financial risk tolerance are predicted to move in opposite directions. Former studies show that people tend to run away from negative outcomes if they have high level of trait anxiety. In such circumstances, therefore, risk tolerance falls and they do not prefer to make investments or go for in a gamble. Accordingly, if a person has a low level of anxiety, his/her tendency to opt for high-risk choice increases because the financial risk tolerance rises, too.

In present study, two different samples will be compared in terms of effects of these two traits. One of the samples involves undergraduate students and the other one involves bank employee participants. The reason of such comparison is that whether these two emotional traits have same impacts on risk preferences in terms of financial risk tolerance for financial business professionals and people who are not professionals but have interest in financial issues in their daily lives. That is this categorization can be stated as comparison of experts, bank employees, and novices, students. This way, we can have a chance to see whether individuals from

professional finance sector are affected by their level of traits, too. In fact, bank employee participants are expected to behave in a rational manner and make their choices according to expected utility framework compared to novices. Therefore, personality traits are not expected to be an effective factor on risk tolerance of experts.

The present study was conducted to answer these expected results that were specified above. To reach these conclusions, a quantitative research was carried out. Moreover, a survey methodology was employed and a questionnaire was prepared to measure participants' anger and anxiety levels and also financial risk tolerances. The questionnaires were applied to both samples. The results of the survey were run by hierarchical linear regression model to see the purged effects of two emotional traits on risk tolerances.

At the end of the study, by means of the results obtained throughout these steps, it will be possible to have prospective ideas towards risk tendencies and tolerances of people with different levels of trait anger and trait anxiety. This conclusion will be helpful especially in the investment industry. For example, if a banker can have a chance to recognize the characteristics of the customer, then s/he can offer the best product that the customer cannot refuse. In a more general context, this study will present a valuable finding for both creditors and borrowers in terms of selecting the optimal choice of investment products and also method of debt.

This thesis consists of five main parts. In the first part of the study, introduction was made to the thesis. In that part, the aim of the study and the reason why it was taken as a research subject was explained clearly. After that part, the literature review section will cover significant studies and crucial points relevant to the thesis topic. Previous research, their findings, suggestions, developments throughout time will be mentioned in this section. The studies related with anger and anxiety in risk choices will be expressed explicitly to figure out the contribution of the present study. After setting the framework of the related literature, the methodology and data collection

will be clarified in the third section. Primarily, the methodology used to reach expected outcomes will be defined. Recruited measurements to evaluate participants' level of trait anger, trait anxiety and financial risk tolerance will be introduced. The fourth section will demonstrate the analyses and results. The analyses part will include descriptive statistics and the model specification that will be used in the study. In the results parts, the findings will be stated. Finally, at the last chapter, discussions will be made regarding conclusions drawn in previous parts and limitations and suggestions for future research will be given.

## **CHAPTER 2**

### **LITERATURE REVIEW**

In this study, emotions have been approached in trait manner. However, some studies highlight that in decision and judgments field, investigating personality traits and state emotions have some resemblances (Gross, Sutton & Ketelaar, 1998). For example, there exist many research that figured out significant association between neuroticism, characterized by fear, anxiety, frustration and similar feelings, and negative affect as well as meaningful relation between extraversion, characterized by enthusiasm, talkativeness and similar feelings like interacting outside, and positive affect (Costa & McCrae, 1980; Watson & Clark, 1984, 1992). By grounding on this point of view, in literature review part, former studies depending on both state and trait influences of anger and anxiety were depicted.

#### **2.1 The Role of State Anger and State Anxiety in Financial Decision Making**

Economic theory highlights that the best financial decision is one which gives maximum expected utility. For instance, while making an investment decision, it is important to assess risk over return ratio to maximize expected utility of every choice before invest in (Rabin & Thaler, 2001). On the contrary of that idea, some studies indicated people cannot assess investment risk objectively. Parker and Fischhoff (2005) suggested that, the risk taking behaviors of individuals depend on poor evaluations and therefore, individuals could not determine their maximum utility properly.

There are many factors that affect people's evaluation process of choices. Surely, one of these factors is emotional state. There are many studies that show relationship between emotional states and behaviors of individuals while making a decision. For example, in his research, Smith revealed that the feeling of depression causes overeat

(2009). In another study it was pointed out that individuals with anger tended to behave carelessly and frightened people were inclined to act impulsively (Ahn, 2010). The impact of emotions; therefore, is an important issue for scholars in terms of the effects of such feelings on financial behavior habits and risky choices.

Now, we will look former studies that demonstrate effects of anger on our decision process under risky choices. Lerner and Tiedens (2006) express that anger should be examined deeply in decision making field. There exist some reasons for this statement. First of all, in our daily lives, we feel anger so frequently. This idea is supported by Averill (1982) and according to his research, people become from mildly to moderately angry two or three times in a day or at most in a week. Moreover, Hansen and Hansen (1988) also assert that anger is almost the most noticeable feeling.

By appraisal-tendency approach, Lerner and Keltner (2000) emphasize how anger affects decisions under risky choices. In their research, they showed that there was a relationship between anger and optimistic judgments and choices. Moreover they stated that the level of uncertainty and change in target did not affect this relationship which demonstrates the robustness of effects of anger.

In the next research of Lerner and Keltner (2001), four different studies were conducted to see influence of anger in different contexts. In the first and second study, they depicted that angry people tended to make risk seeking choices. Moreover, according to findings of the study angry people inclined to hold optimistic feelings about future events compared fearful people. By the way, this result again confirmed the appraisal tendency theory because their effects resulted in different ways although fear and anger had same valence.

Fessler et al. (2004) again used appraisal tendency theory to show effect of anger by comparing it disgust. By conducting a survey which combined different types of risks and using regression to see the relationship between risk tendency and affective

state test scores, they demonstrated that students who showed high level of anger preferred riskier choices.

Now, we will look former studies that indicate effects of anxiety on our decision process under risky choices. Linkage between anxiety and risk-averse decision making has been hypothesized by many research. Feeling anxious gives individuals the signal of potential threats in environment (Schwarz&Clore, 1996). Therefore, anxious people behave in a risk avoidant manner to protect themselves from perceived threats. It has been proved that such people engage in chronic and pervasive forms of aversive behaviors due to existence of decision making bias (Barlow, 2002).

In general, some researchers assert that there is a relationship between negative emotional states and risk averse behavior. However, risk aversion seems to be specific to anxiety at least partly. For example, Rahnunathan and Pham (1999) studied on sadness and anxiety in risk preference context. They offered participants some choices and requested them to choose between two gambling options or between two jobs. Each case contained trade-off between reward and risk. Findings showed that anxious people were risk averse and they preferred the options with low level of risk in each case.

That anxiety leads to risk aversion was confirmed by many other studies, too. Maner and Gerend, (2007) as well as Vaˆstfjaˆll et all (2008) showed the significant effect of anxiety on risk aversive behavior also. By using laboratory task and making successive analyses, they revealed anxious participants had no tendency to take risk compared to non-anxious participants.

Except from direct relation of anxiety and risk taking, some scholars gave effort to show the linkage between them by using moderator factors. For example, Smith et al (2016) employed ambiguity in their study to see impacts of a moderator. The study conducted by recruiting some individual differences measurements and then a computer programme to measure risk tendency. As expected, individuals with high

level of anxiety preferred low risk when there was high level of ambiguity; in contrast, when ambiguity set as low, this time risk taking and dispositional anxiety did not show a meaningful association. Therefore, they claimed that ambiguity level should be concerned, as well.

## **2.2 The Effect of Trait Anger and Trait Anxiety on Financial Decision Making**

In earlier researchers, scholars tended to make an effort to explore influence of personality traits on risky choices by especially using commonly accepted questionnaire, the Big Five. For example, in their study, Lauriola and Levin (2001) stated that higher scores on “Openness to Experience” which was characterized by originality and curiosity linked with greater risk taking where as higher scores on Neuroticism which means getting upset easily were linked with less risk taking, in the domain of gain. Furthermore, in the loss domain, high Neuroticism was related with greater risk taking.

However, as Lazarus (1994) states it is great of importance to distinguish effect of personality traits as individual difference which shapes reactions of people towards specific emotional states and intensity of experienced emotional state while assessing emotions. For the last two decades, it has been concentrated on the studies related with impact of emotions and personality traits on financial and risky decisions (Gibson, 2006).

As stated before, according to expected utility theory, people should behave in a manner which results in maximum return in financial field. However, as prospect theory suggests, the sensibility of individuals towards gain and loss cases can change and they tend to behave depending on their sensation when losses are matter. Nevertheless, except from utilization concern, there are some other factors affecting decision under risk. In the previous part, influences of emotions that change across from situation to situation, that is momentary feelings were mentioned. Now, in this part, individual differences depending on these emotions, namely trait side of the previous research will be mentioned.

There are some research that claim characteristics are not important in investment and monetary decisions (Lo&Repin, 2005), however, a great number of studies to explore relation between personal traits and financial behavior exist. One of them is the attempt of Carducci and Wong (1998). They found that people with Type A personality which can be characterized by competitiveness, ambitious, impatience, aggressiveness, tend to choose the options with higher level of risk compared to people with Type B personality characterized by relaxed, easy going, patience. Grable (2000), for example, depicts that when personality characteristics come together with some particular demographics such as being male, older and married risk acceptance could be affected which concludes tolerance of declining price of investments even though upstream change is expected in daily money matters. A more specific examination was done by Mayfield, Perdue, & Wooten (2008). They demonstrate choice in short term investments are significantly correlated with extraversion and conscientiousness; that is, risk acceptance and therefore preferences are differ from person to person according to level of these characteristics.

Maner and Schmidt (2005) demonstrate that the association between trait anxiety and risk-avoidant decision making this time. In his study, he figured out the relationship between trait anxiety, trait depression and risk appraisals. At the end of the study implemented on one hundred seventy five psychology students, it was revealed that higher trait anxiety level was linked to low willingness to take risk for a wide range of behavioral context. Concordantly, the people with higher anxiety level were inclined to see negative outcomes as more severity than it was, which showed that heightened perception of severity as mediator between anxiety and risk avoidance. Moreover, before that study, traditionally the scholars taught that the reason behind the risk avoidant behavior of the trait anxiety may be depression (Allen & Badcock, 2003). However, during the analysis, it was observed that for all level of depression, the relevancy between trait anxiety, negative risk appraisals and risk avoidance stayed the same.

In the next research of Maner and Schmidt (2006), linkage between dispositional anxiety and risk tendency was handled by taking into account some mediator factors. Firstly, they supported the claim association between anxiety and behave in risk avoidant manner across a wide range of context. In the second step, they pointed out the relationship with the pessimistic risk appraisals. By conducting mediator analyses, severity of negative outcomes and heightened perception of likelihood were found that they mediated that link between anxiety and engaging in risk avoidant decision.

Maner et al. (2007) investigated three studies in order to show relations between dispositional anxiety and risk avoidant decision making but this time by conducting the study on clinical patients. At the first and second steps of their research, they figured out association between personal differences such as trait anxiety, worry and social anxiety and risk avoidant behaviors. At the final study, non-clinical controls and clinical patients were compared which resulted in anxiety disordered participants demonstrated high level of risk aversion. Ultimately, this researched supported the claim that risk avoidance was linked with anxiety particularly.

In one of the research of Giusberti, it was found that, individuals with high trait anxiety choose to make their choice quicker compared to those who have low trait of anxiety level under uncertain conditions for formal and hypothetical real life decision. This difference comes from reasoning task when one needs to seek for information to get a conclusion. In fact, high trait anxious individuals aim to decrease the uncertainty, however, they may ignore the correctness of the decisions they make since they do not effort to obtain more evidence or supportive findings. In this regard, the difference in behavior of people who have different level of anxiety trait disappears if all information and evidence to reach a decision are available for everyone (Bensi&Giusberti, 2007).

Analyses on trait anger do not go back a long time ago. It has been started examined in recent times and generally scholars have consensus on effect of trait anger on risk

seeking decisions. Gambetti and Giusberti (2009), for example, demonstrated the significant relation of trait anger and risky decisions in hypothetical financial, social and health scenarios. The findings showed that, individuals with high level of anger inclined to choose riskier options compared to less angry individuals.

Gambetti and Giusberti (2016) stated in our daily life decision under risk is positively associated with anger, which means that increase in angry level corresponds to prefer more risky choices than people with lower angry level. Moreover, as supporting evidence they pointed out that affective component of anger which is angry feeling and cognitive component of and which is hostility were both linked with risky decision in everyday life situations.

Anger and anxiety have different effects on investment choices. Although the best choice is actually associated with saving money in a rational manner, economist points out that it is associated with investing in medium or long term diversified portfolios (Barber&Odean 2000). However, in their research, Giusberti and Gambetti (2012) showed anxious people do not act as expected; even they act prudently and prefer conservative choices. When the matter is trait anger, this time, on the contrary, individuals choose better choices as regards economic gain and prefer risky choices. This study shows how emotions can shape our investment choices and decisions. These findings also support the evidence, put forward by Maner (2007), which states the influence of individual dissimilarities in affective experiences on risk decision making. Moreover, Mitte (2007) supports the claim the reverse effects of trait anger and trait anxiety. In his research, it was revealed that high anxious people prefer safer options under risk whereas high anger people choose riskier options.

In their next research, Gambetti and Giusberti (2014) analyzed the housing loan preferences of individuals. Actually, this analysis again clinched the argument of impact of personality traits on real life decision making because the study confirm that trait anxiety is positively related whereas trait anger is negatively associated with mortgage risk perception. Concordantly, anxious people prefer high predictability of

housing loans. Moreover, these results support the existing theories saying influence of specific emotions on judgment and decision making (Lerner & Keltner, 2000). At the same time the obtained findings stress the utility of a motivation based approach to decision making (Vaˆstfjaˆll and Gaˆrling, 2006)

### **2.3 Risk Tolerance in Financial Decision Making**

Emotions have been generally examined under risk aversion literature. However, in this study, not risk aversion but financial risk tolerance context will be used as a contribution of the study. The point behind this contribution was to show whether financial risk tolerance structure reflects in same manner with risk aversion context. Indeed, there is a linkage between financial risk tolerance and risk aversion, which supported by a former research (Faff, 2008). Therefore, if there exists such an association between these two contexts, it is reasonable to expect that emotions will show similar effects on risk tolerance, too.

Financial risk tolerance means investor's attitude towards risk, that is, how much willingly the investor makes financial decision when there are uncertainty and investment return volatility (Grable, 2000). Under this circumstance, risk tolerance and risk aversion act in opposite direction. Hence, individuals with more risk tolerance are less risk-averse, that is, they tend to choose riskier option and low risk tolerant individuals; therefore, have high level of risk aversive attitude towards riskier choices.

In his research, Faff, in order to figure out the connection between financial risk tolerance and risk aversion attitude, a two staged experimental design was conducted. As the first stage, risk tolerance score of people were obtained by a survey and later on the ones who were showed their consent to continue to experiment with lottery gambling. The main idea was to see whether risk tolerance score was predictor of risk attitude in lottery experiment. At the end of the study, for female participants and when high stake gamble was recruited, the linkage between risk tolerance and risk aversion became significant.

In economic planning in the daily life choices and investment management process when one want to put money to good use, it is a necessity to understand financial risk tolerance of relevant person. As Garman and Forgue(1997) state one of the crucial part of assessing risk profile of an individual is to apprise in somehow risk tolerance. However, unfortunately because of its highly subjective structure, it is really hard to measure it. Therefore, a great number of scholars have been attempted to transform the risk tolerance into a quantitative measure. Hence, the research to investigate the factors effecting risk tolerance and count in the existing measurements has still attracted academicians.

Financial risk tolerance, in a theoretical manner, can be affected from different dimensions of risk. Many research showed that two main components of risk had significant effects on risk tolerance that someone is willing to accept. These dimensions are risk attitude and risk capacity. In that point, Cordell defines Risk capacity as the amount of risk that one can afford to take (2002) and also according to Weber, Blais and Betz (2002) risk attitude is the state of individuals in the process of transition from risk aversion to risk seeking. Moreover, they stated that willingness to take risk changes depending on the domain. That is, a person who is risk-averse in health domain may be risk seeker in financial domain. Nonetheless, these two dimensions are connected to two separate features; that is to say, Weber, Blais and Betz says that risk attitude is related with psychological attitude, in contrast, according to Grable, Davey and Roszkowski(2005) risk capacity is associated with financial attitude.

