

ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL

**THE EFFECTS OF EXPERTISE, GOAL-BASED LABELLING AND INFINITE
OPTION SETUP ON THE PARADOX OF CHOICE**

M. A. THESIS

Ömrüm METİN

Department of Economics

Economics M. A. Program

JANUARY 2024

ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL

**THE EFFECTS OF EXPERTISE, GOAL-BASED LABELLING AND INFINITE
OPTION SETUP ON THE PARADOX OF CHOICE**

**M. A. THESIS
Ömrüm METİN
(412201002)**

**Department of Economics
Economics M. A. Program**

Thesis Advisor: Asst. Prof. Dr. Aysun HIZIROĞLU AYGÜN

JANUARY 2024

İSTANBUL TEKNİK ÜNİVERSİTESİ ★ LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ

**SEÇİM PARADOKSUNDA UZMANLIK, HEDEF TEMELLİ ETİKETLEME VE
SONSUZ SEÇENEK KURGUSUNUN ETKİLERİ**

YÜKSEK LİSANS TEZİ

Ömrüm METİN

(412201002)

İktisat Anabilim Dalı

İktisat Tezli Yüksek Lisans Programı

Tez Danışmanı: Dr. Öğr. Üyesi Aysun HIZIROĞLU AYGÜN

OCAK 2024

Ömrüm METİN, an M. Sc. student of ITU Graduate School, student ID 412201002, successfully defended the thesis/dissertation entitled — The Effects Of Expertise, Goal-Based Labelling And Infinite Option Setup On The Paradox Of Choice, which he prepared after fulfilling the requirements specified in the associated legislations, before the jury whose signatures are below.

Thesis Advisor: Asst. Prof. Dr. Aysun HIZIROĞLU AYGÜN

Istanbul Technical University

Jury Members: Prof. Dr. Mehmet Yiğit GÜRDAL

Boğaziçi University

Assoc. Prof. Dr. Tolga YURET

Istanbul Technical University

Date of Submission : 5 January 2024

Date of Defense : 25 January 2024





To my grandfather...

FOREWORD

Studying social sciences has been an unexpected path for me for the people who have known me since my high school years. One of the main reasons for this is knowing that I am a science graduate from high school. Indeed, it was also unexpected for me to study any social science at an earlier age. But when recalling years before studying social sciences, like many people I was always interested in individuals' behaviour so I am glad that I have taken a path in social sciences. With every study I read, I feel getting closer to understanding Homo Sapiens Sapiens and the construction built by us, yet there is always something to surprise me. This research and thesis are done to understand us humans better.

Thanks to my spouse, in hard times I was able to find the power to keep the path I have chosen. And I want to thank my family for their support. I also would like to thank the professors of Istanbul Technical University's Economics department and human resources department professionals of banks for their support. Finally, I want to thank my supervisor Asst. Prof. Dr. Aysun HIZIROĞLU AYGÜN for her guidance and patience with my ambitious experiment designs and ideas for the thesis. Thanks to her support, I can gladly present it.

TABLE OF CONTENTS

FOREWORD	viii
TABLE OF CONTENTS	ix
LIST OF TABLES	xiii
LIST OF FIGURES	xv
SUMMARY	xvii
ÖZET	xix
1. INTRODUCTION	1
1.1 Behavioural Economics Definition And Development	2
1.1.1. Bounded rationality and systematic mistakes	5
1.1.2. Expectation approach	7
1.1.3. Decision making and decisions under risk	7
2. LITERATURE REVIEW	9
2.1. Paradox Of Choice	9
2.2. Financial Behaviour and Financial Decision Making	12
2.3. Goal-Based Labelling and Expertise of Decision Maker	16
2.4. Infinite Option Setup- Personalization	19
3. METHODOLOGY	21
3.1 Hypotheses	28
4. RESULTS	31
5. CONCLUSION	41
REFERENCES	43
APPENDICES	49
CURRICULUM VITAE	63



ABBREVIATIONS

GBL: Goal-based labelling

IOS: Infinite option set up

ITU: Istanbul Technical University





LIST OF TABLES

Table 2.1: Designs of questionnaires.....	24
Table 3.1: Summary of participant characteristics	27





LIST OF FIGURES

Figure 2.1: Number of choices vs subjected state.....	20
Figure 4.1: All Participants 4-8 Options Satisfaction Distribution.	32
Figure 4.2: All Participants 4-8 Options Difficulty Distribution.	32
Figure 4.3: 4-8 Options Satisfaction Distribution of Novices.....	33
Figure 4.4: 4-8 Options Satisfaction Distribution of Experts.	33
Figure 4.5: 4-8 Options Difficulty Distribution of Novices.....	34
Figure 4.6: 4-8 Options Difficulty Distribution of Experts.....	34
Figure 4.7: GBL-8 Options Satisfaction Distribution of Novices.....	35
Figure 4.8: GBL-8 Options Satisfaction Distribution of Experts.	36
Figure 4.9: GBL-8 Options Difficulty Distribution of Novices.....	36
Figure 4.10: GBL-8 Options Difficulty Distribution of Experts.....	37
Figure 4.11: IOS-8 Options Satisfaction Distribution of Experts.	38
Figure 4.12: IOS-8 Options Difficulty Distribution of Experts.	38



THE EFFECTS OF EXPERTISE, GOAL-BASED LABELLING AND INFINITE OPTION SETUP ON THE PARADOX OF CHOICE

SUMMARY

Businesses aim to make a profit and customers aim to meet their needs and desires. The market is where these two types of players meet. Thanks to the developments after the Industrial Revolution in technology, production methods, engineering, and many other things, daily life is very different in many aspects compared to 250 years before. One aspect of the difference is that one can have many choices and alternatives in daily life to choose from. From the perspective of the modern world, it is good to have alternatives because they enhance one's freedom to choose with an increasing number of alternatives. That way welfare and well-being of people are believed to be higher when there are too many choices. Today markets are highly developed and supply many alternatives to all types of customers.

The paradox of choice suggests something different. According to the paradox of choice, it is good to have alternatives and choices; but with an important note: to a level. As Schwartz explained in the 2000s, having too many options causes cognitive load for one and encountering too many alternatives has two possible outcomes: first, one may experience paralysis and may not be able to decide, then postpone the decision or just not make a decision; second, one may choose one option but with less satisfaction compared to a smaller set of choices.

This thesis studies the paradox of choice with respect to the earlier studies' findings. An experiment is conducted to understand the paradox of choice in the financial field by analysing the effects of expertise, treatment of goal-based labelling and infinite option setup. Infinite option setup is developed in this thesis and it refers to the choice set where there is one option that targets experts and gives them a chance to create their own option. The experiment is conducted with two groups that are divided by their expertise level in economics and finance to analyse the effects of expertise. In the experiment, participants are asked to choose one investment fund from a given set of 4 options, 8 options, 8 options with GBL treatment and 8 options with IOS treatment.

Results showed the effect of increasing alternatives in the financial field where participants expected to choose one fund between 4 and 8 alternatives on post-decision satisfaction and

difficulty. Comparing all participants' answers to 4 alternative fund choosing question and 8 alternative fund choosing question, post-decision satisfaction decreased and difficulty increased with an increasing number of alternatives. The effect of GBL on novices was significant while the effect of the treatment was not significant on experts. Novices' post-decision satisfaction increased and difficulty decreased with GBL treatment. Adding to that, the effect of IOS treatment was significant on the post-decision satisfaction of experts who chose to personalize with experts who were not treated. IOS treatment did not have any significant effect on the post-decision difficulty for experts as expected.