Under risk tolerance literature, it could be possible to see that especially the relationship between socio-demographic drivers and financial risk tolerance has been examined heavily. For example, gender type and income level actually were affirmed by scholars in regards to they have positive relationship with risk tolerance. That is, females are more conservative than males in finance domain, concordantly; males take riskier behaviors (Riley, Chow, 1992, Frijns, Koellen, Lehnert, 2008). When the other variables hold as constant, it was found also that, income has positive

relationship with risk tolerance, too. According to many research, it was figured out that when income level get increased, individuals start to incline to be more risk seeker when handling with financial stuffs (Morin and Suarez, 1983, Hallahan, Faff, McKenzie, 2004). Except these socio-demographic drivers, age, marital status, education level and financial knowledge or expertise have been still argued by many scholars because there has not built consensus among them. In present study, marital status were not taken in demographic information form, therefore the previous research related with marital status will not take place in literature review part.

Age is controversial in terms of its significant effect on financial risk tolerance. In their research of Frijns, Koellen and Lehnert (2008), survey that were made to university students and employees interested in financial subjects demonstrate that age affects people's risk aversion in portfolio choices. They states that risky assets were chosen by older investors compared to younger ones. In of the latter studies of Hallahan, Faff and McKenzie (2003) age did not come out as a meaningful variable on risk attitude but in the next research (2004) they demonstrate that there exist a significant influence of age and as it increases, financial risk tolerance falls. This opposite move does not occur under a linear relationship but nonlinear relationship as put forward in earlier research of Riley and Chow (1992).

Education level is another controversial variable with regard to influence on risk tolerance. In the research of Hallahan, Faff and McKenzie (2003), education level was also found as insignificant like age variable. However the one that was conducted in 2004, this time education became a significant variable. Consistently Gilliam, Chatterjee and Zhu (2010) showed similar result, too. In their research they recruited database of a risk profiling system which consisted of US residents. They figured out that, higher education level is positively associated with risk tolerance. That is, individuals with high educational level have higher risk tolerance, too. The authors confirms that result by stating that such people with high education level do not incline to underestimate their risk tolerance and based on their educational

training their chance to have investment experience are greater compared to individuals with low educational level.

One of the factors affecting risk tolerance is financial education. Actually its effect has been a debatable issue. There exist some studies that highlight the effect of financial literacy on financial risk tolerance. Grable (2000) claims that there is positive relationship between two variables and says as experience and knowledge in financial topics increase, financial risk tolerance will have a move with same direction. In one of the later studies, Hallahan et al. (2004) support this finding and show the significance of correlation between both. However, these results have not been found as enough by all scholars. Yao et al. (2011) state that there is a need for research to examine usage and effect of financial literacy on risk tolerance. In addition to that, Ryack (2011) calls attention of others to encourage make analysis on impacts of financial literacy and experience in financial transactions.

#### **2.4 Decision Making Process of Novices and Experts**

In the way of decision making process, novices and experts differ from each other. For this study, especially their differences in financial decision making process and risky choices context were focused on.

Before giving the literature, the specifications that discriminate novices and experts should be mentioned. The well-established findings of Glaser and Chi (1988) states there exist seven main superiorities of experts relative to novices which are: excelling mainly in their own domain, seeing large meaningful patterns in their domain, handling and answer problems in advance, have superior memory, detecting deep structure in the problem, giving importance to conduct qualitative analysis of a problem and finally have strong self-monitoring skills.

In their financial decisions, investors take some risk for sure. Some make poor decisions whereas some make good ones. The reason of why investors face with these two different results comes from their financial knowledge actually. Former research suggest that there are exactly two main reasons that can explain the

relationship between financial knowledge and risk taking in especially investment field. The first one says that higher level of financial knowledge is positively related with smart financial behavior. That is, as the level of financial knowledge increase, the probability of getting better results from investment decisions also rises (Edmiston and Gillett-Fisher, 2006). The second reason is the positive effect of financial education and experience on financial knowledge and behavior (Lyons, Palmer, Jayaratne, and Scherpf, 2006). In this part of the literature review, we mostly focus on the second reason as our main goal is to put effect of experience on risk preference and financial behaviors.

Financial knowledge could be determined by looking at some factors. Among these variables, experience has an important role and it affects financial knowledge significantly (Chen and Volpe, 1998). Hilgert, Hogarth, and Beverly (2003) found that significance in their successive studies. In the first study, they showed this meaningful relation in personal financial matters. In the following study, they figured out that people with high level of knowledge were more likely to encourage their employees in terms of having financial learning courses or seminars etc.

There are many studies which show linkage between financial knowledge and right decision in savings and investing issues. For example, one of the studies, it was revealed that people with high level of financial knowledge and experience preferred save greater amount of emergency fund compared people with low level of financial knowledge and inexperienced ones (Edmiston and Gillett-Fisher, 2006).

Financial education and practicing in financial field is correlated with good financial behavior according to Loibl and Hira (2005). Additionally, Clark, d'Ambrosio, McDermed, and Sawant (2003) stated that financial management behavior was related to self-directed financial learning because in their study the participants who took retirement planning seminars were much more willing to raise their retirement goals.

In former studies in investment field, especially loan officers were taken as experts. The biggest reason of such selection was due to specialized training of loan officers. Moreover, having similar trainings and making similar decisions were advantage of using loan officers as experts (Libby et al., 1979a, b; Bamber and Stratton, 1997; LaSalle and Anandarajan, 1997). Except from them, some scholars preferred to use financial analysts as experts (Reckers and Pany, 1979; Pany and Smith, 1982; Robertson, 1988). Actually, auditors were also employed in some studies however in those studies the comparison of experts and novices were not made directly.

The differences between novices and experts in the way of how they make their financial decisions have been analyzed in accounting heavily. For example, whether the training reduces the bias introduced by heuristics were studied formerly. Surprisingly, it was revealed that both novices and experts were equally affected by heuristics (Nelson and Tan, 2005; Wu\*stemann and Koch, 2006). Moreover their attitudes towards preference of retirement saving behaviors were also researched. The reason of such studies in that area is to solve the problems related with financial solvency in retirement. Since the main difference between novice and experts is the specialized trainings and for this study this training is related with financial knowledge and experience, moreover, the previous studies relevant with the influence of financial literacy and knowledge on financial decision are taken into consideration.

The subjective risk preferences change for experts and novices. Actually, experts are overconfident forecasters in unpredictable domains (Griffin and Tversky, 1992; Muradođlu and Önkál, 1994) they try to construct more strict and structured probability distributions compared to novices. The reason of why they have such features could be that experts may have high credibility to their knowledge. Actually, when experts make some forecast or financial decisions, they use past trends. More specifically, in gain domain that is bull market in which the values of stocks are predicted to rise, they act in optimistic way whereas in loss domain in which value of the stocks is predicted to fall they behave in pessimistic way.

In order to understand behavior patterns of novices and experts, it is rational to identify their differences in the way of solving problems. Hershey et al. (1990) demonstrated that experts were better at problem solving in terms of their usage of information and controlling environments. In the study, it was revealed that experts used less but informative variables relative to novices since they knew which information was helpful for them. On the contrary, as novices did not know what they needed to solve the problem, more but less informative variables were employed to reach a solution. Olsen (1997) supported this hypothesis by concluding that experts were tend to use probabilistic models whereas novices focused on contextual models while handling with problems containing risk.

In a study, it was figured out that professional managers and experienced investors behaved in same manner when the issue was taking investment risk (Olsen, 1997). Moreover, Ganzach (2004) and Muradoglu (2002) showed that risk and return relationship was positively correlated for experts in familiar assets case. However, for novices the correlation of risk and return was negative in unfamiliar asset case. Byrne (2005) supported these results and additionally he showed experts were better at understanding relationship between risk and return and as the expertise increased people perceived risk more accurately.

The literature review part has been completed. Now, it is possible to clarify research question of this thesis in the light of former studies. As it was mentioned before, our main concern is to detect effects of trait anger and trait anxiety on financial risk tolerance and point out differences arising from two separate samples which are students and bank employees. That is, to sum up, this study aims to explore how levels of anger and anxiety traits affect financial risk tolerance of students and bank employees.

## CHAPTER 3

### METHODOLOGY AND DATA COLLECTION

#### 3.1 Methodology

In this study, survey methodology was used and as an instrument, a questionnaire was prepared. Hierarchical multiple linear regressions were employed in order to make quantitative data analyses. While conducting the model, in the first step control variables which are ‘age’, ‘gender’, ‘education’, ‘work experience’, ‘following financial/economic news’ and ‘interest in financial/economic topics’ were taken as independent variables for bank employee sample and only three of them which are ‘gender’, ‘following financial/economic news’ and ‘interest in financial/economic topics’ were used in student sample and the sample consisted of both bank employees and students. In the second step of regression, personality traits which were trait anger and trait anxiety were added to model to see how these dispositional emotions influenced financial risk tolerance, the dependent variable. By the way, the model was run by SPSS statistical software program.

#### 3.2 Participants

In this study, the data were obtained from two different samples. First sample was third and fourth grade business administration department students of Middle East Technical University. The main goal was to choose the students who were especially inclined to financial topics; therefore, to capture that aim those who have taken at least one financial course as an elective were targeted. This sample could be thought as our novice participants since they have knowledge but no specialized trainings and experience in this field.

The second sample was formed by bank employees. The participants were obtained from Yapi Kredi Bank. Audit board employees who were auditors, senior auditors and chief auditor were main attendees. Except from that, personals from the third biggest branch office of the bank participated in survey. All those bank employees

were located in core of finance sector and masters of their domains. Therefore, in our context, we can say that they are experts.

The questionnaire were sent 164 people in total and only 107 of them completed the whole task which meant that completion rate were just 66% of all. Among 164 participants, 41 of them left the task after completing only first part, which was the demographic information form. The second part of the questionnaire was done only by 122 attendees. After completing Financial Tolerance Assessment section, the next one which named as Trait Anxiety Assessment Form, were finalized by 113 respondents. When it came to last section, Trait Anger Assessment Form, the number of participants fell down to 107.

### **3.3 Measurements**

#### **3.3.1 Demographic Information**

In the study age, gender, education level and work experience information were collected at the first part of the questionnaire. However, for student sample only 'gender' was used as a variable since there was no probability of significant change in other variables. That is, age, education level and work experience got equaled for each participants in student sample. On the contrary, bank employees gave answers to these four types of questions since the range of employees was wide and there was a probability of significant effects of any of these variables.

Except from these questions, some more information were requested from all participants. One was related with how often they follow financial news and the other was related with interest level of dealing with financial topics. The aim was to see whether having knowledge and tendency towards financial stuffs had a significant effect on the risk tolerance. To assess these two added variable, 7 point likert scale was employed.

### **3.3.2 State-Trait Anxiety Inventory**

To evaluate anxiety, the shortened version of State-Trait Anxiety Inventory (STAI) measurement was recruited. STAI was actually created to assess state and anger level by using relatively brief and self-report scales (Spielberger, 1983). It can be said that it is the most frequently used anxiety measurement and it has been translated many languages which makes it also a long-standing measure. Besides, it has been recruited more than three thousand studies (Spielberger, 1989). Original version of the scale consists of totally forty questions and half of them are used to measure state anxiety and the remaining is for assessing trait anxiety. Each question can be answered by 4-point scale starting from “1=almost never “to “4=almost always”. After the origination of this measurement, some scholars generated different versions of it. In this study the Italian STAI-Y2 form is employed (Pedrabissi & Santinello, 1989). This version consists of twenty questions and it is also widely use because it shows high internal consistency and also both convergent and discriminate validity (Spielberger & Sydeman, 1994).

### **3.3.3 State-Trait Anger Inventory**

In this study, to measure the anger level of people, shortened version of state-trait anger expression inventory-2(STAI-X2) was employed. The original form actually generated by Spielberger and consisted of two parts which were evaluating state anger and trait anger. In this inventory, there exist 57-items with 4-point scales. However, for present study, the shortened version of inventory was used (Comunian, 2004) which includes only ten questions. Its validity, and strong internal consistency is proved across various studies (e.g, Spielberger, 1999).

### **3.3.4 Financial Risk Tolerance Assessment**

In this study, to measure the level of financial risk tolerance of individuals, the instrument generated by Grable and Lytton was employed. They firstly, depending on their deep research in academic literature, determined 100 assessment items. While choosing those items, five main things were taken into consideration. Initially

the instrument should include general concept of risk, also it should allow for derivation of risk measure, being relevant to respondents was another rule, the administration should be easy and finally the validity and reliability should be enough (MacCrimmon and Wehrung, 1986). In this first step of the construction of assessment, after examination of face validity of 100 items, it was revealed some items were not valid. Therefore those statements were eliminated and 50 statements remained. As a second stage, since the face validity confirmed, a pilot study was done on undergraduate and graduate students. A bivariate item analysis was conducted and 20 items that included strong relationship between two items were discarded from the assessment tool and finally 30 items remained. Furthermore, the next reduction was done by elimination of items which offered risk-free alternative or non-response choice. The reason of this process was to prevent respondents from choosing non-response categories (Kahneman and Tversky, 1979). In this way, the instrument became 20-statement measurement scale. For scoring, each item had weight from 1 to 4 according to its riskiness. Ultimately, there were eight types of risk in the questionnaire which were: Guaranteed vs. probable gambles, general risk choice, choice between sure loss and sure gain, risk as experience and knowledge, risk as a level of comfort, speculative risk, prospect theory, investment risk. To confirm final form of the instrument, a research was conducted on 1075 individuals. In the end, the instrument gave the conclusion that people with low level of risk tolerance inclined to avoid risky financial situation and less confident in their investment behavior than the ones who had higher financial risk tolerance level.

At the end of the research, a factor analysis was done finally. According to analysis, since they were lacked sufficient loadings to increase internal consistency of the factors, 7 items were omitted, too.

Ultimately, only 13 items remained. This final instrument measures financial risk tolerance regarding investment risk, risk comfort & experience and speculative risk. This instrument actually assessed six main things which were probability of gains, probability of losses, potential gain, potential losses in guaranteed vs. probable

gambles, minimum probability of success given a risky course of action; and minimum returns given a risky course of action.

### **3.4 Procedure**

For this study, a questionnaire which consisted of four main parts with 49 items was prepared. The parts were constructed for assessment of demographic information, trait anxiety level, trait anger level and financial risk tolerance respectively.

#### **3.4.1 Online Survey**

In order to reach targets that, online survey methodology was employed. There were many reasons why an online survey was recruited. Firstly, online surveys are flexible which ease to reach target (Schonlau et al., 2001). For present study, a number of ways to spread the questionnaire such as email or social media messengers and Survey Monkey online survey tool are used. Another advantage of online survey was that it was speed and timeless (Kannan et al., 1998). It facilitated the process and it prevented the time consumption compared to distribution of hard copy of questionnaires. Convenience was the one of the crucial superiority of online survey. By means of that feature, respondents had flexibility of filling the survey at anytime they wanted. Moreover, even they did not complete it at a sitting, they were free to go back and resume to answering questions from where they left (Hogg, 2003). Ease of data entry and analysis also was an advance of online survey. It facilitated enter all data belonging all individuals standing in the sample. This situation actually fastened the process (Wilson and Laskey 2003). Furthermore, the tool used in this study, Survey Monkey, gave a number of descriptive statistics of each question for every individual and the sample.

#### **3.4.2 Sweepstake Incentive**

Incentives are used to increase and improve the completion rate of surveys (Church, 1993). The most frequently used incentives are prepaid and sweepstake incentives. Pre-paid one is actually more common among postal mail surveys (Dillman et al., 2009), whereas in online surveys, generally sweepstakes are used to attract

respondents' attention (Porter & Whitcomb, 2003). For this study, incentive was employed to make a call for students. Since the data gathering process unfortunately came up to summer time which was end of the classes, in order to reach maximum number of students who were third or fourth year of their undergraduate education, incentive was a must. For the first week of survey, students were announced that three of them could win fifty Turkish liras provided that they filled the questionnaires. The announcements were made by e-mails which were sent by instructors of the department. Moreover, the most commonly used social media tool, Facebook, was employed to reach students. Unfortunately, first week, sufficient number of students did not respond questionnaire. Therefore to improve that result, the amount of incentive was increased to one hundred Turkish liras and this time, it worked and adequate number of students participated in survey. At the end of specified period, three winners of a hundred Turkish liras were selected randomly and their financial rewards were transmitted via online banking.

The other sample which consisted of bank employees did not take any incentives. Actually, snowball sampling technique was recruited to reach them.

## CHAPTER 4

### DATA ANALYSES AND RESULTS

In order to figure out the influences of described personal traits on financial risk tolerance and test the hypotheses stated in the first section, hierarchical linear regression was performed. Additionally, before running the regression, all descriptive statistics were examined to characterize the variables used in the research.

#### 4.1 Summary and Descriptive Statistics of the Variables

##### 4.1.1 Descriptive Statistics of the Variables and Correlations for Whole Sample

Summary of characteristics of the control variables are given in Table 1. Among 107 participants, 56 of them are females with 52.3 percentage whereas 51 of them are male with 47.7 percentage. The ages of the sample ranges from 20 to 48 and mean age is 28.74 years and the related standard deviation is 6.704. In terms of education level, none of the attendees of study is graduated from doctorate program. 61 (57%) of them have college degree whereas 15 (14%) individuals are graduated from a master's program. Moreover, the remaining 31 (29%) participants have only high school degree. Work experience range starts from no experience and ends with more than ten years. The summary shows most of the participants (36.4%) have 0-2 years experience. 22 individuals (20.6%) have work experience between 2 years and 5 years. Moreover, the 5 years and 10 years range of experience are chosen by 31 participants (29%). Lastly, 15 (14%) people have more than 10 years of experience.

Except from such demographic variables two different variables related with content are measured. One is how closely the participants follow the financial/economic news. According to observations, most of the participants prefer to follow the news and 82.7 percent of them state their closeness on a 7point likert scale 4 or more. Additionally the highest part of the sample (28%) says they generally follow the

news and the second highest part, 24.3% of whole observations, states they always follow the news.

The other added variable to the demographic information form is interest level in financial/economic topics. The observations demonstrate that 95 individuals show moderate or higher interest in financial/economic topics.

*Table 1. Summary of Demographic Characteristics of the Whole Sample*

<b>Variable</b>	<b>N</b>	<b>Percentage</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Gender</b>	107				
<b>Female</b>	56	52.3			
<b>Male</b>	51	47.7			
<b>Age</b>			28.74	6.704	20-48
<b>Education Level</b>					
<b>High School</b>	31	29			
<b>Collage</b>	61	57			
<b>Master's Degree</b>	15	14			
<b>PhD</b>	0				

Table 1 (continued)

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<b>Work Experience</b>		
<b>0-2 years</b>	39	36.4
<b>2-5 years</b>	22	20.6
<b>5-10 years</b>	31	29
<b>More than 10 years</b>	15	14

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<b>Following News</b>		
<b>almost never – 1</b>	9	8
<b>2</b>	7	6.5
<b>3</b>	3	2.8
<b>generally – 4</b>	30	28
<b>5</b>	19	17.8
<b>6</b>	13	12.1
<b>almost always - 7</b>	26	24.3

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Table 1 (continued)

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<b>Interest in Financial Topics</b>		
<b>no interest – 1</b>	3	2.8
<b>2</b>	4	3.7
<b>3</b>	5	4.7
<b>moderate interest – 4</b>	14	13
<b>5</b>	33	30.8
<b>6</b>	21	19.6
<b>high interest – 7</b>	27	25.2

---

After completing to explain control variables, now, the main variables can be analyzed in terms of descriptive statistics. In Table 2, the statistics are given clearly. Financial risk tolerance is a scale variable and increase in the value shows rise in the financial risk tolerance of individuals. That is, greater values indicate high risk tolerance whereas lower values demonstrate low risk tolerance. The scale changes between 13 and 40 and mean equals to 23,734 which shows that most of respondents have lower risk tolerance. Furthermore, standard deviation is not that much small which shows large deviation in whole sample (SD= 5.184).

Anxiety, a numerical variable, has a mean of 41.51 and observations show a little bit broad spread (SD=8.093). High scores in anxiety variable displays high level of trait anxiety and 51(47.7) of participants state in top 25% of the whole sample; so, they can be named as highly anxious people. Moreover, 26 (24.3%) of attendees exist in

interquartile range meaning they are moderate in terms of their anxiety level. Finally, the remaining (28%) is located in low anxiety group level.

Anger, the last independent variable, again has the same classification as anxiety. Its score ranges between 10 and 34 and mean score equals to 22.56. It has narrower spread compared to anxiety (SD=5.034). According to observations, vast majority of the sample (54.2%) is moderately angry. Furthermore, 30 individuals (28%) are calculated as low angry people and the rest (17.8) has high level of trait anger.

*Table 2. Descriptive Statistics of Main Variables Belonging to Whole Sample*

	<b>N</b>	<b>Percentage</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Financial Risk Tolerance</b>	107		23.738	5.184	13-40
<b>Anxiety</b>	107		41.51	8.093	22-63
<b>Low</b>	30	28			
<b>Moderate</b>	26	24.3			
<b>High</b>	51	47.7			
<b>Anger</b>	107		22.56	5.034	10-34
<b>Low</b>	30	28			
<b>Moderate</b>	58	54.2			
<b>High</b>	19	17.8			

In order to recognize the variables closely and see the internal relationship of each other, correlation statistics were calculated which can be seen unambiguously from Table 3. Kendall Tau correlation statistic was recruited since the assumptions were suitable for the analysis. As it can be clearly understood from the output, at 0.05 significance level, five relationships are meaningful. As it can be captured from the table gender, following news, interested in financial topics and anxiety are correlated significantly with financial risk tolerance. Anxiety level is negatively correlated as expected and the other variables are positively correlated with risk tolerance. However their correlation coefficient values are highly low.

At the 0.01 significance level, only relation between following news and interested in topics seems meaningful and the correlation coefficient is relatively high ( $r=0.525$ )

*Table 3. Correlations of the Study Variables for Whole Sample*

	frt_total	gender	follower	interest	anxiety	anger
financial risk tolerance	1,000	,191*	,147*	,147*	-,176*	,018
gender	,191*	1,000	,137	,224*	-,119	,113
follower	,147*	,137	1,000	,525**	-,020	,053
interest	,147*	,224*	,525**	1,000	-,112	-,020
anxiety	-,176*	-,119	-,020	-,112	1,000	,266**
anger	,018	,113	,053	-,020	,266**	1,000

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

#### **4.1.2 Descriptive Statistics of the Variables and Correlations for Students Sample**

One of the samples used in present research consists of students from Business Administration Department of METU. The detailed summary of the controlled variables are given in Table 4. The observed number of students in the study is 32.

26 (81.3%) of them are female. The most specified characteristic of the sample is having financial literacy. That is, the students who have taken at least one financial elective are targeted because the only way to classify students explicitly according to their financial knowledge was to check whether they took a financial course or not. However, it could be seen from the statistics which belongs to following news variable, even though students seem like they have interest towards finance, they do not much prefer to follow news in their daily lives. The vast majority of the participants sometimes follow the news and 12.5% of them do never follow. Unsurprisingly there is nobody who always catches the news.

Being interested in financial topics variable shows broad spread but generality give high level of interest. 78.1% of the attendee state 4 or more point to themselves with regards to how much they are interested in financial topics.

*Table 4. Summary of Demographic Characteristics of Student Sample*

<b>Variable</b>	<b>N</b>	<b>Percentage</b>	<b>Mean</b>
<b>Gender</b>	32		
<b>Female</b>	26	81.3	
<b>Male</b>	6	18.8	
<b>Following News</b>			
<b>almost never - 1</b>	4	12.5	
<b>2</b>	3	9.4	
<b>3</b>	2	6.3	
<b>sometimes - 4</b>	13	40.6	

*Table 4 (continued)*

	<b>5</b>	8	25
	<b>6</b>	2	6.3
	<b>almost always - 7</b>	0	0
<b>Interest in Financial Topics</b>			
	<b>no interest - 1</b>	1	3.1
	<b>2</b>	2	6.3
	<b>3</b>	1	3.1
	<b>moderate interest - 4</b>	3	9.4
	<b>5</b>	11	34.4
	<b>6</b>	9	28.1
	<b>high interest - 7</b>	5	15.6

The descriptive statistics belonging response and independent variables are given in Table 5 clearly. Financial risk tolerance scores, varies between 15 and 40 and has a mean of 27.55. Standard deviation is relatively high (SD=5.751)

Like the whole sample statistics, most of the participants have moderate or high level anxiety. Only 8 students (25%) match with low level of trait anxiety.

When we look at anger level variable, almost the same spread as anxiety can be seen. Again vast majority are moderately or highly angry students but just 8 students have low level of trait anger.

*Table 5. Descriptive Statistics of Main Variables Belonging to Student Sample*

<b>Variable</b>	<b>N</b>	<b>Percentage</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Financial Risk Tolerance</b>	32		27.66	5.751	15-40
<b>Anxiety</b>	32		41.84	7.642	27-63
<b>Low</b>	8	25			
<b>Moderate</b>	15	46.9			
<b>High</b>	9	28.1			
<b>Anger</b>	32		22.53	5.054	11-31
<b>Low</b>	8	25			
<b>Moderate</b>	14	43.8			
<b>High</b>	10	31.3			

At Table 6, correlation coefficients are given. In this sample, under 0.05 significance level, there are no paired meaningful variables. There exists only one significant correlation which belongs to interested in topics and following news ( $r=0.548$ ). Actually it seems that, this relation has some rational background because if one feel enthusiasm towards financial topics then watching and postdating himself about the developments and progresses occurred in financial sector is an expected behavior. Therefore this relation makes sense in terms of reasonability.

Table 6. Correlations of the Study Variables for Student Sample

	frt	gender	follower	interest	anxiety	anger
financial risk tolerance	1,000	,167	,130	,021	-,167	,106
gender	,167	1,000	,305	,303	,039	,133
following news	,130	,305	1,000	,548**	-,084	,158
interest in topics	,021	,303	,548**	1,000	-,075	,015
anxiety	-,167	,039	-,084	-,075	1,000	,241
anger	,106	,133	,158	,015	,241	1,000

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

#### 4.1.3 Descriptive and Correlation Statistics of the Variables for Bank Employees Sample

The second sample of present study consists of bank employees.

The Table 7 shows the statistics explicitly. Females compose 53.3% of the sample, that is, there are 40 female and 35 male participants. The age of the sample starts from 24 and the oldest attendee is 48 years old (M=31.67, SD=5.905). 55(73.3%) of all employees are graduated from college and only 5(6.7%) of them have high school degree. In addition to that, the number of bank employees who have master's degree is 15(20%). In this sample, most of the participants experienced 5-10 years of work with 41.3%. 11(14.7%) individuals have at most 2 years of work experience and work experience of 18 bank employees vary between 2 and 5 years. Finally, the rest (20%) is at business life for more than 10 years.

Unsurprisingly, due to being a part of financial world, whole employees except 10 of them follow news at least at sometimes level. The great majority with 34.7% always traces financial/economic news and just 5(6.7%) employees do never.

For 'being interested in financial topics' variable, almost the same picture can be seen. 89.3% of this sample interest in financial/economic topics moderately or more

intensely. Only 2 (2.7%) of them do not never interest with such subjects whereas 22 (29.3%) employees prefer always matter to these topics.

*Table 7. Summary of Demographic Characteristics of Bank Employee Sample*

<b>Variable</b>	<b>N</b>	<b>Percentage</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Gender</b>	75				
<b>Female</b>	40	53.3			
<b>Male</b>	35	46.7			
<b>Age</b>	75		31.67	5.905	24-48
<b>Education Level</b>	75				
<b>High School</b>	5	6.7			
<b>Collage</b>	55	73.3			
<b>Master's Degree</b>	15	20			
<b>PhD</b>	0				
<b>Work Experience</b>					
<b>0-2 years</b>	11	14.7			
<b>2-5 years</b>	18	24			
<b>5-10 years</b>	31	41.3			
<b>More than 10 years</b>	15	20			

Table 7 (continued)

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<b>Following News</b>		
<b>almost never - 1</b>	5	6.7
<b>2</b>	4	5.3
<b>3</b>	1	1.3
<b>sometimes - 4</b>	17	22.7
<b>5</b>	11	14
<b>6</b>	11	14.7
<b>almost always - 7</b>	26	34.7

---

<b>Interest in Financial Topics</b>		
<b>no interest - 1</b>	2	2.7
<b>2</b>	2	2.7
<b>3</b>	4	5.3
<b>moderate interest - 4</b>	11	14.7
<b>5</b>	22	29.3
<b>6</b>	12	16
<b>high interest - 7</b>	22	9.3

---

The descriptive statistics belonging response and independent variables are given in Table 8 explicitly. Financial risk tolerance scores change between 13 and 32 in this sample. For students, actually the range is broader and the highest score was greater

which show that there are some students who are more tolerant to take financial risks than bank employees. Concordantly, mean score for this variable is 22.07 and again it is less than the value of student sample (SD=3.895). The trait anxiety level is almost normally distributed in the sample. 22 (29.3%) employees are stated as low anxious, 34(45.3%) of them are named as moderately anxious and the rest is highly anxious individuals.

Trait anger scale is exactly normally distributed. 22 employees have low level of trait anger and the same amount of them have high level of trait anger. The remaining is moderately angry people.

*Table 8. Descriptive Statistics of Main Variables Belonging to Bank Employee Sample*

<b>Variable</b>	<b>N</b>	<b>Percentage</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Financial Risk Tolerance</b>	75		22.07	3.895	13-32
<b>Anxiety</b>	75		41.37	8.324	22-58
	<b>Low</b>	22	29.3		
	<b>Moderate</b>	34	45.3		
	<b>High</b>	19	25.3		
<b>Anger</b>	75		22.57	5.06	10-34
	<b>Low</b>	22	29.3		
	<b>Moderate</b>	31	41.3		
	<b>High</b>	22	29.3		

Now, the correlations can be analyzed. Table 9 demonstrates all pair wise correlations neatly. At 0.05 significance level, the relationship between financial risk tolerance and following news is significant ( $r=0.193$ ). The strength of the relationship is highly low but it says they are positively related which means both variables move in same direction. At 0.01 significance level, 5 correlations are significant. The highest correlation coefficient among them belongs the pair of age and work experience ( $r=0.801$ ). The strength of the relation seems highly great and positive relationship indicates that increase or decrease in one variable ends up with same attitude of the other variable.

*Table 9. Correlation of the Study Variables for Bank Employee Sample*

Variables	1	2	3	4	5	6	7	8	9
1 Financial Risk Tolerance	1.000								
2 Age	.000	1.000							
3 Gender	.193	.082	1.000						
4 Education Level	.036	.039	0.016	1.000					
5 Work Experience	-.048	.801**	.092	.056	1.000				
6 Following News	.193*	.251**	.118	.074	.285**	1.000			
7 Interested in topics	.144	.183*	.194	.146	.238*	.561**	1.000		
8 Anxiety level	.118	-0.07	.038	-.123	-.110	.113	.049	1.000	
9 Anger level	.052	0.035	-.006	.048	-.016	.089	.072	-0.15	1.000

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

## 4.2 Hierarchical Linear Regression Analyses

Hierarchical linear regression is a model that creates successive linear regressions by adding different variables to the model in each step. By this way, it could be possible to control the impacts of covariates and test the effects of certain predictors independently from influence of other factors. In this study, a hierarchical linear regression with 2 steps was run to see the effect of trait anger and trait anxiety on

financial risk tolerance. First level of the regression was run by demographic variables since they were taken as control variables. After constructing the first regression, in the second step, the predictors, trait anger and trait anxiety, were put into the regression. Further analyses and interpretations were made according to the final findings.

#### **4.2.1 Hierarchical Linear Regression Analysis Results of Whole Sample**

As a start, the main model regardless of the sample differences was constructed. In the first step of the hierarchical linear regression, the control variables, age, gender, education level, work experience, following news and interest in topic, were run into the model. In Table 10 the regression summary is given explicitly.  $R^2$  statistic of the model gives relatively high score. It says that demographic variables, for the present study control variables, can explain 10% variation in financial risk tolerance. However, it is not enough to make the model significant, F statistics should be used to check the significance of the model. In order to make easier decision, probability of significance F can be compared with 0.05 and fortunately, since the p value equals to 0.028, the significance of the model could be surely accepted. After confirming that, now, the variables of the model can be examined. In order to talk about the significance of the variables, the test statistics of coefficients should be checked. Again the p values facilitate the comparison and except the dummy variable coefficient any of the factors is meaningful statistically. The dummy variable in the model stands for representing the two different samples used in the study. The p value of the statistic, belonging coefficient of dummy variable, shows significance since it is less than 0.05. Therefore, there is enough evidence to say these two samples are statistically different from each other. By depending that information, it is possible to make comparisons across samples.