SEÇİM PARADOKSUNDA UZMANLIK, HEDEF TEMELLİ ETİKETLEME VE SONSUZ SEÇENEK KURGUSUNUN ETKİLERİ

ÖZET

Şirketler kar yapmak ister ve müşteriler de istek ve ihtiyaçlarını karşılamak ister. En basit haliyle düşününce bu iki oyuncu bir markette bir araya gelir ve şirketin sağladığı ürün ve/veya ihtiyacı belli bir bedel ödeyerek alan müşteri istek ve ihtiyacını karşılamış olur. Endüstri Devrimi'ne ve sonrasında gelen gelişme süreci dikkate alındığında; gelişen teknoloji, teknolojiyi geliştiren mühendisler ve profesyoneller sayesinde günlük hayatın birçok açıdan 250 yıl öncesine göre ne kadar farklı olduğu kolayca görülmektedir. Bu değişimlerden biri insanların seçeneklerinin artışında yaşanmıştır. Yakın dönemi, küreselleşen ekonomik sistemi de dikkate aldığımızda son zamanlarda insanların alternatiflerinin artış hızının artmış olduğunu görüyoruz. 80'lerin siyah beyaz tek kanallı yayınlarından bugün internet üzerinden birçok farklı platformdan, neredeyse sınırsız denebilecek bir alternatif ve seçenek tüketicilere sunulmuş durumda. Eğlence sektörü için örneği verilen bu durum benzer veya farklı çeşitli şekilde örneklendirilebilir. Şüphesiz, Endüstri Devrimi'ni takip eden bilgisayar teknolojilerinin gelişmesi, internetin gelişmesi, sosyal medya ve e-ticaretin hızla büyümesi günlük hayatta, tüketecek, satın alacak, üretecek, yapacak çok sayıda alternatif sunuyor.

Batı dünyasının değerlerini dikkate alarak bakınca seçeneklerin artması, insanların karar vermek ve seçmek için daha çok alternatifinin olması insanların özgür bireyler olması anlamında fazlasıyla önemli görünüyor. Refah ve toplumun iyi oluşu için olumlu görülen seçimlerin ve alternatiflerin artışı özgür bireyler için olumlu görülmektedir.

Seçim paradoksu ise fazla seçeneğin özgür bireyi güçlendirmek ve toplumun refahını arttırmak yerine farklı birtakım etkileri olabileceğini öne sürer. Seçim paradoksuna göre bireylerin seçenekleri olması önemlidir; ancak bir yere kadar. Çünkü artan seçeneklerin bireyler üzerinde alternatiflerin değerlendirilmesinden gelen bir bilişsel yük bulunmaktadır. Bu bilişsel yük bireylerin karar alırken daha iyi sonuçlar almasını ve yaptıkları seçimden memnun olmasını engelliyor. Seçim paradoksunun karar alıcılar üzerinde iki temel etkisi olur: birincisi, karar alıcı karar veremez. Karşılaştığı alternatifin fazlalığı onun bilişsel yükünü fazlasıyla arttırmıştır. Bu

durumda karar alıcı paralize olur, kararını erteler veya o kararı almaz. İkinci etki ise karar alıcının karar verdiği durumda yaşadığı hissiyata odaklanır. Karar alıcı, belki karar almak zorunda olduğu için belki başka nedenlerle kararını erteleyemez ve verilmiş fazla seçenekler arasından bir karar verir. Kararı sonrasında yaşadığı etki ise karardan alınan memnuniyetin, daha az seçenekli sorulara göre azalmasıdır. Seçim yapacak kişi, çok seçenekle karşılaşınca paralize olmayıp karar verse bile daha az seçeneğin sunulduğu bir sorudan alacağı memnuniyetten daha azını almaktadır.

Bu tez çalışması, seçim paradoksunu test etmek için yapılmıştır. Deneysel bir çalışma planlanmış ve katılımcılara yatırım fonu seçmelerini isteyen sorular sorulmuş, seçimleri sonrası yaşadıkları memnuniyet hissi ve zorluk sorulmuştur. Finans alanında benzer çalışmaların azlığından ve seçim paradoksu literatürde uzmanlık ekseninde de çalışıldığından dolayı bu alan seçilmiştir.

Yatırım fonu seçiminde, ekonomi/ finans uzmanlığının etkisini, hedef temelli etiketleme ve bu tez için tasarlanmış sonsuz seçenek kurgusunun etkileri seçim paradoksu üzerinde test edilmiştir. Uzmanlığın test edilebilmesi için deney uzmanlar ve uzman olmayanlar olarak iki gruba ayrılmıştır. Uzmanlar en az lisans düzeyinde ekonomi/ finans veya ilişkili bir alandan mezun veya bir finansal kuruluştaki çalışırken; uzman olmayanlar İstanbul Teknik Üniversitesi'nde lisans eğitimi gören ve ekonomi giriş düzeyinde bir ders almış, mühendislik ve bilim öğrencileridir. Uzman olmayan grubun çok büyük oranı çalışmamakta, ekonomik veya finansal bir uzmanlığı bulunmamaktadır.

Etkilerden hedef temelli etiketleme, uzman olmayanlara yardımcı olan bir etkidir. Seçeneklerin altına örn. yatırım sorularında 'düşük risk-kısa vade' gibi seçim yapacak kişinin, yatırım amacına hitap edebilecek etiketler konması anlamına gelir.

Sonsuz seçenek kurgusu ise bu tez içerisinde geliştirilmiş, yalnızca uzmanları hedef alan bir etkidir. Seçenekler arasına, sorunun bağlamında karar alıcının istediği şekilde seçenek yaratmasını yani kişilleştirme yapmasını sağlayan bir etki olarak kurgulanmıştır.

Analizler sonucunda bütün katılımcıların yanıtları dikkate alındığında, yatırım fonu seçiminde seçenek sayısı 4'ten 8'e çıktığı zaman memnuniyet anlamlı düzeyde azalırken; zorluk anlamlı düzeyde artmıştır. 4 seçenekten 8'e geçerken uzmanlığın anlamlı bir etkisi bulunmamakla beraber, tezde test edilen iki etken (GBL ve IOS) beklenen etkileri göstermiştir.

Hedef temelli etiketleme, beklendiđi gibi literature de uygun řekilde uzmanlar üzerinde seçim sonrası memnuniyet ve zorluk konusunda anlamlı bir etkiye sebep olmazken; uzman olmayanlarda seçim sonrası memnuniyetin anlamlı řekilde artmasına neden olurken, zorluđun da anlamlı düzeyde azalmasına neden olmuřtur.

Sonsuz seçenek kurgusu ise, etkinin mantıđı nedeniyle yalnızca uzmanları hedef almıřtır ve kiřiselleřtirme seçeneđini seçen uzmanların yanıtları ile etkiyi yařamamıř uzmanların yanıtları analizde kullanılmıřtır. Sonuç olarak, sonsuz seçenek kurgusunun da beklendiđi gibi kiřiselleřtirmeyi seçen uzmanlar üzerinde seçim sonrası memnuniyet üzerinde anlamlı bir artış yaratmıřtır ve zorluk üzerinde anlamlı bir etkisi olmamıřtır.





1. INTRODUCTION

This thesis is about a phenomenon that two main effects of it can be experienced by anybody in daily life. The phenomenon is named the paradox of choice. The paradox of choice challenges a dogma of Western industrial societies as Schwartz states in his book by asking the question of why more is less (Schwartz, 2004). This dogma arises from the aspect of the Western industrial societies as considering increased freedom is good for welfare since everybody can decide for themselves and no one decides on their behalf. The Western world maximizes freedom by maximizing the choice by increasing options. The paradox of choice challenges this dogma and theorises the effects that decision-makers experience when given too-many options.

Thanks to the Industrial Revolution and the progress until this day, businesses have become to be able to supply many alternative products and services to their markets, and they are mostly not the only ones in their market. With many businesses trying to meet their customers' needs and satisfy their customers producing many different alternatives of products and services customers can find many alternatives according to their needs, desires, budgets, etc. From one perspective, it should be good for the people, businesses and who are in the market. Yet, another perspective is based upon increasing dissatisfaction or paralysis of decision-makers with an increasing number of alternatives to choose from. This is called the paradox of choice or choice overload, too-many choices effect. The main two effects of the paradox of choice are not being able to choose an option and experiencing paralysis or postponing the decision and decreasing satisfaction from the decision where the number of alternatives increases.