In the second step of the regression, after realizing the first model fully, the main independent variables which are trait anger and trait anxiety are included to the model. This step is more important for the present study since the main purpose is to see the effect of anger and anxiety on financial risk tolerance and make counterpart

comparisons between samples. In the second step  $R^2$  (15.3%) has a greater value. It demonstrates that the added variables are helpful to understand the change in the response. Moreover, by looking at probability of F statistic (0,009), it can be stated that second model with new variables are statistically significant. Therefore, the coefficients of the variables could be investigated for certain. In the Table 7, it can be seen that not trait anxiety but trait anger has a p value of less than 0.05 so in the second sample the only meaningful variable is trait anger.  $\beta$  (0.118) value indicates that trait anger and financial risk tolerance has a positive relationship. Therefore, the response moves in the same direction with the predictor. That is to say that as the trait anger level goes up the financial risk tolerance also increases.

*Table 10. Hierarchical Linear Regression Output of the Main Model*

Variable	$R^2$	Adj $R^2$	$\Delta R^2$	Sign. F	$\beta$	t	p
<b>Step1</b>	0.100	0.065		0.028			
Gender					.155	1.590	.115
Following News					.147	1.051	.296
Interest					.118	.890	.376
Sample Dummy					-.106	-1.015	.006
<b>Step 2</b>	0.153	0.102	0.053	0.009			
Trait Anxiety					-.405	-2.462	.235
Trait Anger					.118	1.194	.016

### 4.2.1.1 Regression Diagnostics Check

#### Normality of Errors and Homoscedasticity

In order to check this assumption, firstly the residuals that belong to the model were generated while the model is run. After that, in order to take a glance of the dispersion of the errors, normality plot and scatter plot of the errors were obtained. As it could be seen from Figure 1, error terms seem normally distributed because observations are stated on the normality line or the place that are so close to the line. To confirm this hypothesis by statistics, Kolmogorov Smirnov and Shapiro Wilk test statistics are given in Table 11. To check the significance of these statistics, p values are shown. For two test, as the p values are greater than 0.05, it can be said surely that errors are normally distributed.

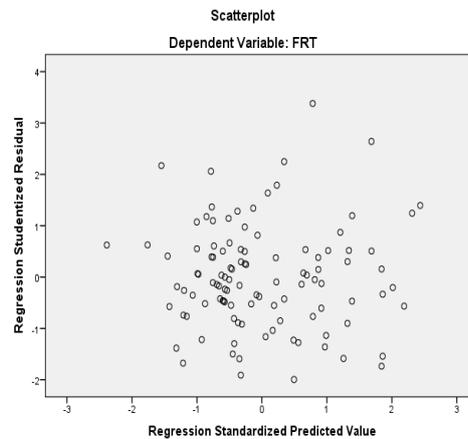
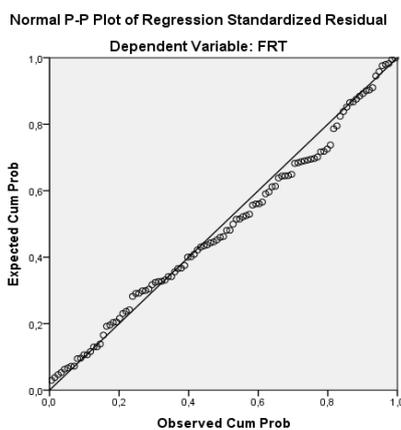


Figure 1. Normality P-P Plot of Residuals

Figure 2. Scatter Plot of Residuals

After confirming normality, now homoscedasticity that is equality of the variance assumption could be check. Again, looking at the scatter plot of the residuals was the primary thing that is needed to be done. The dispersion of the errors is wide and no doubt that there could be a pattern. However, for sure, the Harvey and White

statistics were conducted. The significance of the test statistics are given in Table 11. Since p values are higher than 0.05, equality of variances assumption also confirmed.

*Table 11. Significance of Kolmogorov Smirnov and Shapiro Wilk & Harvey and White Test Statistics*

	<b>Kolmogorov Smirnov</b>	<b>Shapiro-Wilk</b>	<b>Harvey</b>	<b>White</b>
<b>Residuals</b>	0.2	0.08	0.4007	0.245

### **Multicollinearity**

Multicollinearity assumption could be check by looking at variance inflation factor (VIF) values of variables. In Table 12, the VIF values are given clearly. There are not any values which show a problem about collinearity. Therefore, no multicollinearity assumption is also supported.

*Table 12. VIF Statistics of the Independent Variables*

<b>Variables</b>	<b>age</b>	<b>gender</b>	<b>follow news</b>	<b>interest in topic</b>	<b>anxiety level</b>	<b>anger level</b>
<b>VIF</b>	1,120	2.245	2.042	1.233	1.134	1.149

#### **4.2.2 Hierarchical Linear Regression Analysis Results of Students Sample**

In this section, the sample includes student participants is analyzed. Because the difference between the samples is confirmed in the previous section by the significance of coefficient associated with dummy variable, the student sample and bank employee sample are handled separately.

In Table 13, all required statistics can be seen clearly. As a starting step, again control variables are run in the first level of hierarchical linear regression. This time  $R^2$  (22%) gives a greater value than the one observed in the whole sample example. The reason for this situation is that this sample size is highly lower than the previous one. To test the significance of the model, we look for F statistics or relevantly probability of significant F statistics. It can be seen that the model is not meaningful ( $p=0.550$ ).

In the second step of hierarchical linear regression, again the trait anger and trait anxiety variables are added to the model.  $R^2$  increases and model become sufficient to explain 34% of variety in the financial risk tolerance with these control and independent variables. Significance of F statistics shows that the second model is again meaningful. For that reason, the coefficients of the added variables could be looked over assuredly. Although, in the main model with whole observations says trait anger has positively significant effect on response, the current analysis figures out that for students not trait anger but trait anxiety is a significant factor in terms of affecting the dependent variable.  $\beta$  (-1.427) term demonstrates that trait anger has a negative relationship with financial risk tolerance. Hence, the direction of trait anxiety and the financial risk tolerance is opposite. The response replies the increase in trait anxiety level in a decreasing way.

Table 13. Hierarchical Linear Regression Output of the Model with Student Sample

Variable	R <sup>2</sup>	Adj R <sup>2</sup>	Δ R <sup>2</sup>	Sign. F	β	t	p
<b>Step1</b>	0.22	0.201		0.550			
Gender					.201	1.006	.323
Following News					.242	.842	.407
Interest					-.215	.755	.456
<b>Step 2</b>	0.34	0.323	0.11	0.048			
Trait Anxiety					-.292	-1.537	.048
Trait Anger					.115	.603	.136

#### 4.2.2.1 Regression Diagnostics Check

All assumptions were checked and no inconsistency was met. The related graphs and statistics take place in the appendix.

#### 4.2.3 Hierarchical Linear Regression Analysis of the Model with Bank Employee Sample

The second sample that was analyzed in this part includes bank employee participants. At first, as in the previous part, the hierarchical linear regression was run for this sample, too.

In Table 14, statistics are given explicitly. The R<sup>2</sup> value is highly low for this model. Any of the steps shows significance because of the high level of p values (for the first step significance F equals to 0.308 whereas for the second step related statistics is 0.256).

When we look at the significance of variables in the regression, it seems that only ‘interest in financial/economic topics’ is meaningful in the model. Negative coefficient says that the way financial risk tolerance and interest level move is opposite.

*Table 14. Hierarchical Linear Regression Output of the Model with Bank Employee Sample*

Variable	R <sup>2</sup>	Adj R <sup>2</sup>	Δ R <sup>2</sup>	Sign. F	β	t	p
<b>Step1</b>	0.097	0.023		0.308			
Age					.079	.371	.831
Gender					-0.039	-.326	.745
Education Level					-.044	-.373	.711
Work Experience					-.072	-.336	.738
Following News					.145	.879	.382
Interest					-.369	-2.304	.024
<b>Step 2</b>	0.137	0.032	0.04	0.256			
Trait Anxiety					-.235	-.427	.087
Trait Anger					.123	.910	.366

#### **4.2.3.1 Regression Diagnostics Check**

All assumptions were checked and no inconsistency was met. The related graphs and statistics for the regression take place in the appendix.

#### **4.3 Supportive Analyses**

As stated in previous sections, main goal of the study is to figure out the impact of trait anger and trait anxiety on financial risk tolerance. By means of hierarchical linear regression, two keystone results were observed. First of all, in the main model containing two samples' observations, anger level showed significance and predicted the response. The other finding was significance of trait anxiety which explain the financial risk tolerance. However, in order to concrete these results, one more analysis was conducted. The point to do that was to support the results procured in regression analyses.

First, in regardless of existing of other independent variables which were control variable of this study, in order to reveal association between train anger, train anxiety and financial risk tolerance, Mann Whitney U test was recruited. It is a nonparametric test and the main assumptions of this test are independence and randomness of individuals in different samples, in addition, the independence and randomness of individuals in the same sample. All assumptions are confirmed surely.

Firstly, financial risk tolerance scores were categorized according to level of trait anger and trait anxiety. Since median is a more robust statistic, at first try, anger and anxiety were classified as 'low' or 'high' depending on place they stated, that is below or above the median value. After that, corresponding financial risk tolerances scores were run by Mann Whitney U test and unfortunately the result did not give a significant outcome. In order to overcome this situation and to obtain meaningful findings, this time the anger and anxiety level were separated three different classes. Width of the classes were arrange according to quartiles. For the 'low' level of traits, the observations falling between minimum value and first quartile value were taken and for the 'high' level of traits the observations falling between third quartile value

and the maximum value were considered. When the categorization was like that this time the test result became significant for the main model (the one that covers all participants). That is, there exists a significant difference between ‘high’ and ‘low’ level of the corresponding financial risk tolerances. That is, there is a meaningful difference between the financial risk tolerances of individuals with low level of anger and high level of anger. Even though it is valid for total sample, when the same test was applied to students and bank employees’ samples separately, none of them was significant. The reason for that must be from lack of enough observations in the samples.

In previous part, the models for students sample and whole sample were found as meaningful. However, for bank employee sample, anything was significant. Therefore, even though it is not possible to figure out statistically remarkable analyses, in order to recognize the participants and their behaviors closer, some comparisons were made by using bar graphs.

Primarily, risk perceptions of participants were observed. As it can be seen from Graph3 and Graph4, great number of individuals with low level of financial risk tolerance regardless of their emotional tendencies defines risk as uncertainty. However, the ones with higher risk tolerance do not state a general definition for risk but again it can be seen that there are no effect of trait anger and anxiety because they almost same distribution with similar frequencies. The only point that can be mentioned is that more risk tolerant employees with more anger and anxiety describe risk as opportunity.

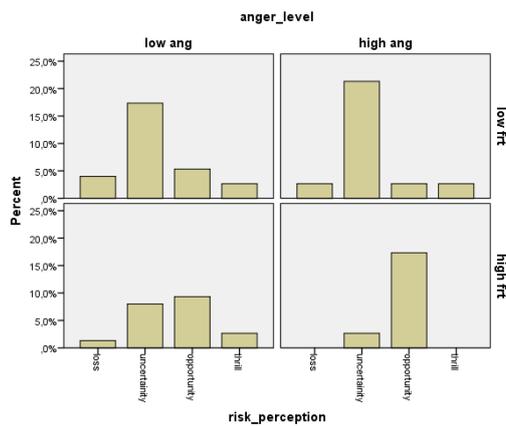


Figure 3. Risk perception of Bank Employees according to Financial Risk Tolerance and Trait Anger Levels

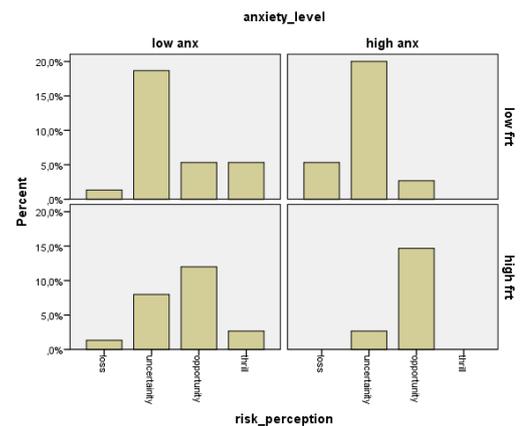


Figure 4. Risk perception of Bank Employees according to Financial Risk Tolerance and Trait Anxiety Levels

Secondly, in order to have opinions about whether individuals from financial sector behave by affecting their levels of traits, the answers they gave to the questions related with prospect theory are given with comparisons of emotional traits and risk tolerance below. Figure 5 and Figure 6 show responses of attendees in the case of potential gain. As it can be seen explicitly, again regardless of level of anger and anxiety traits, people with low financial risk tolerance are the ones that prefer to choose sure gain in gain case. In contrast, the reverse manner could be observed for the low risk tolerant individuals. Not surprisingly, this time they do not pick sure gain and go for gambling by taking risk.

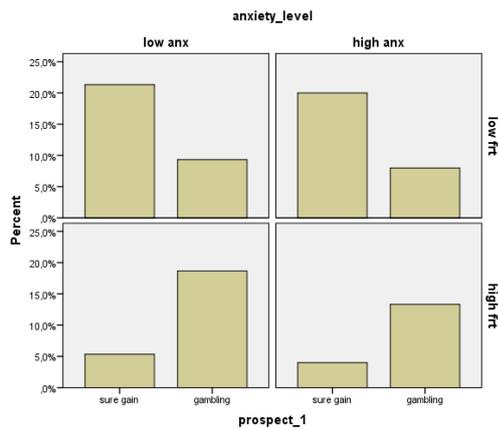


Figure 5. Potential Gain Case of Bank Employees according to Financial Risk Tolerance and Trait Anxiety Levels

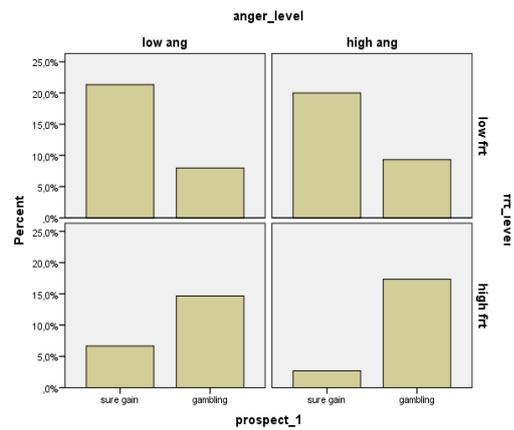
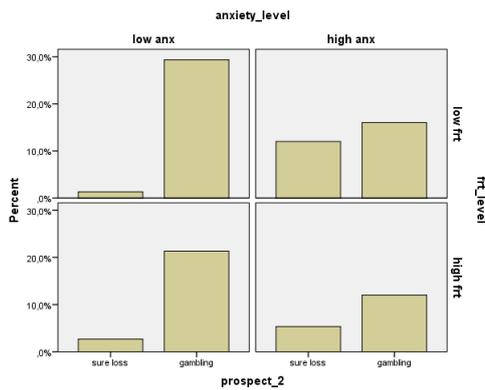
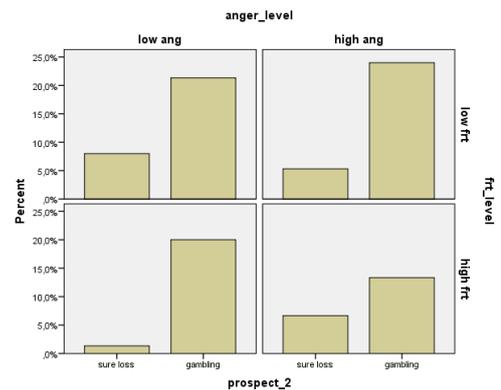


Figure 6. Potential Gain Case of Bank Employees according to Financial Risk Tolerance and Trait Anger Levels

Responses in the case of potential loss are given Figure 7 and Figure 8. In this case, there is no strict and observable pattern but it can be said that no matter what risk tolerance level is, less anxious and angry people select gambling compared to accept sure loss option. However, for high level of trait anger and anxiety, there exist no trends. Nevertheless, only one point is needed to be mentioned which is the most of bank employees with high anger level and low risk tolerance choose gambling instead of sure loss.



*Figure 7. Potential Loss Case of Bank Employees according to Financial Risk Tolerance and Trait Anxiety Levels*



*Figure 8. Potential Loss Case of Bank Employees according to Financial Risk Tolerance and Trait Anger Levels*

Finally, in this part, effect of the traits on investment risk will be examined. In one of the questions exists in financial risk tolerance assessment part of the questionnaire, it is asked to the participant what would they do in the case of expected increase of assets such gold, collectibles and hard assets while their investment assets stand in a safer place which is government bond. Unsurprisingly, emotional traits have any effect on their responses and for each case of financial risk tolerance level almost same pattern is observed as it can be seen from Figure 9 and Figure 10. In general, they opt for a little bit risk and they state they would sell some of their bonds to take assets. A vast majority of the sample choose that option if they are low risk tolerant; nevertheless that amount of majority decreases if they are high risk tolerant.

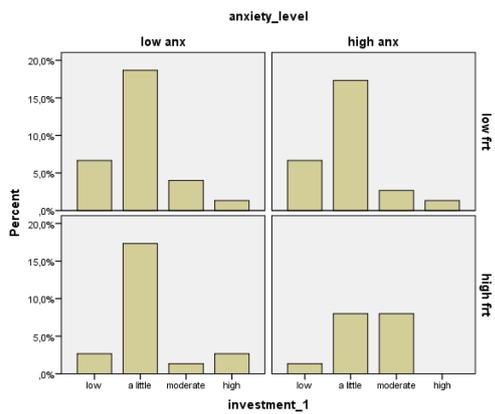


Figure 9. Investment Risk Preferences of Bank Employees according to Financial Risk Tolerance and Trait Anxiety Levels

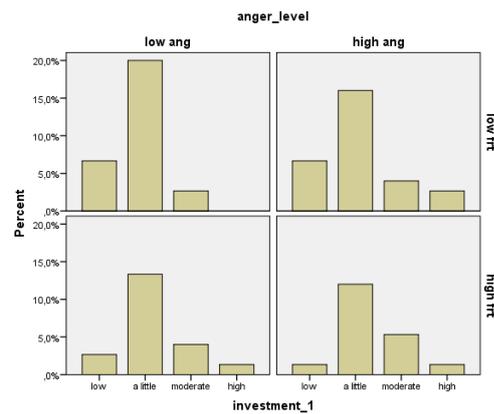


Figure 10. Investment Risk Preferences of Bank Employees according to Financial Risk Tolerance and Trait Anger Levels

The second question for assessing investment risk is related with choosing the investment tool for money that is left as inheritance. In the previous question, people show their preferences for the money they earn by themselves whereas in this situation, they demonstrate their choices for use money for jam. In such circumstance, they behave in more risk avoidant way when they are low risk tolerant. Surprisingly, if participants have high risk tolerance level, they do not stick in a certain option and almost all options are chosen by participants with the same frequency. The supporting graphs are given below.

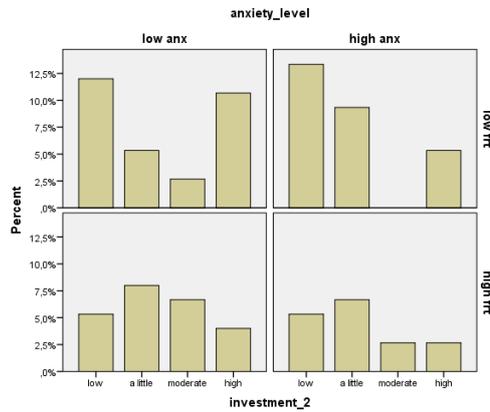


Figure 11. Investment Risk Preferences of Bank Employees according to Financial Risk Tolerance and Trait Anxiety Levels

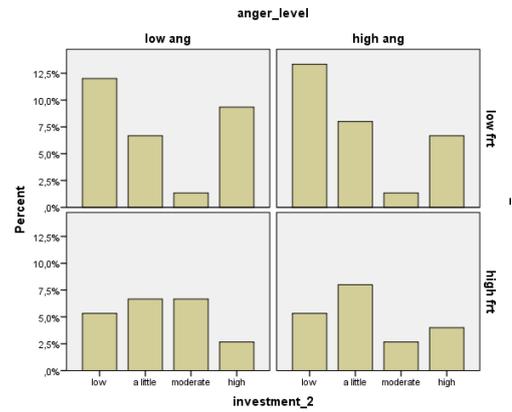


Figure 12. Investment Risk Preferences of Bank Employees according to Financial Risk Tolerance and Trait Anger Levels

This part of the thesis actually helped to confirm what was expected about financial behaviors of bank employees when they were considered as experts. As stated former research, experts are good at excelling problems and dealing with them by using wiser approaches techniques based on their expertise compared to students who have no expertise in financial matters.

## **CHAPTER 5**

### **DISCUSSION**

#### **5.1 Overview of the Study Findings**

At the beginning of the study, it was clearly stated that anger and anxiety had significant effects on decision making process. In previous research, the impacts of these two variables under risky decision choices were examined by many scholars. The findings have shown that anger has a negative relationship whereas anxiety has a positive relationship with risk-averse attitude. That is, a person with low anger level tends to choose riskier options and as the level of anger increases the probability to prefer risky choice also increases. However, this behavior is completely reversed when anxiety is the case. In other words, as the anxiety level of an individual gets higher, the inclination to gain risk-averse behavior also escalates.

Now, to combine these relationships between the variables, some inferences could be made by looking at the Table 16. The table shows the main statistics that are obtained throughout the study.

In the previous section, the significances and the effects of the variables were also mentioned. In this part, the broader explanations will be given depending on the results gained by successive analyses.

Table 16. The Summary of the Study Variables According to Samples

Sample Type	Sign. of 1st & 2nd		Variable	$\beta$	t	p
	steps					
Whole Sample	0.028		Trait Anxiety	-0.405	-2.462	0.235
	0.009		Trait Anger	0.118	1.194	0.016
Students	0.550		Trait Anxiety	-0.292	-1.537	0.048
	0.048		Trait Anger	0.115	0.603	0.136
Bank Employees	0.308		Trait Anxiety	-0.235	-0.427	0.087
	0.256		Trait Anger	0.123	0.910	0.366

The first constructed model was obtained by whole participants who consist of students and bank employees. The model was found significant in each step of the analyses. Furthermore, the only meaningful variable was trait anger and its effect on financial risk tolerance was positively related. Therefore in this step of the analyses, we succeeded to confirm our expectation. By this result, with statistical validity of the model, it can certainly be stated that people with high (low) level of trait anger have high (low) risk tolerance so that they do not avoid taking risks and make risky investments.

The second model was constructed on the basis of observations taken by students from third or fourth grade of business administration department. Again, hierarchical linear regression was valid in the first and second steps. This time not anger but anxiety was found as a significant predictor of the response. By means of the negativity of coefficient of trait anxiety, it can be said that the relationship between

these variables is reversely directed. For this reason, anxious individuals are not very tolerant to risks, therefore risky and uncertain preferences are not convenient to their individual choices. On the other hand, since they do not suffer from ambiguity too much, which results in having more risk tolerance; less anxious people are bolder in terms of taking risk in their choices.

The final model was formed by bank employees. Unfortunately this model did not give any meaningful results. Although the model is not significant there exist a variable which is meaningful. This variable is 'interest in topics'. However, the problematic point in this result is negative coefficient. That is, the study shows that when level of interest in financial topics increases, the financial risk tolerance responds this change by a fall. Yet it should not be forgotten that, since the model is not significant, significance of variable does not demonstrate a proper result.

## **5.2 Discussion of the Results**

This thesis investigated the effects of trait anger and trait anxiety on financial risk tolerance. The investigation was implemented to students to project risk preferences of people for financial matters and to strengthen linkage between risk aversive behavior and financial risk tolerance by also adding personal difference factors. Moreover, by performing the study on bank employees, it was aimed to detect whether there was a difference in the attitude of people with high level of expertise and financial literacy towards risk because bankers were considered as experts.

The role of dispositional anger and anxiety were confirmed as they were expected. Trait anger was positively related with financial risk tolerance; in contrast, the analyses conducted with students showed trait anxiety was negatively associated with financial risk tolerance. Actually, the expectations were accepted but we are not able to see validity of all these prospective statements in one model. The main regression analysis just demonstrates that trait anger predicts the risk tolerance but it says nothing about trait anxiety. The reason behind this result may be due to targeting two non-similar samples and relatively lack of more observations.

The difference between samples especially reveals itself in financial risk tolerance level. The students have greater scores when compared to bank employees. The questionnaire that measures risk tolerance actually consists of hypothetical questions. As a result of this, students may have answered them without thinking in detail. As they are novice at financial stuff, they may have not responded questions by thinking wisely.

The most questionable part of the findings is related with bank employees. Neither the model nor any coefficients came out as significant. That is, no relation was constructed between financial risk tolerance and trait anger and trait anxiety. The demographics and personal difference variables do not have the power to tell the differences in financial risk tolerance level. At the start of the thesis, bank employees were not expected to be affected by their trait anger and trait anxiety levels and it was assumed that they made their choice according to expected utility theory which could result in high risk tolerance rather than behave in a risk avoidant manner. However, these expectations were not confirmed due to insignificant model.

The reason for facing such a conclusion could be that participants have same or similar demographic background or reactions to the questions. However, when descriptive and related statistics are taken into consideration, the distribution of all variables looking reliable and the observations seems like they do not resemble each other at all. Therefore, perhaps such factors are not enough to tell bank employees' risk tolerances or there is a need for mediator variable. For example, the perception of the environment may have relation with trait anger and also risky decisions mediate. In this regard, the link between risk tolerance and trait anger may become significant by means of familiarity and salience perception. In one of the earlier studies in this context, the existence of relationship between perception of certainty and incidental anger was claimed. In that study, it was supported that increase in incidental anger results in increase in perception of certainty so that having control over circumstances and by this way it increases the perception of familiarity (Smith and Ellsworth, 1985) Moreover, Hockey at al. (2000) also figured out that

uncertainty decreased by familiarity. Therefore, in a well-known situation, preferences towards risky choice should increase.

Furthermore, perception of salience could be another mediator for dispositional anger and risk tolerance. Salience could be expressed as importance for a person to get a favorable result. Hemenover and Zhang (2004) claims that incidental anger activates a defensive optimism where the importance and impact of negative events are de-emphasized. Therefore, trait anger can be linked to the perception of low importance in several situations and in turn, it could give rise to risky decisions. Besides, to reveal the role of trait anxiety, some other factors could be added to the model and their mediator effects could also be examined. For example, in prior research, it was found that pessimistic risk appraisals have relationship with trait anxiety. Maner and Schmidt (2006) showed that heightened perception of likelihood and severity of negative outcomes taken as mediator factors were associated with dispositional anxiety and risk avoiding behaviors.

Since there is nothing to say on bank employees' behaviors in financial risk tolerance, in order to see their tendencies in terms of risk preferences in monetary issues, their reactions towards questions related with prospect theory and investment risk were interpreted separately. Actually, in the beginning, my prospect from bankers was that they would make their choices according to get maximum utility they would get in turn; therefore, vast majority would come out as high risk tolerant individuals. However, observations did not cover this idea. Their answers on loss and gain cases with certainty and gambling ways depict that employees also strike an attitude consistent with prospect theory. Moreover, surprisingly, they are not inclined to take investment risk. Regardless of their personal differences, even the individuals with high level of financial risk tolerance choose less risky options when it came to investment.

### **5.3 Contributions of the Study**

There are two main contributions of present study. Firstly, although there are many research that explain the effects of personality traits under risky decision making, however, for the first time, trait anger and anxiety have been examined in financial risk tolerance context. Not surprisingly, the obtained results were consistent with expectations.

The second contribution is to target especially bank employees assuming that they have high level of financial literacy depending on their business lives and compare them with students. That is, it could be possible to see whether living in monetary tasks and catching every development in the industry in detail influence risk preferences. In general, in previous studies, most of the scholars conducted their research on students or workers from different types of work environments such as stores, banks, universities, shops etc. Gambetti and Giusberti (2012, 2014) who have been working on the relationship between personal traits especially anger and anxiety and financial risk taking issues recently perform their research regardless of possible impacts of financial knowledge and try to figure out a general understanding.

### **5.4 Limitations and Suggestions for Future Research**

One of main limitations of the present study is lack of number of observations. In bank employee sample, unfortunately, there was nothing found significant which was stated in previous sections. The participants were collected from one bank and from different positions for survey. In order to get more meaningful data, it would have been reasonable to gather more observations. Moreover, the range should have been narrowed. For example, focusing on a specific field such as investment department of the bank could have given more reliable results because if it was so, the factors and collected data would have been controllable in terms of consistency with thesis context. On the other hand, the same deficiency which is shortage of enough observations prevails for student sample, too. Even though the constructed model seems valid, the significance of coefficients of predictors may have changed and it

would have been possible to obtain safer and sound results if more students could participate in the research.

The other limitation was assessment criteria. At the end of this thesis, the potential behaviors of the investors towards investment preferences and attitudes toward financial issues in consideration of differences in personal traits were figured out. However, such projections should not depend on only some hypothetical and general questions. That is, real life experiences should be included to get more reliable conclusions. To do this, some questions could be added to learn real life preferences of people in monetary issues including risks. With the combination of hypothetical and real life questions, it could be possible to get more reliable results at the end. Moreover, since bank employees were considered as experts in the present study, it would be better to show their expertise with real life experiences they had.

While conducting survey methodology, questionnaires were distributed via online survey tool. However, this situation unfortunately reduced the return rate of the participants. For example, the bank employees who completed the survey completely only constituted 66% of all. The reason could be the self-selection bias (Stanton, 1998; Thompson et al., 2003; Wittmer et al., 1999). In online environment there are some who are willing to fill the surveys as well as the ones who prefer to ignore. Moreover, lack of incentives for bank employees may be another reason of lower response rate (Konstan, et al., 2005). Actually, incentive was used for students because the data collection process came up to summer time. Therefore, money incentive was recruited in order to attract students' attention. However, for the bank employee sample, again financial incentive or something like that should have been employed to increase response rate and to behave accordingly with student sample.