For this thesis, an experiment is conducted to test the effects of the paradox of choice in the financial field by making participants choose investment funds from given sets. The thesis is studied with two groups that are divided by their expertise level in economics and finance. Additionally, the experiment includes one treatment from the literature, named goal-based labelling (GBL), and one will designed in this study and will be tested for the first time, named infinite option setup (IOS). GBL means labelling the options with a name which refers to the option's goal, e.g. labelling a digital camera as Budget, Family Trip, or Professional for everybody who does not have high knowledge about digital cameras can pick one based on their goal. GBL treatment has effects on novices and works by bypassing all the technical

details by translating the product attributes into goal attainment (Goedertier et al, 2012). That's why we can code GBL by targeting novices with its effects.

Infinite option setup is another treatment that's tested in this thesis. IOS treatment targets experts and gives experts the ability to choose an option where they can freely create their own option with given instruments. In this thesis topic, participants were asked to choose an option from given investment fund sets and with IOS treatment they were able to pick a personalisation option where they can create their own fund in mind. IOS mainly targets highly experts in the given topic because it is hypothesised that experts would be the group that might not find the optimal option for themselves in any given, limited choice set. That's why experts are expected to enjoy it more when they are given an option which enables them to personalise and infinitely create their own option in the given question.

This thesis can be evaluated as a behavioural and experimental economics study. That's why in following of the introduction, some subtitles are given for behavioural economics, bounded rationality, systematic mistakes and decision-making processes.

Following the introduction to behavioural economics, there is a literature review part where the paradox of choice, financial decision-making, goal-based labelling and infinite option setup are explained for deeper understanding. Followed the methodology part of the thesis where the research method, experiment, hypotheses and statistical methods to analyse the data gathered to test the hypotheses. Then, a section on the results of the analysis is given which is followed by a conclusion part. In conclusion, the shortcomings of this thesis and the experiment are discussed with possible further research.

1.1 Behavioural Economics Definition And Development

Economic theories are mostly based on the concepts of scarcity and rationality. The concept of scarcity in economics explains that every resource is always insufficient in the face of unlimited human needs. That's why economists research methods of enabling things that make people happy, along with the efficient and rapid use of resources. Therefore, many economics books discuss and evaluate how people or society make choices. The concept of scarcity is explained in economics not as a state of absence or poverty, but as a limitation in meeting the needs of people in society. In short, scarcity is the price that one has to pay for one's needs. Economics is a branch of social science that seeks to achieve the highest level of satisfaction to meet unlimited human needs with limited resources (Dinler, 2016).

When traditional economics is examined, it is assumed that the behaviour of decision makers such as producers, consumers and the state that make up the society is consistent and utilitarian. However, this explanation is insufficient. In addition to examining money-market behaviour and government policies, economics also examines and explains human livelihood, population growth, living standards, voting, dating and marriage behaviour. In traditional economics, human decisions are Homo-Economicus but there are aspects of human behaviour that are not fully rational and hard to formulate.

Traditional economics assumes that rational people have the same goal. To make themselves happy and protect their benefits. However, people's understanding and approaches to happiness differ. One person may be happy by investing some of his money in risky investments, while another person may be happy to keep his money out of protective instinct. Another person may spend their money quickly for momentary happiness. Being rational in economics means making various choices of time and money that allocate people's interests in ways that preserve their utility, given their preferences (Hill and Myatt, 2017).

Contrary to the traditional economic theory which assumes individuals are rational, behavioural economics suggests otherwise. It argues that humans are prone to errors and irrationality, challenging the classical economic theory's assumption of rationality. Behavioural economics challenges this rational thinking of people and the rationality assumption of classical economic theory. People can make systematic mistakes and behave in a way which is against their self-interest, with or without being aware. These systematic mistakes can occur in a situation such as addictive behaviour where people cannot fully evaluate their personal interests. In rational choice theory, applying high taxes, bans and health warnings to prevent addictions complies with the assumption of rational choice. However, the reason for the addictions that destroy human life is insufficient knowledge and understanding, which causes the power of negative behaviours to be systematically underestimated. Allowing such a mistake just once ignores the rational choice theory. Therefore, systematic errors, which are an important problem, were first discovered by psychologist Daniel Kahneman (Hill and Myatt, 2017).

Kahneman suggests that the human mind processes its decisions and judgments in two forms of thought and named the processes as Dual Process Model. Two forms of thought in the Dual Process Model are called system 1 and system 2. System 1 has the instinct to learn. At the same time, he acquires knowledge through natural impulse and instinct. It provides a connection through proximity or causality within the scope of time and space by finding common features between the original event/situation and the known event/situation in our environment. It is

automatic and involuntary. It works constantly, examines the environment and responds immediately to the stimuli felt by the body. System 2 is intentional and voluntary. The system we perceive as normal thinking is actually slow thinking. We have the sovereignty of thought. Thinking about what to eat, deciding how to invest, or making mathematical calculations are all included in this system. System 2 is logical and regular, and this system enables us to act rationally in decision and calculation situations. However, in our daily lives, we usually continue our work with system 1. Being fast and automatic often brings us success, but mistakes will inevitably occur. System 1 constantly transfers its impressions to System 2, and System 2 steps in to help System 1 in a dangerous or unusual situation. In cases where System 2 is disabled, it is fed with the suggestions offered by System 1. Therefore, although it is effective in protecting against immediate events in the short term, its role in analysing and developing long-term plans and events is very small. This situation appears as a systematic problem (Kahneman, 2011).

Although System 2 has the ability to suppress and prevent the errors of System 1, it never has the natural ability to realize the mistakes made by System 1 as a result of misdirection. Therefore, this system is prone to errors even in simple calculations, but it is also open to improvement. Since mental processes could not be monitored directly, behaviours were examined by observation and inferences were made about the cognitive process. However, with the developing technology, economic experiments and the application of neurology methods in economics have made it easier to examine economic behaviour. Due to the complexity of human behaviour and behavioural models, economists have aimed to strengthen their claims with empirical studies by resorting to behavioural simulations in behaviour analysis (Colin et al, 2005).

Behavioural economics is a field that tries to expand the framework of traditional economics by examining the psychological and economic concepts of individuals. Contrary to traditional economics, which always maximizes individuals' personal interests, it emphasizes that individuals can have various goals and how emotions such as fear, joy, motivation and risk aversion affect economic decisions. There are many definitions explaining behavioural economics since it covers a wide field covering economics and psychology. Behavioural economics increases the power of economic science in explaining economic events and behaviours by basing it on realistic psychological foundations. Behavioural economics is explained as questioning the accuracy of the results for better choices by testing the functioning of the traditional economic model on individuals and when this functioning works or not. An

economy that does not include psychological and sociological research that determines the stages of identifying data in people's decision-making situations, creating alternatives by finding problems, predicting outcomes and choosing between possibilities is similar to single-edged scissors (Cartwright, 2011).

Behavioural economics does not deny the assumptions of traditional economics but simply confirms these assumptions by expanding the basis of rational choice and equilibrium models. Behavioural economics aims to change the application method of economics by removing economic theories and analyses that are not behaviourally realistic while preserving the valuable approaches assumed by economics. Therefore, the main aim of economists is to increase the value of economics and improve existing economic theories, rather than completely changing economic science. In another definition, behavioural economics is defined as a science that tries to understand the impact of psychological factors, including emotions, norms and habits, on people's decision-making processes under various economic conditions. In addition, analyses of people's attitudes and behaviours are collected through experimental methods and action is taken in line with data based on daily life experiences (Simon, 1986).

Early behavioural economists aimed to strengthen their arguments by moving away from traditional economic assumptions and resorting to computer simulations to analyse complex human behaviour and behavioural patterns. Within the scope of cognitive psychology, which has developed in recent behavioural economics, W. Edwards, D. Luce, R. Thaler, P. Solvic, Amos Tversky and D. Kahneman have pioneered this progress. Unlike other psychologists, Kahneman and Tversky began to reference traditional economic theories in their studies and played a major role in the emergence of behavioural economics. The importance of behavioural economics was demonstrated by the award of the Nobel Prize to Kahneman in 2002. While the approach in early behavioural economics rejected the traditional mainstream model and focused on the search for an alternative model, in recent behavioural economics studies, the main structure of the traditional model was preserved, the assumptions regarding cognitive constraints and deviations were renewed, and as a result, the anomalies detected were tried to be explained with alternative theories. Thus, the science of psychology began to integrate with economics (Dumludağ et al, 2018).

1.1.1. Bounded rationality and systematic mistakes

Rational choice theory consists of two predictions: predicting possible future possibilities as a result of our current behaviour and how we will improve those choices. Making predictions

under uncertainty is quite difficult and contradictory. Simon criticizes the idea that a rational person chooses the best option, and introduces the concept of limited rationality, which explains how people act in their choice decisions, considering that it is far from reality and invalid. This concept, which earned him the Nobel Prize in economics, forms the basis of behavioural economics. According to Simon, the assumption of bounded rationality focuses on how people behave, so he states that making the right choice is not impossible, but costly. People's cognitive and mental intelligence is limited in terms of their capacity to acquire and process information and their ability to make calculations (Simon, 1972).

Simon explains the situation of limited rationality that individuals or companies, in short, economic agents, are not rational in their economic decisions because they are affected by sociological and cultural factors, and these factors affect people's feelings and thoughts and therefore the decision-making process. When some of the criteria that prevent decision-making are listed, he focuses on weak memory and states that people cannot fully access the information and have difficulty perceiving the information when they do. It can also be expressed as having difficulty keeping economic activities in mind. People with weak willpower in decision-making tend to act against their will and consciousness on some issues, causing them to make irrational decisions. Another criterion, self-awareness, is that people's high self-confidence makes them feel that decisions are always correct and reliable (Dunning-Kruger), but this comfort can result in wrong choices and orientations in economic decisions (Aydınonat and Urhan, 2019).

More on people's high self-confidence we can give some examples from 2017 Nobel Economics Prize winners Thaler and Sunstein with their study 'Nudge'. Research is done by Thaler with his MBA course, Managerial Decision Making, students. Students were given a question before starting the course "Which percentile do you expect your grade will be for this course?" and students to pick first, second and following 10 percentiles. Despite students being expected to distribute to percentiles and only 10% to be in the highest scorer group; students showed high self-confidence about themselves. Only 5% of the students expected their performance would be lower than %50 and more than half of them expected to be in the first two percentiles (Thaler and Sustain, 2017)

According to Thaler and Sustain, it is not only MBA students who have high self-confidence, it is a more common systematic mistake. To explain it they refer to the term 'Above Average' effect and give two examples. 90% of drivers evaluate themselves they having above-average skills in driving and the vast majority of people evaluate themselves as having above average sense of humour. They cite two studies to increase the number of examples on this topic. A

study was done in a university with its academic personnel, 94% of academicians thought they were above average as a lecturer. Furthermore, people are unrealistically and highly optimistic in some situations despite their statistical facts. For example, nearly 50% of marriages end with divorce and 50% of entrepreneurship end with failure but at a wedding ceremony people tend to evaluate the risk of divorce as 0 and entrepreneurs answered the question ‘What is the chance of your business to be successful?’ mostly as 90% and some answered 100% despite the fact they already answered a question ‘What is the chance of a business like yours to be successful?’ as 50% (Thaler and Sustain, 2017, p. 49-50)

1.1.2. Expectation approach

Kahneman and Tversky's (1979) research article "Prospect Theory: Decision Making Under Risk" in the *Econometrica* magazine became one of the most popular and most cited articles and became a turning point in the beginning of recent behavioural economics. In the research, they explain with prospect theory that making decisions under risk and uncertainty has rational, intuitive and emotional psychological effects on people. This theory emerged as a critique of the expected utility theory, which tried to explain decision-making behaviours in cases of risk and uncertainty with traditional economic assumptions. Many studies approached from an experimental perspective have also opposed this view with the difference in the human model making choices in situations of risk and uncertainty and have helped to popularize the idea that the mind is open to errors. In case of risk and uncertainty they encounter, people find the right solution by processing their decisions in their minds with the first intuitive thinking mechanism. However, if the decision-making problem is not mastered or if it creates a difficult problem, the problem is found in an easy or shortcut way without being aware of it.

Prospect theory explains that people's decision-making processes focus on the value they attach to perceived losses and gains in decisions. In other words, they take into account the change in their wealth in case of risk in the decision-making process. It leads people to irrational behaviours where they want not to lose what they have, and as a result, they exhibit loss avoidance behaviour instead of obtaining maximum benefit. The value function assumed by the prospect theory is steeper in case of loss than in gains, convex in case of loss, concave in case of gain, and S-shaped, due to the effect of loss in wealth relative to gain (Ellsberg, 1961).

1.1.3. Decision making and decisions under risk

The concepts of risk and uncertainty, which have always been popular by economists, are used in many studies and are also considered as the basic assumption factor. The concept of

uncertainty, which is also found in Adam Smith's work "History of Astronomy", explains that it will shape the human mind and behaviour and therefore society. Smith defined the concept of uncertainty as a series of events that cannot be predicted after the event, but risk can be predicted after the event. Keynes, in his research titled "General Theory" published in 1937, stated that many events that may or may not occur in the future form the basis of uncertainty. He explained that in a situation where there is a risk, the risk is a calculable phenomenon because there is a possibility of the event reoccurring, whereas, in an uncertainty situation, probability calculations will not be meaningful since the probability of recurrence is unknown (Yavuz and Tokucu, 2006).

Knight introduced the first distinction between the concepts of risk and uncertainty in his work "Risk, Uncertainty and Profit" in 1921. Knight stated that the biggest difference between risk and uncertainty is the probability distribution. The probability distribution of the uncertainty concept that includes risk is unknown, but the probability distribution of the risk is known. Therefore, it explains risk as an uncertainty that can be measured and insured. Griffith and Wallis define uncertainty as knowing that the outcome of an event may be more than one and that there may be different possibilities, while the consequences of all possibilities of the risk can also be calculated. The rational expectation hypothesis opposes Keynes and Knight's view that uncertainty cannot be calculated and assumes that uncertainty means that scarce information will be used wisely by economic agents without being wasted. In addition, the most important difference between uncertainty and risk is stated as incomplete information. Therefore, economic agents exhibit different attitudes to the events they encounter in cases of risk and uncertainty (Alada, 2000).

2. LITERATURE REVIEW

2.1. Paradox Of Choice

Businesses aim to make a profit. This is one of the basic purposes of businesses. The main tool of making a profit is the sales of products or services which are produced or mediated by businesses. And businesses work to make more profit in time. Thinking very straightforward there are two ways to increase profits: increasing income or decreasing costs. It can be said that the more products and services are sold, the more profit can be made. That's why with the will to earn and profit more businesses try to increase their sales. In this thesis context, it is necessary to refer to marketing which is a field of study that businesses benefit from by implementing theories to increase their sales and services. We need to refer to the terms of market segmentation and product assortment in the marketing field.

Market segmentation is a way to understand customer needs and meet their needs better by creating the right product or service assortment for them. With market segmentation, customers will be understood by the businesses and market segments that are reachable, measurable and large enough to make a profit can be created according to certain criteria. There are many aspects of a customer so there are many possible bases to create a segmentation for a market such as psychographic, volumetric demographic and socioeconomic criteria. Thanks to all the research and understanding of the customer processes, market segments or new markets are formed.

On the customer side, customers seek to meet their needs. According to Kotler (2010, p. 29-31) customers' purchase process, which is also a decision-making process, happens in five stages. First, a customer becomes aware of a need. Second, the customer starts to gather information about available products or services in the market. Third, the customer evaluates the alternatives. Next, the customer decides to purchase the evaluation and finally, the customer evaluates the decision-making process and reacts to the purchase. Considering this decision-making model of customers' purchasing behaviour, customers start with a need and require information.