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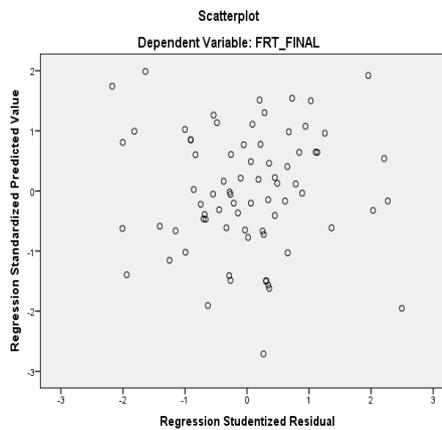
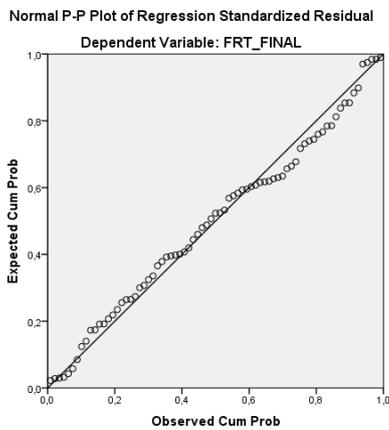
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## APPENDICES

### A. Regression Diagnoses Check

**Bank Employee Sample (for the model with trait anxiety)**

- **Normality of errors and Homoscedasticity and Autocorrelation Test Statistics**



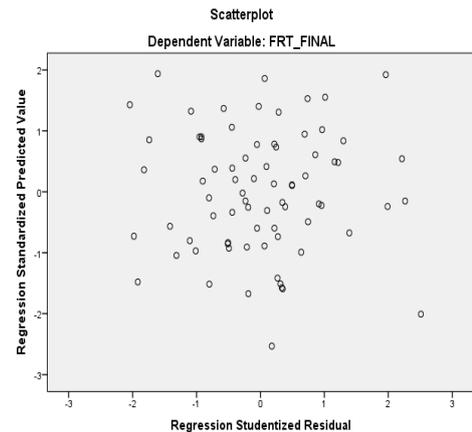
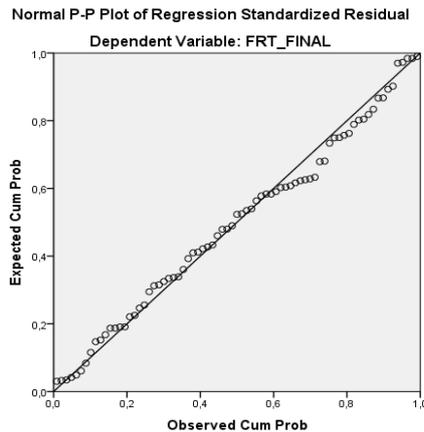
		<b>Kolmogorov-Smirnov</b>	<b>Shapiro-Wilk</b>	<b>Breusch Pagan</b>	<b>Breusch Godfrey</b>
Financial Tolerance	Risk	0.054	0.508	0.215	0.147
Standardized Residual		0.200	0.238	0.326	0.158

- **Multicollinearity Check with VIF Values**

Variables	age	gender	education level	work experience	follow news	interest in topic	anxiety level
VIF	3.464	1,054	1,068	3,491	2,046	1,948	1,065

### Bank Employee Sample

- **Normality of errors and Homoscedasticity and Autocorrelation Test Statistics**



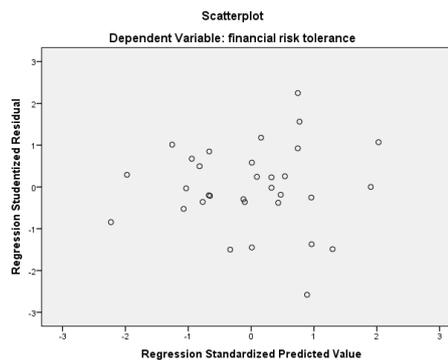
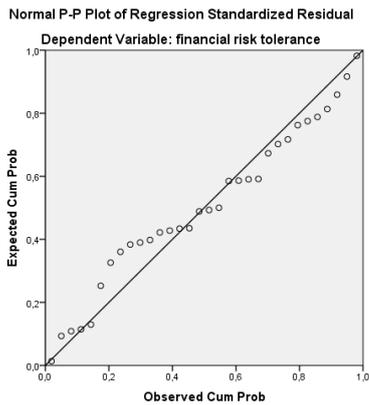
	Kolmogorov-Smirnov	Shapiro-Wilk	Breusch Pagan	Breusch Godfrey
Standardized Residual	p=,200*	0.300	0.09	0.45

- **Multicollinearity Check with VIF Values**

Variables	age	gender	education level	work experience	follow news	interest in topic	anxiety level
VIF	3.401	1,063	1,057	3,504	2,075	1,946	1,041

### Students Sample

- **Normality of errors and Homoscedasticity and Autocorrelation Test Statistics**



	Kolmogorov Smirnov	Shapiro-Wilk	Breusch Pagan	Breusch Godfrey
Residuals	0.2	0.711	0.612	0.315

- **Multicollinearity Check with VIF Values**

Variables	gender	follow news	interest in topic	anxiety level	anger level
VIF	1,209	2,487	2,450	8,407	8,029

## B. Questionnaire Form

Dear participants,

I am a student of Master of Business Administration department at Middle East Technical University. In my thesis, I have been examining how anger and anxiety affect financial risk tolerance and accordingly the differences in investment preferences for the people who have different levels of anger and anxiety traits. At the same time, by means of this questionnaire, which will be conducted to bank employees as member of finance sector and to third and fourth grade business administration department students who are inclined to financial topics, I will be able to analyze whether these two emotions affect professional business life as expected.

The questionnaire consists of four main parts and 49 questions. All parts are taken from literature; therefore, the original form is kept not to disrupt the integrity which is the reason why survey language is English. Moreover, it will only take your fifteen minutes to complete all questions in the questionnaire.

On the basis of voluntary participation, you are free to finish the survey anytime you want.

If you would like to reach results of the research, you can get in contact with me from the contact information I state below.

Thank you for your precious participation.

Best regards,

Research Assistant

Ecem Gizem Hüner

ehuner@metu.edu.tr

Business Administration Department Room G160

Middle East Technical University

### **DEMOGRAPHIC INFORMATION**

1. Please state your age.
2. Please state your gender.
3. Please state the highest educational degree you have attained.
4. Please state your work experience
5. What is your level of interest in economic/financial topics?
6. How closely do you follow economic/financial news?

### **FINANCIAL RISK TOLERANCE ASSESSMENT**

1. In general, how would your best friend describe you as a risk taker?
  - a. A real gambler
  - b. Willing to take risks after completing adequate research
  - c. Cautions
  - d. A real risk avoider
2. You are on a TV game show and you can choose one of the following. Which would you take?

- a. \$1,000 in cash.
  - b. A 50% chance at winning \$5,000
  - c. A 25% chance at winning \$10,000
  - d. A 5% chance at winning \$100,000
3. You have just finished saving for a “once-in-a-lifetime” vacation. Three weeks before you plan to leave, you lose your job. You would:
- a. Cancel the vacation
  - b. Take a much more modest vacation
  - c. Go as scheduled , reasoning that you need the time to prepare for a job search
  - d. Extend your vacation, because this might be your last chance to go first-class
4. If you unexpectedly received \$20,000 to invest, what would you do?
- a. Deposit in a bank account, Money market account or an insured CD
  - b. Invest in a safe high quality bonds or bond mutual funds
  - c. Invest in stocks or stock mutual funds
5. In terms of experience, how comfortable are you investing in stocks or stock mutual funds?
- a. Not at all comfortable.
  - b. Somewhat comfortable
  - c. Very comfortable
6. When you think of the word “risk” which of the following words comes to mind first?
- a. Loss
  - b. Uncertainty
  - c. Opportunity
  - d. Thrill
7. Some experts are predicting prices of assets such as gold, jewels, collectibles and real estate (hard assets) to increase in value; bond prices may fall, however, experts tend to agree that government bonds are relatively safe. Most of your

investment assets are now in high interest government bonds. What would you do?

- a. Hold the bonds
  - b. Sell the bonds, put half the proceeds into money market accounts, and the other half into hard assets
  - c. Sell the bonds and put the total proceeds into hard assets
  - d. Sell the bonds, put all the money into hard assets and borrow additional Money to buy more.
8. Given the best and worst case returns of the four investment choices below, which would you prefer?
- a. \$200 gain best case; \$0 gain/loss worst case
  - b. \$800 gain best case; \$200 loss worst case
  - c. \$2,600 gain best case; \$800 loss worst case
  - d. \$4,800 gain best case; \$2,400 loss worst case
9. In addition to whatever you own, you have been given \$1,000. You are now asked to choose between:
- a. A sure gain of \$500
  - b. A 50% chance to gain \$1,000 and a 50% chance to gain nothing.
10. In addition to whatever you own, you have been given \$2,000. You are now asked to choose between:
- a. A sure loss of \$500
  - b. A 50% chance to loss \$1,000 and a 50% chance to lose nothing.
11. Suppose a relative left you an inheritance of \$100,000, stipulating in the will that you invest ALL the Money in ONE of the following choices. Which one would you prefer?
- a. A savings account or Money market mutual fund
  - b. A mutual fund that owns stocks and bonds
  - c. A portfolio of 15 common stocks
  - d. Commodities like gold, silver and oil.

- 12.** If you had to invest \$20,000, which of the following investment choices would you find most appealing?
- a.** 60% in low-risk investments 30% in medium-risk investments 10% in high-risk investments
  - b.** 30% in low-risk investments 40% in medium-risk investments 30% in high-risk investments
  - c.** 10% in low-risk investments 40% in medium-risk investments 50% in high-risk investments
- 13.** Your trusted friend and neighbor, an experienced geologist, is putting together a group of investors to fund an exploratory gold mining venture. The venture could pay back 50 to 100 times the investment if successful. If the mine is a bust, the entire is worthless. Your friend estimates the change of success is only 20. If you had the Money, how much would you invest?
- a.** Nothing
  - b.** One month's salary
  - c.** Three month's salary
  - d.** Six month's salary

A number of statements which people have used to describe themselves are given below. Read each statement and then choose the appropriate number to the right of the statement to indicate how you generally feel. There is no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel. [Answer on scale from 1 = "almost never" to 4 = "almost always"].

### **TRAIT ANXIETY ASSESSMENT**

- 1.** I feel pleasant.
- 2.** I tire quickly.
- 3.** I feel like crying.
- 4.** I wish I could be as happy as others seem to be.
- 5.** I am losing out on things because I can't make up my mind soon enough.

6. I feel rested.
7. I am ‘‘calm, cool and collected’’.
8. I feel that difficulties are piling up so that I cannot overcome them.
9. I worry too much over something that really doesn’t matter.
10. I am happy.
11. I am inclined to take things hard.
12. I lack self-confidence.
13. I feel secure.
14. I try to avoid facing a crisis or difficulty.
15. I feel blue.
16. I am content.
17. Some unimportant thought runs through my mind and bothers me.
18. I take disappointments so keenly that I can’t put them out of my mind.
19. I am a steady person.
20. I get in a state of tension or turmoil as I think over my recent concerns and interests.

#### **TRAIT ANGER ASSESSMENT**

1. I am a hotheaded person.
2. I am quick tempered.
3. I am an impulsive person.
4. I get angry when I have to wait because of other’s mistakes.
5. I feel annoyed when I am not given recognition for job well done.
6. I fly off the handle.
7. When I get mad, I say nasty things.
8. I get angry when I’m told I’m wrong in front of others.
9. When I am frustrated, I feel like hitting someone.
10. I feel infuriated when I do a good job and get a poor evaluation.

### C. Turkish Version of Questionnaire

Değerli katılımcılar,

Ben Orta Doğu Teknik Üniversitesi, İşletme bölümü yüksek lisans öğrencisiyim. Tezimde öfke ve endişenin finansal risk toleransını nasıl etkilediğini ve buna bağlı olarak da farklı öfke ve endişe seviyelerine sahip insanların yatırım tercihlerini inceliyorum. Aynı zamanda, finans sektörünün içinde bulunan banka çalışanları ve üniversitemizin işletme bölümünde finans alanına eğilimleri olan üçüncü ve dördüncü sınıf öğrencilerine uygulanacak olan bu anket sayesinde, bahsi geçen iki duygu durumunun profesyonel iş hayatında da beklenildiği şekilde etki yaratıp yaratmadığı da ayrıca analiz edeceğim.

Anket dört ana bölümden ve 49 sorudan oluşmaktadır. Literatürdeki örnek anketler kullanıldığı için anket dili İngilizcedir. Ancak anlaşılır olması amacıyla soruların orijinalinin ardından Türkçe karşılıkları verilmiştir. Bütün soruların yanıtlanması durumunda anket yaklaşık olarak on beş dakikanızı alacaktır.

Gönüllülük esasına dayalı olarak yürütülen bu çalışmada, istediğiniz zaman anketinizi sonlandırmada kendinizi özgür hissedebilirsiniz.

Çalışmanın sonunda bilgi almak isterseniz aşağıdaki iletişim bilgilerimden dilediğinizde bana ulaşabilirsiniz.

Değerli katılımınız için şimdiden çok teşekkür ederim.

Saygılarımla,

Araştırma Görevlisi

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ODTÜ İşletme Bölümü Oda No: G160

## DEMOGRAFİK VE İÇERİKLE İLGİLİ SORULAR

1. Lütfen yaşınızı belirtiniz.
2. Lütfen cinsiyetinizi belirtiniz.
3. Lütfen en son mezun olduğunuz eğitim derecesini belirtiniz.
4. Lütfen iş tecrübenizi yıl bazında belirtiniz.
5. Lütfen Finans/Ekonomi haberlerini ne kadar yakından takip ettiğinizi belirtiniz.
6. Lütfen Finansal/İktisadi konulara olan ilgi seviyenizi belirtiniz.

## FİNANSAL RİSK TOLERANSI ÖLÇEĞİ

1. Arkadaşınız sizi nasıl tanımlar?
  - a. İyi bir oyuncu-kumarbaz
  - b. Yeterli araştırmayı yaptıktan sonra risk almayı isteyen
  - c. Temkinli
  - d. Riskten kaçınan
2. Bir TV yarışmasında olsanız hangisini seçerdiniz?
  - a. Nakit 1,000\$
  - b. %50 ihtimalle 5,000\$
  - c. %25 ihtimalle 10,000\$
  - d. \$100,000 %5 ihtimalle 100,000 \$
3. Hayatta bir kere yapacağınız bir tatil için yatırımlarınızı tamamladınız. Ayrılmayı planladığınız vakitten üç hafta önce işinizi kaybettiniz. Ne yapardınız?:
  - a. Tatili iptal ederdiniz.
  - b. Çok daha mütevazı bir tatil yapardınız.
  - c. Yeni bir iş arama sürecine hazırlanmak için vakte ihtiyacınız olduğunu düşünerek tatilinize planladığınız şekilde devam ederdiniz.
  - d. Birinci sınıf yapacağınız son tatil olma ihtimaline karşın tatilinizi uzatırdınız.
4. Hiç beklenmedik bir anda yatırım yapmak için 20,000\$ aldınız, ne yapardınız?

- a. Banka hesabına, para piyasası hesabına veya sigortalı mevduat sertifikasına yatırırđınız.
  - b. Güvenli tahvillere ya da tahvil yatırım fonlarına yatırırđınız.
  - c. Hisse senetleri veya hisse senedi fonuna yatırırđınız.
5. Tecrübeleriniz açısından hisse senedi ya da hisse senedi fonuna yatırım konusunda ne kadar rahatsınızdır?
- a. Pek rahat deęilimdir.
  - b. Biraz rahatımdır.
  - c. Oldukça rahatımdır.
6. 'Risk' kelimesini duyduğunuzda aklınıza aşağıdakilerden hangisi gelir?
- a. Kayıp
  - b. Belirsizlik
  - c. Fırsat
  - d. Heyecan/korku
7. Bazı uzmanlar altın, mücevherat, koleksiyon ve gayrimenkul varlıkların (duran varlıklar) fiyatlarında artış olacağını tahmin ediyor, tahvil fiyatları da düşebilir ancak uzmanlar devlet tahvilinin nispeten güvenli olduğuna hem fikirler. Elinizdeki yatırım varlıklarının çoęu yüksek faizli devlet tahvilleri ise, bu durumda ne yapardınız?
- a. Tahvilleri elimde tutardınız.
  - b. Tahviller satar, yarısını para piyasası hesabına kalanını duran varlıklara yatırırđınız
  - c. Tahvilleri satar, hepsini duran varlıklara çevirirdiniz
  - d. Tahvilleri satar, hepsini duran varlıklara çevirir ve daha fazlasını alabilmek için borç para alırdınız

- 8.** En iyi ve en kötü durumlar için aşağıdakilerden hangisini tercih ederdiniz?
- a.** İyi durum senaryosu için 200\$ kazanç, en kötü durum senaryosu için 0\$ kayıp ya da kazanç.
  - b.** İyi durum senaryosu için 800\$ kazanç, en kötü durum için 200\$ kayıp.
  - c.** İyi durum senaryosu için 2,600\$ kazanç, en kötü durum için 800\$ kayıp ya da kazanç.
  - d.** İyi durum senaryosu için 200\$ kazanç, en kötü durum için 2400\$ kayıp.
- 9.** Sahip olduklarınıza ek olarak 1,000 \$ verildi. Hangisini tercih ederdiniz?
- a.** 500\$ kesin kazanç
  - b.** %50 ihtimalle 1,000\$ kazanç, %50 ihtimalle hiçbir şey kazanamama.
- 10.** Sahip olduklarınıza ek olarak size 2,000\$ verildi. Hangisini tercih ederdiniz?
- a.** 500\$ kesin zarar
  - b.** %50 ihtimalle 1,000\$ zarar görme ve %50 ihtimalle hiç zarar görmeme.
- 11.** Diyelim ki bir akrabanız bütün hepsini aşağıdaki seçeneklerden birine yatırım yapmanız şartıyla 100,000\$'lık miras bıraktı. Hangisini tercih ederdiniz?
- a.** Tasarruf hesabı veya para piyasası yatırım fonu
  - b.** Hisse senedi veya tahvillere sahip yatırım fonları
  - c.** 15 adi hisse senedinden oluşan portföy
  - d.** Altın, gümüş ve petrol gibi emtialar
- 12.** 20,000\$'lık bir yatırımda bulunmak zorunda kalsanız, hangi yatırım seçeneği en çekici olurdu?
- a.** %60'ını düşük riskli yatırımlarda, %30 unu orta riskli yatırımlarda, %10 unu yüksek riskli yatırımlarda kullanmak
  - b.** %30'unu düşük riskli yatırımlarda, %40'ını orta riskli yatırımlarda, %30 unu yüksek riskli yatırımlarda kullanmak

- c. %10unu düşük riskli yatırımlarda, %40ını orta riskli yatırımlarda, %50 sini yüksek riskli yatırımlarda kullanmak

**13.** Güvenilir bir arkadaşınız ve tecrübeli jeolog olan komşunuz araştırmacı altın madenciliği girişimine sermaye oluşturması adına bir grup yatırımcıyı bir araya getiriyor. Eğer girişim başarılı olursa, yatırımın 50 ila 100 katı kadar getiri getirebilir. Eğer girişim patlarsa, yatırım hiçbir işe yaramaz. Arkadaşınız, yatırımın başarılı olma ihtimalini %20 olarak tahmin ediyor. Eğer paranız olsaydı ne kadarını bu yatırım için ayırırdınız?