The multiplicity of markets or market segments creates the need for more varieties of products and services. Increasing product diversity may also create the need to expand product mixes or product lines. As a result, businesses want to increase their sales reach as much as a customer they can by diversifying their products. As businesses try to understand the possible customers and meet their needs, customers also try to understand the market, products and services to be able to decide between alternatives. One can think, that customers looking to meet their needs and ready to make a purchasing decision and businesses that create market segmentation and increase the number of alternatives of products and services should be good match. But this is a fallacy. Because during this decision process with many different suppliers in the market competing to make a profit, customers will encounter multiple products from multiple businesses. Sometimes they review different products from different companies. Sometimes they examine multiple different products of the same company. Therefore, they have to decide on a product by choosing among the products.

Gathering all the information and trying to evaluate all the alternatives is costly for customers. Then the question arises of how this multi-optional selection and decision process will affect the customer. Schwartz (2004) in his book “The Paradox of Choice: Why More Is Less?” explains his studies on this subject. The core idea of him is that too many choices make people unhappy. As the options increase, the costs such as time and effort required to examine and evaluate these options will increase for the consumer (Kinjo and Ebina, 2015, s. 291). This thesis is about a similar decision-making process when a decision maker encounters many options and it is focused on the reaction to the decision after evaluating many options.

According to the paradox of choice, as more options are provided, the cost for customers to evaluate the alternatives will be harder because of the increase in costs to gather the information and compare them. So, increasing options makes customers react to their decisions. They will have a higher chance to react to their decision with more dissatisfaction or they will postpone the decision-making process. The two possible effects caused by an increasing number of options are referred to as the paradox of choice, choice overload, and too-much choice effect. The effect of increasing alternatives on dissatisfaction or postponing tends to increase if the options are more similar to each other and success in the decision, and choice is personally important.

The paradox of choice has been widely studied in terms of psychology. Having many alternatives to choose from leads to negative consequences such as decreased post-choice satisfaction and postponing the decision in many other aspects of our lives apart from

purchasing a product or service. An experiment conducted in a supermarket by Iyengar and Leper (2000), where researchers arranged two different treatments: displaying six and twenty-four varieties of jam for subjects to choose from. 242 subjects attended the experiment, 60% percent of them decided on 24 alternatives and 40% of them decided on 6 alternatives. As a result of the study 30% of the subjects who encountered 6 jam alternatives, bought some; while less than 3% of subjects who encountered 24 jam alternatives made a purchase. This is an important study to demonstrate the effect of giving too many alternatives that can cause non-purchase behaviour. Another example of the paradox of choice is from the same paper by Iyengar and Lepper. In their study, students who were enrolled on an introductory social psychology class were given a task to earn extra credit. The task was writing a two-page essay. Students were given 6 or 30 potential essay topics to choose from. As a result, overall 65% of the students chose to do the assignment. There was a significant difference between groups. Of 70 students who were assigned to the limited-choice condition, 74% of them turned in the assignment. However, of 123 students who were assigned to extensive-choice condition, 60% of them turned in the assignment. Also, the quality of the assignments was affected by the increasing number of alternative topics. Students given limited-choice conditions performed slightly but significantly better quality and scored higher than students given extensive-choice conditions (Iyengar and Lepper, 2000). Another study on different types of decision-making is about employees and their decisions on retirement plans. Study shows that employees given two funds and fifty-nine types of funds to decide on their retirement plans show higher participation when there are two funds instead of fifty-nine fund types. People in that kind of situation can delay their decision to avoid the costs of decision-making even though this can be costly for them in future (Iyengar et al, 2004).

Since 2004, most of the work on the paradox of choice has been related to psychology and studied in the field of psychology. It has not been done to examine or model the paradox of choice from a marketing perspective (Kinjo and Ebina, 2015). For example, in the presence of the paradox of choice, it has been emphasized that business management should manage diversity to avoid its effects. Businesses use sales regulators to avoid the paradox of choice. Comparison of the features of the products is ensured by sales regulators and it is thought that the consumer's selection process is eased. In addition, a choice paradox structure has been found in which positive emotions of customers at different cognitive levels increase the purchase intention, and negative emotions decrease the purchase intention. A moderated relationship was found between the number of options and the paradox of choice. Moderators affecting the

choice paradox are choice set complexity, choice uncertainty, decision task difficulty, and decision goal. In a study on the selection of jewellery products, it was found that as the options increase, it becomes more difficult to perceive the quality of jewellery, but branded jewellery makes the selection process easier. When choosing an ink pen, a choice paradox effect was observed in students when the alternatives had many features, but there was no choice paradox effect when the features of the alternatives were reduced (Greifeneder et al, 2010).

There are also situations where the negative effects of the paradox of choice do not always occur in product diversity. Brands that offer increasingly compatible diversity are perceived to have high quality. High perceived quality produces a greater share of choice for the high-variety brand, even among consumers who choose options offered by multiple brands (Berger et al, 2007).

2.2. Financial Behaviour and Financial Decision Making

This thesis studies choice overload in the financial field. That is why a section is given on financial decision-making and choice. Financial behaviour is defined as any behaviour that involves the use of available money. The ones that stand out among these behaviours are cash generation, credit use and savings. Wolfsohn and Michaeli (2014) financial behaviour; is defined as behaviours on financial matters such as spending, purchasing, saving and saving, financial planning, budgeting, investing and managing risky processes (Silverman, 2018). While appropriate financial behaviours improve the individual's financial well-being, inappropriate behaviours cause financial well-being to worsen (Xiao, 2016, p. 66).

People use different methods of saving their resources. Among these; There are methods such as creating a temporary or indefinite account, purchasing valuables or foreign currency, different funds, retirement-related studies, and purchasing treasury bonds or stocks (Meydan, 2019, p. 16). People involved in economic processes make decisions regarding some financial activities such as spending and saving in the context of this process. The financial decision-making process is not only related to the existing information in the sector but also to how the individual interprets and evaluates it. This evaluation requires an understanding of financial terms and processes. (Atik et al, 2018, p. 718).

The functioning of mental accounting has an important place in revealing the psychological and mental tendencies that affect people when shaping, examining and monitoring their investment-related actions. Mental accounting affects individuals' decisions about how they will spend their

existing resources or how much they will consume, as well as the investments they will make and the timing and amount of these decisions. Especially since investments are forward-looking financial decisions, they require monitoring current and future financial income and expenses. That is the reason why making financial decisions requires expertise and speciality in the field. The amount allocated from income to make a long-term investment prevents excessive expenditures by improving the self-control skills of individuals. However, the attitude of dividing resources into certain parts and not making any changes in the place of these resources in the mental account brings financial problems (Zhang and Sussman, 2017, p. 17).

Rational calculations are related to the evaluation processes regarding the economic decisions of individuals who want to make any financial decision starting from budgeting, analysing income and expenses and investing. Having mental calculations in individuals can lead to making unreasonable financial choices in investment processes. Classifying and evaluating the decisions taken differently in the mind causes individuals making investment decisions to make wrong choices in terms of time and confidence (Gilgil, 2020, p. 58).

People need to assess their financials and make a budget by analysing their income and expenses in time and interpreting future income and expenses. This requires effort and, understanding of a person's finances and finances in general. Adding to expertise and some level of knowledge in finance, budgeting and interpreting the future financial situation of one, the process also requires forward thinking and discipline. Thus, we can say financial decisions not only include investment, it first requires controlling expenses, costs and/or increasing income to be able to invest. Investing is a different process which also requires the same things itself. Sui et al (2019) found in their studies that individuals who make savings and investment decisions tend to avoid excessive expenditures and the rules regarding these expenditures. Decisions taken to save money protect individuals from unnecessary purchasing processes, but they cannot prevent the expected and accepted overspending behaviour. In addition, choosing the right economic decisions for the future makes it easier to plan the amount allocated to mental accounts and thus prevents excess expenses in the future. To achieve self-control to prevent overspending, individuals need to perform appropriate mental accounting processes (Sui et al, 2019). Failure to calculate the expenses to be made correctly affects the amount of spending and also causes people to miscalculate their remaining cash amount. This situation may lead people to spend excessively in the future (Zhang and Sussman, 2017).

Although the mental accounting process is not concrete, it is seen that individuals use various ways to meet some of their needs and feel the need to organize their future savings and resources

as short or long-term needs. Along with the savings and resources created, individuals also want to manage future uncertainties such as insurance or retirement to guarantee their resources. Mental processes create a context for evaluation. To prevent and minimize expenditures on eye-catching products, individuals categorize their expenditures through mental accounting and evaluate each expenditure within these sections (Mahapatra et al, 2018).

When considered within the scope of increasing individuals' awareness of their future economic needs and taking precautions for the process, it seems important to make an economic plan. In addition, there are still some problems in making the most appropriate investments and expenses, and when the process of individual financial planning is evaluated, the effect of mental accounting on individuals' losses and gains becomes visible. Emotions are effective in individuals' financial decisions, especially expenses are classified and processed differently for each option, thanks to mental calculations, and each option is compared in terms of loss and gain (Özkan, 2020, p. 39-40).

Mental accounting tendency emerges in individuals' budget creation processes. The budget emerges in both a short-term and long-term financial planning process and has a significant impact on managing their economic lives. People mentally make budgets and calculations regarding their existing economic assets and the consumption of these assets. As a result, they can use these assets either for excessive expenses or for financial investments in the future. In this context, mental processes help the individual to make his own economic decisions and set certain financial limits for himself. Although the process of individuals making economic plans and maintaining self-control is not easy, avoiding excessive expenditures brings economic well-being, which can only be achieved by performing correct mental accounting processes (Sui et al, 2019, p. 11).

Decision-making represents a complex process. Considering the current situation, it is not possible to make a direct choice based on individual financial assets and mixed schemes and there are some influencing factors. In this context, cognitive processes are involved in decisions. Decision-making is generally expressed as the process of choosing one among several options (Kannadhasan, 2010). According to Apalı and Eker (2018, p. 1258), decision-making is defined as the process of selecting and executing the most appropriate option for the future after cognitive processes.

Personal financial decisions refer to the evaluation processes of people regarding their savings and the decisions taken regarding their needs. Individuals can be happy or regretful about the

decisions taken. Decisions are directly related to the individual's attitudes and behaviours. The amount spent by individuals with similar characteristics and conditions for the same product or service or their quality expectations regarding the product is different from each other. Economic decision-making behaviour also emerges as a result of various psychological and emotional states. In this case, while some of the behaviours are carried out in the awareness process, others appear to have no influence or control by individuals. Financial decision-making behaviour, which represents a process regarding the future, also includes risk and uncertainty (Aktaş and Şenkardeşler, 2016).

According to Thaler, individuals cannot make fully rational choices. While decisions are being planned, there are problems in their implementation due to uncertainty about the future, and it is argued that decision-making is not a process based solely on reason (Özdilek and Akal, 2020, p. 243-244). Individuals in a financial decision-making situation turn to cognitive tendencies, preventing them from making rational decisions. Acting independently of psychology, culture and non-rational tendencies during the financial analysis process prevents reaching correct results. It is accepted that individuals do not constantly make rational decisions using cost-benefit analysis and have some mental biases. Such prejudices are seen especially in decisions made on financial matters (purchasing, saving, investing, etc.) (Kitapçı, 2017, p. 100). In this context, mental accounting tendency is; It enables individuals to make a mental evaluation of all kinds of economic decisions such as earnings, consumption or savings in their lives and the follow-up of these decisions. After the decisions, the suitability of the process is interpreted through mental processes (Apalı and Eker, 2018, p. 1259). In the mental calculation process, people, like businesses, control the financial actions they carry out, divide them into blocks, place their preferences regarding situations into different cognitive classes and carry out the mental processes they follow (Güven, 2021, p. 250).

Individuals mentally determine the risks related to situations in their lives such as education, health, nutrition, entertainment and investment and record them in certain areas. If similar situations are reconciled with separate schemas in the mind, different decisions can be made (Atik et al, 2018). Individuals who want to invest have to choose from many financial resources when making a decision. Considering that there are so many alternatives and it is unclear how much financial resources will be available, the decision-making process becomes even more difficult. However, uncertainty regarding the results also affects the financial decision-making process (Bayar, 2011). Mental accounting has a significant impact on the decisions individuals make. Mental accounting tendency in individuals emerges at the point of determining an option

or outcome among many options or outcomes with a narrow mindset (Zhang and Sussman, 2018).

In their research, Smith and Sinha (2000) told individuals that they should choose one of three discount options. Options include "50% discount", "buy one product, get one free" and "buy two products, 50% discount". Even though individuals' earnings are the same in all three options presented, the majority of individuals specifically chose the first and second options. In other words, individuals made choices by doing mental accounting for the options. When the mental accounting process is considered, it can be seen that it can cause irrational decisions to be made. The most important factor in people making such decisions is that loss and gain are interpreted separately from each other (Yiğit, 2020).

Some studies reveal that the mental accounting process is specific to individuals and that the calculations made to legitimize purchasing behaviour are flexible. Similarly, Kivetz (1999) states that mental accounting calculations can be ignored to exceed the limits of individuals' expenditures and consumption. With mental accounting, it is seen that the self-control of individuals is not a mandatory situation and that the individual goes beyond this limit in some cases. Failure to comply with self-control causes individuals to overconsume or make decisions in an overly optimistic manner (Wilcox et al, 2009, p. 391).

Costs, income sources, and psychological and sociological factors have an impact on individuals' financial decisions. At this point, thanks to mental accounting processes, accounts for loss and gain are created and choices are made accordingly (Özkan, 2020). Within the scope of mental accounting, costs affecting financial decisions are divided into two. These consist of sunk costs and opportunity costs.

2.3. Goal-Based Labelling and Expertise of Decision Maker

Consumer choice can be defined as the process of selecting things to fulfil consumption objectives based on their needs (Kotler, 2010). Consumption goals can range from abstract and broad, such as purchasing a product to boost one's self-esteem, to concrete and specific, such as shopping for a trustworthy car for long-distance travel. On the business side, one method used to avoid the paradox of choice effect is goal-based labelling. With this, various products are directed to the consumption target (Goedertier et al, 2012).

Within this segment of the study, our attention is directed towards attainable and tangible objectives. The consumer choice process involves selecting the item that is most likely to fulfil

a consumption objective from a wide range of choices. To achieve this objective, consumers must initially evaluate the extent to which particular product characteristics can assist in fulfilling their consumption objectives. Next, consumers must deduce the degree to which the various choices exhibit these product features. The initial stage of this procedure may present difficulties, particularly.

Goal-based labelling is referred to as labels that link assortment items to consumption goals. In a study, the effects of goal-based labelling on satisfaction with experts and novices are investigated. Using alternatives of three digital cameras, which require technical knowledge to evaluate alternatives to decide one for usage, A, B, and C, which have 9, 12, and 15 megapixels are given to subjects to make a consumption decision. While the general consumer may recognize that camera C is superior, they still need to ascertain the appropriate number of megapixels required to fulfil their specific consuming objective, such as capturing holiday photographs. In addition, the individual must assess the significance of other characteristics, such as the level of optical zoom, to accomplish this objective of consumption. Goal-based labels (such as Budget, Family Trip, or Professional) worked by bypassing all the technical details by consumers by translating the product attributes into goal attainment. The experiment study's results indicate that novice consumers, but not experts, benefit from goal-based labelling in multiple ways such as increased post-decision satisfaction, and making an optimal choice where labels are given accurately. This goal-based labelled assortment created a cue for novices to make a decision. Adding to these, results show that novices don't just blindly follow the labels, instead, they try to understand the link between labels and product attributes. Goal-based labels enable consumers to directly comprehend how product qualities contribute to achieving their desired goals, eliminating the need for translation (Goedertier et al, 2012).