- a. Hiç  
b. Bir aylık maaş  
c. Üç aylık maaş  
d. Altı aylık maaş

#### **D. Turkish Summary**

### **TEZİN TÜRKÇE ÖZETİ**

#### **GİRİŞ ve LİTERATÜR TARAMASI**

Hayat içinde aldığımız kararlarımızın çoğu kazanma ya da kaybetme olasılıklarına dayanır. Eğer içinde bulunduğumuz durumda kaybetme olasılığımız varsa, karar verirken daha az riski barındıran opsiyonu seçmeye daha yatkındır. Bunun tam tersine, eğer seçim yapmamız gereken opsiyonlar kazanma olasılığı barındırıyorsa, bu durumda da daha çok kazanmak adına riskli de olsa yüksek miktarda kazanç veren seçeneği seçeriz. Bu yaklaşım Kahneman and Tversky tarafından ortaya atılmıştır. Kendi çalışmalarında, katılımcılara bir dizi sorular sorulmuştur. Bu sorular maddi kayıp ve kazanç olasılıklarına göre sınıflandırılmıştır. Çalışmanın sonunda insanların parasal kayıp içeren durumlarda riske almaya karşı daha duyarlı olduğu ortaya çıkarken, aksine kazanma durumlarındaysa risk almaya daha yatkın oldukları

gözlenmiştir. Bu durum Kahneman ve Tversky'nin 'Beklenti Teorisi' ile açıklık kazanmıştır (1979).

Duyguların karar verme bilimi içinde incelenmesi çok öncelere dayanmaktadır. İlk olarak Descartes duyguların günlük kararlarımıza olan etkileri üzerine kafa yormuştur (Damasio, 1994). Bu atılan ilk adımdan sonra, duygular pek çok farklı disiplinde incelenmeye başlanmıştır. Henüz duyguların etkileri üzerinde net bir çerçeve belirlenememişken, araştırmacılar insanların karar alırken 'beklenen fayda' teorisine göre hareket ettiklerini iddia etmekteydiler. Daha da açıklayıcı olmak gerekirse, özellikle maddiyata dayalı seçim yapacakları zaman, getirisi en yüksek ya da kaybı en az olan opsiyonu seçtiklerini öne sürmüşlerdir. Ancak, bir süre sonra, yapılan bazı araştırmalarda insanların bunun aksi yönde davrandıkları ortaya çıkmıştır. Bu yüzden de araştırmacılar bu durumun altında yatan sebebi bulmak amacıyla pek çok çalışma yürütmüşlerdir.

Önceki çalışmalarda duygular iki farklı açıdan ele alınmıştır. Hem anlık duygu durumu hem de karakteristik duygu durumu olarak ele alınan duygu çeşitlerinin, çoğu içerikte aynı şekilde etki yarattığı görülmüştür. İlk başlarda incelemeler 'değer esaslı' yaklaşıma göre incelenmiş ve buna göre pozitif ya da negatif olarak iki sınıfa ayrılmıştır. Kullanılan bu yaklaşıma göre aynı kategori altında bulunan duygu çeşitlerinin alınan kararlar üzerinde de aynı şekilde olduğu varsayımında bulunulmuştur. Ancak, sonraki çalışmalarda bu yaklaşımın aslında duyguların etkisini doğru bir şekilde açıklamadığı tespit edilmiştir. Bu uygunsuzluğu düzeltmek amacıyla Lerner and Kentler değerlendirme teorisini ortaya çıkarmıştır. Bu teori, aynı grupta yer alan duyguların kararlar üzerinde farklı etkiler yaratabileceği gibi farklı gruptaki duygularınsa kararlar üzerinde aynı etkiyi yaratabileceğini desteklemiştir (Lerner & Keltner, 2001).

Bu çalışmada öfke ve endişe ele alınacak ve finansal risk toleransı üzerindeki etkisi incelenecektir. Aslında öfkenin ve sinirin karar verme sürecindeki etkisi uzun

zamandır incelenmektedir. Ancak, bu tezde, ilk defa, riskli tercih içeriğinin dışında olarak finansal risk toleransı içeriğinde ele alınacaktır.

Önceki çalışmalarda endişenin ve öfkenin risk alma eğilimi üzerinde karşıt etkileri olduğu görülmüştür. Endişe seviyesi yüksek olan insanlar riskli seçim yapmaya karşın çok daha duyarlı davranırken, endişe seviyesi düştükçe bu duyarlılığın azaldığı gözlenmiştir. Bunun tam aksine öfkeli insanların risk almaktan çekinmediği ve öfke seviyesi azaldıkça da riskli seçenekleri tercih etmekten uzaklaştıkları görülmüştür. Risk yatkınlığı açısından bu şekilde etkiler yaratan bu iki duygunun, bu çalışmada karakteristik özellik olarak ele alındığında, finansal risk toleransı üzerinde nasıl değişiklikler yarattığı incelenecektir. Risk toleransı yatırımcıların yatırım kararları alırken katlanabildiği risk derecesi olarak açıklanabilir. Yani, risk toleransı yüksek olan yatırımcılar daha riskli yatırımlara karşı iyimser bir tutumda bulurken, düşük risk toleransı olanlar riskli yatırım yapmaktan kaçınırlar. Bu içeriği, önceki çalışmalara paralel bir hale getirip, yatırımcıların risk eğilimleri içeriğiyle eşleştirecek olursak; öfkeli insanların daha risk sever ve buna bağlı olarak da finansal risk toleransı yüksek bireyler olmasını beklerken, endişe seviyesi yüksek insanlarınsa riskten uzak kalmayı tercih eden yatırımcılar olup, finansal risk toleranslarının da daha düşük olması beklenmektedir.

Bu çalışmadan elde edilecek iki ana sonuç vardır. Öğrenciler ve banka çalışanları üzerinden yürütülecek bu araştırma ile insanların karakteristik öfke ve endişe seviyelerine göre yatırım konusundaki risk toleransları ve eğilimleri hakkında ileriye yönelik fikirler edinilebilecek ve özellikle yatırım sektöründe işe yarayacak bulgular edinilecektir. Örneğin, eğer bir banka çalışanı, müşterisinin öfke ya da sinir derecesini göz önünde bulundurarak yatırım ürünlerinin satışını yapmaya çalışırsa muhakkak ki daha başarılı olacaktır. Çünkü böylelikle müşterisinin beklentilerine ve risk algısına en uygun portföyü sunup hem müşterisini hem de kendini mutlu etmiş olacaktır.

Literatür taraması toplam dört bölümden oluşmaktadır. Bunlardan ilk ikisi durum ve nitelik olarak öfke ve endişenin finansal karar verme sürecindeki etkisi olup, üçüncü kısım finansal risk toleransının finansal kararlar üzerindeki etkisidir. Son olarak ise, bilirkişilerin ve acemilerin finansal davranışlarını içeren çalışmalar incelenmiştir.

## **YÖNTEM**

Bu çalışmada anket metodu kullanılmıştır. Toplam 4 bölüm ve 49 sorudan oluşan bir anket hazırlanmış ve bütün katılımcılara aynı anket sunulmuştur.

Çalışmada hedef alınan iki ayrı örneklem bulunmaktadır. Bunlardan biri öğrencilerden oluşurken diğer örneklemse banka çalışanlarından meydana gelmiştir. Hedef alınan öğrencilerin iki temel özelliği bulunmaktadır. Birinci olarak ankete katılan öğrenciler Orta Doğu Teknik Üniversitesi İşletme bölümü üçüncü ya da dördüncü sınıf lisans öğrencileri arasından seçilmiştir. İkinci olarak ise bu öğrencilerin en az bir tane finans içerikli seçmeli ders almış olmalarına dikkat edilmiştir. Bu iki örneklemin, tecrübesiz grubu olarak adlandırılan öğrenci örneklemindeki katılımcıların finans alanında özel bir eğitime ya da tecrübeye sahip olmayıp sadece bu konuları anlamaya yönelik altyapılarının bulunmasına önem verilmiştir.

Yürütülen çalışmada kullanılan diğer örneklem ise banka çalışanlarından oluşmuştur. Bu grup, çalışmanın uzman grubu olup, Yapı Kredi bankasının teftiş kurulu ve aynı bankanın üçüncü büyük şubesi çalışanlarından meydana gelmiştir.

Çalışma sırasında kullanılacak verileri toplamak amacıyla toplamda 164 kişiye ulaşılmış ancak bunların yalnızca 107sinden tamamlanmış anketler elde edilmiştir.

Anketin ilk kısmı demografik bilgileri toplamaya yönelik sorular içermektedir. İkinci bölümde ise Finansal Risk Toleransını ölçen 13 soru yer almaktadır. Bu 13 soruluk anket, literatürdeki eski çalışmalardan alınmıştır. Grable ve Lytton tarafından meydana gelmiş bu değerlendirme anketi, altı çeşit soru tipi içerip genel anlamda da

katılımcıların risk algı ve yatkınlıklarını ölçebilecek varsayıma dayalı sorulardan oluşmaktadır.

Anketin üçüncü ve dördüncü bölümünde ise bireylerin karakteristik öfke ve endişe seviyelerini ölçmede kullanılan envanterler bulunmaktadır. Yine bu envanterler, literatürdeki eski çalışmalarda kullanılan örneklerden alınmıştır. Aynı ayrı inceleyecek olursak, endişe seviyesini ölçme envanteri 20 ifadeden oluşmakta ve her ifadenin yanıtı ise 4 dereceden oluşmaktadır. Yani, 1 hiç katılmıyorum yanıtını sembolize ederken, 4 ise tamamen katılıyorum ifadesini yansıtmaktadır. Aynı şekilde kurgulanmış olan öfke seviyesini ölçme envanteri ise 10 ifadeden oluşmaktadır.

## **VERİ TOPLAMA SÜRECİ**

Anketlerin dağıtılması ve toplanması internet üzerinden gerçekleştirilmiştir. Bu yolun tercih edilmesinin sebeplerinin arasında, internetin esneklik yaratıyor olması, ulaşımı hızlandırıyor olması ve uygunluk kontrolünü daha iyi veriyor olmasıdır. Aracı olarak ise “Survey Monkey” anket programı kullanılmıştır. Öncelik olarak öğrencilere ulaşabilmek amacıyla finans seçmeli dersleri veren değerli hocalardan, dersi alan öğrencilere mail atarak ankete katılmaları ricasında bulunulmuştur. Veri toplama dönemi derslerin kesildiği tarihi denk geldiğinden ötürü maalesef ki öğrencilere ulaşabilmek oldukça zorlu bir yol haline gelmiştir. Bu sebeple öğrencilerin dikkatini çekebilmek amacıyla ankete katılan öğrencilere ödül verileceği duyurulmuştur. Bu bilgilendirme ise, öğrencilerin aktif bir şekilde kullandığı ünlü sosyal medya kanalı aracılığıyla yapılmıştır. Önceleri çekilişle 3 kişiye 50 tl verileceği belirtilmiş ancak yine istenilen sayıya ulaşamayınca ödül miktarı 3 kişiye 100tl olarak değiştirilmiştir. Bu uğraşların sonunda ancak 32 öğrenciye ulaşmak mümkün olup, veri toplama süreci sona erince de bu 32 öğrenci arasındaki 3 kişi rassal olarak seçilip, ödülleri internet bankacılığı aracılığıyla kendilerine iletilmiştir.

Banka çalışanlarına ise e-posta yoluyla ulaşılmıştır. Yapı Kredi bankası Ostim şubesi müdür yardımcısı vasıtasıyla e-postanın yayılması sağlanmıştır. Aynı şube çalışanlar

ve aynı zamanda teftiş kurulu çalışanlarına iletilen mail sayesinde 120 katılımcıya ulaşılmak ancak sadece 75 tanesi anketi sonuna kadar tamamlamıştır.

## **ANALİZ VE SONUÇLAR**

Demografik değişkenlerin ve karakteristik öfke ve endişe seviyelerinin finansal risk toleransı üzerindeki etkilerini görmek amacıyla hiyerarşik lineer regresyon analizi yapılmıştır. Toplamda 3 adet regresyon elde edilmiştir.

İlk analiz öğrenci ve banka çalışanlarının hepsini içeren örneklem üzerine yapılmıştır. Burada hiyerarşik lineer regresyonunun ilk adımı olarak “cinsiyet”, “finansal haberleri takip etme”, “finansal konulara ilgi duyma” ve çalışmada yer alan iki örneklemin istatistiksel olarak farklılık yaratıp yaratmadığını ölçmek amacıyla “örneklem farkı” değişkenleri eklenmiştir. Bu adım, anlamlı çıkmış ve değişkenler arasındansa sadece örneklem farkı değişkeni kayda değer sonuç vermiştir. Bu yüzden de, analizin geri kalanında, öğrencilerden ve banka çalışanlarından oluşan iki grup da ayrı ayrı incelenmiştir.

Ana örneklemin ikinci basamağında ise “öfke seviyesi” ve “endişe seviyesi” değişkenleri regresyona eklenmiş, aralarından sadece öfke anlamlı olarak ortaya çıkmıştır.

İkinci analiz öğrencilerden elde edilen veriler üzerinden yapılmıştır. Burada yine ilk adımda, ana örnekleimde kullanılan değişkenlerin aynısı kullanılmıştır. Ancak bu adımda ne yazık ki anlamlı bir regresyon elde edilemezken, ikinci adımda öfke ve endişe seviyesi değişkenlerinin analize girmesiyle regresyon anlamlı hale gelmiştir. Elde edilen son regresyona bakıldığında, sadece endişenin istatistiksel olarak anlamlı olduğu görülmektedir.

En son yapılmış analizde ise banka çalışanlarından elde edilen veriler kullanılmıştır. Bu defa, daha ayrıntılı bir analiz yapmak için, regresyonun ilk adımıdaki değişkenlerin sayısı ve çeşidi arttırılmıştır. İlk adımda önceki analizdekilere ek olarak bu defa, “yaş”, “tecrübe” ve “mezuniyet derecesi” değişkenleri eklemiştir.

Ancak, ne yazık ki, iki adımda da anlamlı regresyon elde edilememiştir. Değişkenlerin arasındansa sadece “finansal konular ilgi duyma” anlamlı bulunmuştur.

Çalışmanın en başında, öfke ve endişenin karar verme süreci üzerinde etkili olduğu belirtilmişti. Önceki çalışmalarda, bu iki duygunun özellikle riskli seçimlerde nasıl etki yarattığı araştırılmış, sonucunda da öfke ve endişenin verilen kararlar üzerinden zıt yönde ilişki kurduğu gözlenmiştir. Yani, daha da açıkça belirtmek gerekirse, öfke seviyesi yüksek insanlar daha riskli seçenekleri tercih etmeye yatkınken, bunun aksine, endişe seviyeleri yüksek insanlarınsa riske karşı fazlasıyla duyarlı olduklarından dolayı risk seviyesi en düşük seçenekleri tercih etmeye yatkın oldukları ortaya çıkmıştır.

Bu çalışmada da önceki çalışmalara paralel bulgular elde edilmiştir. Bir önceki bölümde de belirtildiği gibi öfke ve endişe, yapılan analizler sonucu anlamlı bulunmuş ve finansal risk toleransı üzerinde etkisi olduğu vurgulanmıştır.

Öğrenci ve banka çalışanlarını içeren ana örneklemden elde edilen bulgular, öfkenin finansal risk toleransı üzerindeki etkisini göstermiştir. Bu bulgu bizim beklentilerimizi karşılamıştır. Öfke değişkeninin katsayısına bakarak da bu iki değişken arasındaki ilişkinin pozitif yönlü olduğunu söyleyebilir. Yani, düşük seviyede öfkeli olan insanların finansal risk toleransları daha düşükken; öfke seviyeleri yüksek olan insanların finansal risk toleransları da daha yüksektir. Bu da; öfkenin, insanların daha riskli yatırımları çekinmeden tercih etmelerine sebep olduğunu gösteriyor. Öfkeli insanlar riskli seçeneklere karşı çok fazla duyarlı davranmayıp, kararlarının sonunda en yüksek kazancı elde edecek yönde hareket ettiklerini gösteriyor.