The impact of goal-based labelling on customer choice and pleasure is contingent upon the consumer's level of expertise. Experts possess highly intricate knowledge structures or product schema. The product schema mentioned here consists of information regarding the significance of product qualities. They also incorporate evaluative criteria and guidelines that assist specialists in making decisions. Park and Lessig (1981) postulated that the utilization of distinctively constructed product schema influences the selection of information by novices and experts during product evaluation. Rao and Monroe (1988) demonstrated that this is indeed true. The researchers examined how product familiarity influences the impact of pricing as an external signal and product knowledge as an internal signals on the evaluation of product quality. It was discovered that when consumers gain more expertise, their reliance on internal

cues becomes stronger. Occasionally, experts also considered price as a factor, but only for products that had a strong correlation between price and quality in the market. Additional studies support the notion that professionals occasionally consider price or other external indicators, but typically prioritize internal knowledge when making choices about purchasing (Wagner et al, 2001). In this thesis studies' findings and Goal-Based Labelling will be tested in the financial field by choosing funds for investment.

Experts possess the ability to do so because they already possess a preconceived ideal point—a readily accessible collection of ideal attributes—in their heads. Therefore, individuals can readily choose the alternative that most closely aligns with their desired outcome. Consequently, specialists are likely to make the best decision without being influenced by common biases, such as those mentioned by Einhorn and Hogarth (1978) or Johnson and Russo (1984), regardless of whether the product array is labelled based on goals or not. On the other hand, novices do not possess category expertise. They lack a precise goal and do not possess any prior understanding of the relative significance of particular characteristics. Therefore, they may have difficulties in converting product attributes into desired outcomes. To circumvent this process of translation, individuals often depend on external sources of information apart from the characteristics of the object itself, such as the price, expert advice, or visual signals (Hoeffler and Ariely 1999).

A goal-based label functions similarly to pricing and display cues, as it serves as an external cue. Therefore, we anticipate that inexperienced individuals would depend on goal-oriented labels, disregarding qualities. Put simply, beginners can choose a goal-based labelled option that aligns with their objective, regardless of whether the label accurately reflects the product's ability to fulfil that goal or not. Therefore, a precise label that is based on specific goals might enhance the likelihood of beginners choosing the most suitable option. Given the utilization of fabricated designations, specialists are unable to ascertain the accuracy of these designations without examining the product details. Experts selectively rely on extrinsic signals only when they are aware of their connection to intrinsic cues. Hence, the probability of goal-based labelling influencing experts' conclusions is highly improbable (Goedertier et al, 2012)

Inexperienced individuals have been seen to encounter perplexity and dissatisfaction when confronted with intricate decisions, leading to a detrimental impact on their level of contentment with the chosen option. While there are many other definitions of satisfaction, it may generally be understood as the result of comparing the outcome of a choice with a standard of evaluation, usually the consumer's expectations before making the choice (Westbrook and Oliver, 1991).

For a comprehensive examination of these definitions, refer to Giese and Cote (2000). In a more recent study, Reutskaja and Hogarth (2009) defined satisfaction as the discrepancy between the perceived cost of making a choice (such as the time it takes to decide) and the perceived advantages of that option (such as economic gains and perceived self-control) (Loewenstein, 1999; Iyengar and Lepper, 2000). Based on the latter interpretation, we suggest that goal-oriented labels will enhance customer satisfaction by diminishing the perceived drawbacks of making a choice while maintaining the perceived advantages of choosing at the same level.

Therefore, goal-based labels will only decrease the perceived costs of choice for novices, but not for experts. Given that experts possess a predefined optimal point and possess knowledge about product characteristics and their significance to consumption objectives, the implementation of goal-based labelling will not affect their perception of choice costs or subsequent satisfaction with their decision. In addition, novices may lack the necessary expertise to accurately evaluate goal-based labelling. Consequently, we anticipate that both precise and imprecise goal-oriented labels will decrease the perceived burden of decision-making, resulting in heightened satisfaction.

2.4. Infinite Option Setup- Personalization

On the paradox of choice subject, experiments are conducted and studies are done in various areas some of which were mentioned in earlier sections such as consumer choices, choosing jam or camera or mountain bikes, etc. Most of these experiments are done with limited and extended product assortments to analyse the post-decision dependent variables firstly satisfaction then difficulty, frustration, regret etc. It was shown it is more satisfying for experts to choose from a larger set and has a negative effect on the satisfaction of novices (Cherney et al, 2015). In the earlier studies even though extended assortments provide more alternatives than limited assortments, still extended product assortments also had limits.

Having a limit in the extended assortment is reasonable since it is not very easy to provide unlimited alternatives and sticking to Schwartz's explanation of the paradox of choice, it can be said that it should be easy to interpret what is going to happen. As Schwartz depicts the paradox of choice and the relationship between satisfaction-number of alternatives of a choice with a graph, to a level called 'Sweet Spot' satisfaction arises from the decision increases with an increasing number of alternatives; but when the ideal number of alternatives exceeded increasing number of alternatives has a negative effect. (Figure 2.1) Sticking to that depiction

it can be said, that any increase in alternatives will cause a negative impact on satisfaction in post-decision and the difficulty of the decision-making process (Schwartz, 2004).

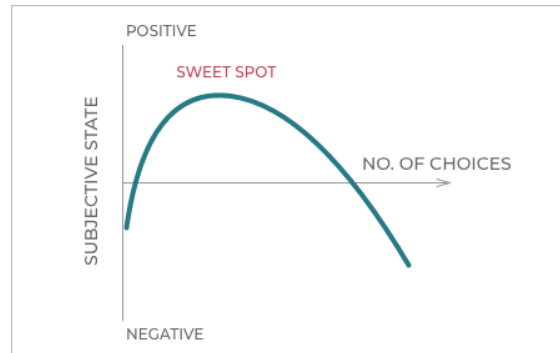


Figure 2.1: Number of choices vs subjected state.

In this thesis a new treatment is applied to subjects, targeting experts like in goal-based labelling, to analyse post-decision satisfaction and sense of difficulty from the choosing process by providing individuals with an option which allows them to personalize their option. This treatment will be called Infinite Options Setup in the following parts and the aim here is to analyse what will happen with experts and novices if we go through the infinity on Schwartz's graph in a number of alternatives by giving a chance for individuals to personalize with an option adding to other options.

3. METHODOLOGY

The paradox of choice is tested in various areas ranging from choosing jam in a supermarket (Iyengar and Lepper, 2000) to retirement plan choice of employees (Iyengar et al, 2004). In addition to testing the effects of the paradox of choice in many fields, many factors and parameters which are thought might have a relationship with the paradox of choice are also tested. One factor, which is also subject to this thesis, is the effect of expertise investigated by some researchers (Wagner et al, 2001; Hoeffler and Ariely, 1999). Another factor example can be another topic of this thesis, goal-based labelling, which has also been investigated by researchers (Goedertier et al, 2012).

This study's originality comes from several items. First is the paradox of choice is mostly studied from a consumer decision perspective and the majority of experiments asked individuals to choose products or services for purchase. In this thesis, similar to the retirement plan choice of employees (Iyengar et al, 2004) another aspect of the decision-making process is investigated. It is financial decision-making, more specifically investment decision-making by choosing a fund to invest from several options to evaluate. Second, this study investigates the effect of an important treatment (goal-based labelling) with its relationship to expertise factor. Goal-based labelling is not tested in the financial field. That's why it will be a contribution to the literature whether the effects of goal-based labelling and its interaction with expertise are consistent with earlier studies in the financial field. Third, this study challenges one very important assumption of the theory by testing a treatment named infinite option set up by the researcher. The challenged assumption of the paradox of choice is decreasing satisfaction from a decision with an increasing number of options after the 'sweet point' and it's challenged as this: decreasing post-decision satisfaction with an increasing number of alternatives is proved by many studies, but in one point where one alternative can be created by the decision maker who is assumed to be an expert, post-decision satisfaction is hypothesised to increase. This alternative option will be a personalization, so in a given frame of a subject, any option could be created by an individual and that's why this treatment is called infinite option setup.

In this study, an experiment is conducted with 2 different groups based on their knowledge, background and expertise in finance (groups are named experts and novices). The experiment

was done via an online survey method and participants were able to participate in the experiment between the 5th of June 2023 to 18th of July 2023. Participants were reached via social media and thanks to human departments of banks and lecturers of an economics entry course at ITU a total 158 of participants attended the experiment, after the elimination process upon criteria a total of 121 participants' answers were analysed.

In this study, an online experiment is conducted; the effects of the paradox of choice in the financial field, goal-based labelling and expertise in related fields are tested. The questionnaire is given in the Appendix part of the study.

In this experiment, 4 things are tested together:

- 1) Paradox of choice in finance. What will happen if people are given too many funds to invest? How will participants' satisfaction and difficulty with the decision be affected?
- 2) Effect of expertise on the paradox of choice. Will there be any difference between experts' and novices' post-decision feelings of satisfaction and difficulty when both parties encounter too many choices.
- 3) Goal Based Labelling. Will using GBL treatment have consistent results with earlier studies when tested in the financial field? What will be the relationship and interaction between GBL treatment and expertise in related fields.
- 4) Infinite Option Setup. Will IOS treatment (giving an option in which attendees can create their own) increase experts' post-decision feelings of satisfaction and confidence? Are experts going to have more tendency to choose personalization option when IOS treatment is applied? And how will novices be affected by IOS treatment?

To test these four things in this study, a questionnaire is created. Then, to prevent any effect from using two treatments to one participant and shorten the questionnaire; it is divided into two different questionnaires with only one difference. The only difference between the two questionnaires is that one has GBL treatment while the other has IOS treatment. In both questionnaires, questions are listed from the simplest one to the most complex one. One link was created to randomise participants between two questionnaires.

Questionnaires are given in the Appendix and planned as the table below. To shorten the questionnaire and limit the treatment number of one participant encounters two questionnaires

were generated. One additional question arises from the IOS treatment, that one is coded as LONG and the other one is coded as SHORT.

To increase participation in the experiment and participants' interest and attention to the questions, a lottery is planned for participants. According to their preferences and decisions on funds in the survey, if they win the lottery, 2000TLs will be invested, and after 6 months, on the 18th of January 2024, possible earnings will be donated to an institution which they choose.

In both questionnaires before starting to the fund and investment decision questions, a question is asked to determine which level each participant evaluates their knowledge in economics. Then both questionnaires started with 4 options fund choosing questions followed by post-decision satisfaction and difficulty questions. Then 8 options fund choosing questions followed by post-decision satisfaction and difficulty questions. The only difference between questionnaires comes from the third question. As mentioned before two different treatments are applied (one is GBL; the other one is IOS). In both questionnaires, this 8 options fund choosing + treatment question is followed by post-decision satisfaction and difficulty questions. Then 6 questions were asked about finance to test the participant's expertise of finance and economics. These 6 questions include some easy and basic questions about economics and some were more complicated i.e. calculating the interest earning of a deposit and knowing the meaning of the P/E ratio of a stock. Finally, a question about where participants would like to invest possible earnings from the investments upon their decisions on funds; if they win the study's lottery. Below, the questionnaires are given in a table (**Table 2.1**).

Fund questions were asked without a goal and the goal was given at the beginning of the experiment to participants. They were nudged to give attention by having a chance to earn from their investment decisions and donate it. Options are carefully created to have various investment instruments in them. Every fund in every question had a variety of percentages and instruments. Instruments given in options included varied from easy ones which are possibly known by the general population (such as precious metals) to less known by the general population (such as public sector contracts, and corporate bond issues). The complexity of funds increased by adding more variety to instruments from moving to 4 option question to 8 option question. In the 8 options question and treatment questions (GBL and IOS) complexity of fund options and variety of instruments are not changed to control other variables to see the treatments' effect.

Table 2.1: Designs of questionnaires

	SHORT		LONG
1	What do you think about the level of your economic knowledge? (1-7)	1	What do you think about the level of your economic knowledge? (1-7)
2	4 Options Fund Choosing	2	4 Options Fund Choosing
3	Do you think that you have made a good choice? (satisfaction) (1-10)	3	Do you think that you have made a good choice? (satisfaction) (1-10)
4	Was it hard to decide? (Difficulty) (1-10)	4	Was it hard to decide? (Difficulty) (1-10)
5	8 Options Fund Choosing	5	8 Options Fund Choosing
6	Do you think that you have made a good choice? (satisfaction) (1-10)	6	Do you think that you have made a good choice? (satisfaction) (1-10)
7	Was it hard to decide? (Difficulty) (1-10)	7	Was it hard to decide? (Difficulty) (1-10)
8	8 Options Fund Choosing + GBL	8	8 Options Fund Choosing + IOS
-		9	Personalization of a fund question (only for those who chose to make their own option in the earlier question)
9	Do you think that you have made a good choice? (satisfaction) (1-10)	10	Do you think that you have made a good choice? (satisfaction) (1-10)
10	Was it hard to decide? (Difficulty) (1-10)	11	Was it hard to decide? (Difficulty) (1-10)
11	6 Finance Knowledge Questions	12	6 Finance Knowledge Questions
12	Institution preference for donation	13	Institution preference for donation

Designing fund options for every question is also an important step in this experiment. Funds differed from each other with their combination and changing ratios of investment of instruments. To decrease the cognitive load, in the first question (which was given 4 different fund options to choose for investment) the fund options are created with 4 different types of instruments. Instruments and ratios of them changed within funds. Also to see the effect of

expertise clearly between the first and second question, some funds in the first question included some instruments which can be meaningful for anyone who is not an expert, i.e. deposit, gold or foreign currency. In the second question and third (GBL or IOS according to randomization), to see the effect of expertise in finance, some funds have included more complex instruments and one fund included 5 different types of instruments with changing ratios. After the first question, the other three question options are created at a similar level. By doing so, the expertise effect would be seen by increasing the number of fund options and increasing instrument types. Also between the third questions and seconds, by arranging them in a similar way, possible bias from increasing or decreasing the number of fund options and instrument types, treatment effect would be seen clearly.

The analysis and test of the four things mentioned earlier are analysed through answers to post-decision satisfaction and difficulty questions. Fund choosing questions were planned to be the treatments and effects were analysed through two post-decision questions. Fund-choosing questions didn't have an optimal or right choice since no goal was given and every individual was making their own investment decision with their knowledge, background, expertise, etc. The first and last 6 questions to evaluate participants' expertise are developed in keeping with Mitchell and Dacin (1996), the self-report question is asked very similarly from their study in measuring expertise part as 'How would you rate your level of economic knowledge?' in 7 7-point scale.

Post-decision satisfaction was developed as a general choice satisfaction and asked 'Do you think that you have made a good choice?' on 10 point scale (1= 'No, I don't think I have made a good choice'; 10= 'Yes, I have made a good choice'; Haynes, 2009). Difficulty question is asked similarly 'Was it hard to make a choice?' (1= No, it was very easy; 10= 'Yes, it was very difficult'; Haynes, 2009)

In this study experts and novices were recruited mainly from two resources. As experts, employees of private banks in Turkey are recruited with help from Human Resources departments. This group named experts includes professional white-collar labourers who work at a private bank in Turkey. Some professionals who participated in the experiment to be in the expert group were eliminated from the group because of their background (having not studied any department related to economics or finance and not working in a finance-related field in professional life at the same time). By eliminating them expert group includes bank employees

who have either graduated from an economics or finance-related field or working in a finance-related field.

Novices are recruited via ITU's economics department. Students who took an entry-level economics course from the economics department at the period of the experiment. These students are engineering students and they are not working in any finance-related field. Thus, compared with the professionals, novices haven't studied anything related to economics or finance and the majority of them were not working and the ones who had a job were not in a field that's related to finance.

Two groups were invited to attend the experiment via one link. This one link is used for randomization and randomized participants to the SHORT or LONG questionnaire. Participants are not informed about the real subject of the experiment but they are also not misled. Participants are informed that they are going to answer some questions about funds and they will try to choose the fund which attracts them with its contents of different financial instruments and changing ratios. Participants were mostly focused on making the right decision and choosing the right fund. This is known from the feedback that is gathered after the experiments. The thing that participants were not aware of about the experiment is that the study was about their answers to satisfaction and confidence questions following every fund decision.

Out of 121 participants, 46 of them were in the expert group and 75 of them were novices. The novice group (who are engineering or science students in ITU) consisted of 34 women and 40 men with 1 participant who did not want to share the information about