Sadece öğrencileri içeren örneklem ise endişenin anlamlılığını göstermiştir. Hiyerarşik lineer regresyon yöntemi ile elde edilen ve iki basamağında da anlamlı olan regresyon, endişenin, finansal risk toleransı üzerindeki etkisini belirtmiştir. Bu değişkenin katsayısının negatif olması ise, aradaki ilişkinin karşıt yönlü olduğunun bir göstergesidir. Yani, düşük endişe seviyesine sahip öğrencilerin finansal risk

toleransı daha yüksekken, yüksek endişe seviyesine sahip öğrencilerinse risk toleransı daha düşüktür. Bu da demek oluyor ki; riskli seçenekler endişeli öğrenciler için tercih edilmezken, daha az endişeli öğrenciler riskli opsiyonları değerlendirmeye daha yatkınlar.

Son olarak, banka çalışanlarından oluşan örneklemden elde edilen verilerle yapılan analizler sonucu maalesef ki hiçbir bulgu elde edilememiştir. Analiz sonucu elde edilen regresyonun iki adımı da anlamsız çıkmıştır. Ancak, değişkenlerin içinden sadece ‘finansal konulara ilgi duyma’ değişkeni anlamlı çıkmıştır ve finansal risk toleransı ile arasındaki ilişki ise negatif yönlü olarak görülmüştür. Yani, finansal konulara ilgi duyan insanların risk toleransı daha düşükken, finansal konulara ilgi duymayanların risk toleransının daha yüksek olduğu görülmüştür. Ancak, ana modelin anlamsız olması nedeniyle, bu değişkenin anlamlı olması ne yazık ki elde edilen bu bulgunun istatistiksel olarak değere değer bir bulgu olmadığı söylenebilir.

Banka çalışanlarından edilen bilgiler, bu çalışmaya istatistiksel açıdan katkı sağlamadığı için bazı ek analizler yapılmıştır. Bu ek analizleri yaparken, finansal risk toleransı envanterindeki bazı sorulara bankacılar tarafından verilen yanıtlar incelenmiştir. Önceden de belirtildiği gibi, risk toleransı envanteri 13 sorudan oluşmakta ve bu sorular 8 çeşit soru çeşidini bünyesinde barındırmaktadır. Bu ek analizleri yaparken bu bazı soru çeşitlerinin, banka çalışanlarınca nasıl cevap bulduğu ve finansal risk toleransı üzerinde nasıl etkiler yaptığı incelenmiştir.

Öncelikle, çalışmanın başında, banka çalışanlarının aslında karakteristik anlamda dahi olsa öfkeden ve sinirden etkilenmeyecekleri ve seçimlerini yaparken de, geri dönüşümünde en çok getirisi olan seçenekleri tercih edecekleri varsayılmıştır. Bu varsayımlara, bankacıların finans alanında uzmanken, öğrencilerin ise tecrübesiz olarak nitelendirilmesi altında ulaşılmıştır. Çünkü önceki çalışmalarda, uzmanların daha rasyonel karar aldıkları, karar alma parametrelerinin daha karışık ama daha anlamlı olduğu, problemlere ve çözüme yönelik adımlarının tecrübesiz insanlara göre çok daha yetkin olduğu ispatlanmıştır. Bunlardan yola çıkarak yapılan varsayımlar

da, bankacıların duygu özelliklerinden bağımsız, akla uygun davranacakları belirtilmiştir.

İlk olarak incelemelere, bankacıların risk algısı üzerinden gidilmiştir. Duygusal özellikleri dikkate alınmaksızın, çoğu katılımcının riski belirsizlik olarak tanımladığı görülmüştür. Özellikle risk toleransı yüksek olan katılımcılara bakıldığında, bu kişilerin risk için genel bir tanım yapmadığı saptanmıştır. Aynı zamanda bu noktada yine öfke ve sinir niteliklerinin etkisi olmadığı göze çarpmıştır. Burada, dikkati çeken tek nokta ise finansal risk toleransı yüksek ve aynı zamanda yüksek öfke ve yüksek endişe seviyesine sahip katılımcıların riski daha fırsat olarak tanımlamış olmalarıdır.

Bir sonraki analizde ise, bankacıların “beklenti teorisi”ni barındıran sorulara nasıl yanıt verdikleri incelenmiştir. Bu inceleme potansiyel kazanç ve potansiyel kayıp durumları göz önünde bulundurularak yapılmıştır. Beklenti teorisi, insanların kayıplara karşı daha hassas olduklarını, bu nedenle de kayıp durumunda riskli seçenekleri seçmeye daha meyilli olduğunu açıklarken; öte yandan, kazanç durumunda ise kayıptaki kadar hassas olmadıklarını, bu yüzden de riskli seçenektense, kesin kazanç veren opsiyonu tercih etmeye yatkın olduklarını anlatır. Ancak, çalışmanın başında, banka çalışanlarının, uzman oldukları için, bu tür içsel olgulara çok fazla önem vermeyip, her iki durumda da en rasyonel ve kazancın en çok olduğu seçenekleri seçecekleri öne sürülmüştür. Bu konuyla alakalı olarak yer alan 2 soruyla yapılan incelemeler, maalesef ki beklentileri karşılamamıştır. Öfke ve endişe seviyelerinden bağımsız olarak, bu katılımcıların da yine kazanç durumunda kesin kazancı tercih ettikleri görülmüştür. Ancak, kayıp durumlarında ise, katılımcıların yanıtlarının net bir modeli oluşturulamamıştır.

Son olarak ise banka çalışanlarının yatırım riski içeren sorulara karşı verdiği yanıtlar incelenmiştir. Bu soru tipinde, katılımcıların yanıtlarında, yine onların öfke ve endişe seviyelerinin etkisi gözlenememiştir. Genel olarak güvenilir liman olan devlet

bonolarını tercih ettiklerini, bunu dışında ise çok az risk içeren portföyler oluşturdukları görülmüştür.

## **TARTIŞMA**

Öfke ve endişe, davranışsal karar verme alanında uzun zamandır incelenmektedir. Özellikle, bu iki duygunun riskli seçenekler içeren kararları alırken, süreci nasıl etkilediği yoğunlukla araştırılmaktadır. Önceki çalışmalarda, öfkenin ve endişenin hem karakteristik yapı olarak hem de anlık duygu durumu olarak incelendiğinde, risk alma yatkınlığı üzerinde birbirine zıt etkiler yarattığı ortaya çıkmıştır. Buna bağlı olarak, bu çalışmada, öncekilerden farklı olarak bu iki duygu kişisel farklılık olarak ele alınıp finansal risk toleransına olan etkisi araştırılmıştır. Hiyerarşik lineer regresyon kullanılarak elde edilen bulgular, beklenen sonuçları vermiş ve öfke risk toleransı ile pozitif yönlü bir ilişki gösterirken, endişe ise ters yönlü bir ilişki sergilemiştir. Bu anlamlı etkileşim öğrenci ve banka çalışanlarından oluşan ana örneklem ve sadece öğrencilerden oluşan grupta gözlenirken, banka çalışanlarının katılımıyla oluşturulmuş örneklemde maalesef ki istatistiksel açıdan geçerli sonuçlar elde edilememiştir.

Bu çalışma öfke ve endişenin finansal risk toleransı üzerindeki etkisini incelemiştir. Bu çalışmada kullanılan örneklemde banka çalışanlarından ve öğrencilerden oluşmasının ana sebebi, müşterilerin ve çalışanların daha iyi ilişkiler kurmasını sağlamaktır. Müşterilerinin karakteristik öfke ve endişe seviyelerini bilen bir bankacı, müşterilerini tanıdığı için, onların reddedemeyeceği önerilerde bulunup, müşterilerinin kendilerini daha iyi hissedeceği yatırımlarda bulunmasına yardımcı olurken, kendisi de müşterilerini mutlu edebildiği için iyi hissedip, işinde yükselme ihtimalini iyileştirebilir.

Analizler sonucunda elde edilenler, önceki çalışmaları ve çalışmanın öncesinde oluşturulmuş beklentileri tamamıyla olmasa da karşılamıştır. Karakteristik öfke tüm katılımcıların verileri kullanıldığında, yapılan analiz sonucunda anlamlı çıkmıştır. Ancak karakteristik endişe değişkeni maalesef ki bu analizde anlamlı

bulunamamıştır. Ama bu değişken, öğrencilerden oluşan örnekleme anlamlı olmuştur. Bu iki analizde, sadece birer değişkenin anlamlı olup da diğerlerinin olmayışı bir soru işareti yaratmaktadır. Genel olarak bakıldığında, ana örnekleme gözlem sayısı bir hayli yeterliken yine de istatistiksel açıdan fazlaca güvenilir sonuçlar elde edilmeyişi, katılımcıların sayısından çok belki bu katılımcıların birbirine çok yakın özelliklere sahip olmasından kaynaklanıyor olabilir. Yani, çoğu katılımcı anketteki sorulara aynı ya da benzer cevaplar verdiyse, bu durum bütün değişkenlerin neden anlamlı olarak görülmediğine bir sebep olabilir.

Çalışmada asıl göze çarpan ve problem yaratan kısım ise banka çalışanlarından oluşan örnekleme elde edilen analizlerdir. Bu inceleme sonucunda elde edilen bulgulardan hiçbiri istatistiksel açıdan anlamlı değildir. Örneklem 75 katılımcıdan meydana gelmiş olmasına rağmen, veriler güzel bir regresyon elde edilmesi için yeterli olmamıştır. Bunun ardında yatan pek çok sebep olabilir. Öncelik olarak, bankacıların, yani uzmanların, finansal risk toleransını bu iki karakteristik dışında farklı değişkenle etkiliyor olabilir. Bundan farklı olarak, bu var olan değişkenleri dolaylı olarak etkileyen farklı değişkenler olabilir. Buna örnek olarak, önceki çalışmalarda da kullanılmış pek çok faktör vardır.

Banka çalışanlarının finansal risk toleransı üzerindeki tutumları ve onu etkileyen faktörlerin regresyon analizinde anlamlı bir sonuç vermemesi sebebiyle, bu katılımcıların, anket içerisinde yer alan bazı sorulara verdiği yanıtları ayrıca incelenmiştir. Öncelikle risk algısı incelenmiş ve çoğu katılımcının riski belirsizlik olarak tanımladığı görülmüştür. Özellikle risk toleransı yüksek olan katılımcılara bakıldığında, bu kişilerin risk için genel bir tanım yapmadığı saptanmıştır.

Bir sonraki ayrı incelemede ise, bankacıların “Beklenti Teorisi”ne ne derecede tutarlı davrandıkları incelenmiştir. Öfke ve endişe seviyelerinden bağımsız olarak, bu katılımcıların da yine kazanç durumunda kesin kazancı tercih ettikleri görülmüştür. Ancak, kayıp durumlarında ise, katılımcıların yanıtlarının net bir modeli oluşturulamamıştır.

Son incelemede ise banka çalışanlarının yatırım risk eğilimleri incelenmiştir. Katılımcıların yanıtlarında, yine onların öfke ve endişe seviyelerinin etkisi gözlenememiştir. Genel olarak güvenilir liman olan devlet bonolarını tercih ettiklerini, bunu dışında ise çok az risk içeren portföyler oluşturdukları görülmüştür.

## **KATKI**

Bu çalışmanın temelde iki katkısı olmuştur. Önceki çalışmalarda kişisel özelliklerin riskli kararları nasıl etkilediği incelenmişken, ilk defa bu tez ile kişisel farklılıklar finansal risk toleransı başlığı altında incelenmiştir.

İkinci katkı ise banka çalışanlarının hedef kitle olarak seçilmesidir. Bu katılımcıların seçilmesinin en temel amacı, onların yüksek oranda finans okuryazarlığının ve altyapılarının bulunmasıdır. Banka çalışanlarının bu incelemeye katılmasıyla beraber, maddi işlere uğraşıp bu alanda uzman olmuş kişilerin, öfke ve endişe seviyelerine göre etkilenip etkilenmedikleri ve etkilendikleri durumlarda ise nasıl etkilendikleri incelemeye alınmıştır. Bundan önceki çalışmalarda ya öğrenciler ya da farklı iş alanlarından katılımcılar kullanılmıştır.

## **KISITLAMA ve ÖNERİLER**

Çalışmanın üç adet kısıtlaması bulunmaktadır. Bunlardan ilki gözlem sayısının az olmasıdır. Önceki kısımlarda, banka çalışanlarından elde edilen analizler sonucunda hiçbir şeyin anlamlı çıkmadığından bahsedilmişti. Veri, tek bir bankadan ve birkaç farklı pozisyonda çalışan katılımcılar üzerinden elde edilmiştir. Daha anlamlı ve kayda değer bulgular elde etmek amacıyla daha fazla gözlem yapılmış olması sonuçları iyileştirebilirdi. Bunun yanında, öğrencilerden oluşan örneklemedeki gözlem sayısı da bir hayli düşük olduğundan, daha fazla öğrenciye ulaşılabilmiş ki bunun için de yaz tatili döneminden daha önceki zamanlarda anketlerin dağıtımını sağlanabilmiş olsaydı, öğrencilerden toplanan veriden elde edilen regresyon istatistiksel açıdan daha güvenilir sonuçlar verebilirdi.

Bir diđer kısıtlama ise ölçme kriterleri. Bu çalışma sonunda, yatırımcıların yatırım tercihleri ve finansal konulardaki tutumları ve bunların kişisel öfke ve endişe seviyelerine göre nasıl deęiştirdiği ortaya çıkarılmıştır. Ancak, böylesi ileriye dönük çıkarımların sadece varsayımlı sorulara baęlı olarak elde edilmesi maalesef ki çok da sağlıklı deęil. Çünkü tecrübeler ve gerçek hayata baęlı oluşturulan sorulara verilen cevaplar, bu varsayımlı sorulara göre daha güvenilir sonuçlar doğuracaktır. Bu iyileştirmeyi sağlayabilmek için ankete katılımcıların tecrübe geçmişinin varlığı ve bununla ilgili bazı sorular eklenmelidir. Böylelikle, hem varsayımlı, hem de gerçek hayattaki tecrübelerle baęlı soruların bir araya gelmesiyle daha güzel sonuçlar elde etmek mümkün olacaktır. Aynı zamanda, banka çalışanları bu tezde uzman olarak ele alındığından, onların uzmanlıklarını gösterecek sorular sormak, çalışmanın güvenilirliğini de arttırmış olacaktır.

Son olarak, bir diđer kısıtlama ise anketlerin internet üzerinden ulaştırmaya çalışılmış olmasıdır. İnternet, pek çok kolaylığı barındırmasına rağmen bu çalışmada geri dönüş oranının oldukça az olmasına sebep bir etken olmuş olabilir. Çalışmada toplam olarak yüzde 66 oranında geri dönüş sağlanmıştır. Gözlem sayısının düşük olmasının da bir diđer sebebi de budur. Bunun yanında, daha önceden de belirtildiği üzere, öğrencilerin dikkatini çekebilmek ve anketleri doldurmalarını sağlamak amacıyla çekiliş yapılmış ve onlara parasal teşvik verilmiştir. Aynı ya da benzeri uygulama banka çalışanları için de yapılmış olsaydı, geri dönüş sayısında artış olabilirdi. Aynı zamanda iki örneklem içinde paralellik sağlanmış olurdu.

## E. Tez fotokopisi İzin Formu

### ENSTİTÜ

Fen Bilimleri Enstitüsü

Sosyal Bilimler Enstitüsü

Uygulamalı Matematik Enstitüsü

Enformatik Enstitüsü

Deniz Bilimleri Enstitüsü

### YAZARIN

Soyadı : HÜNER

Adı : ECEM GİZEM

Bölümü : Business Administration

TEZİN ADI (İngilizce) : EFFECTS OF ANGER AND ANXIETY TRAITS ON  
FINANCIAL RISK TOLERANCE OF NOVICES AND EXPERTS

TEZİN TÜRÜ : Yüksek Lisans  Doktora

Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir.

Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden  
kaynak gösterilmek şartıyla fotokopi alınabilir.

Tezimden bir (1) yıl süreyle fotokopi alınamaz.

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: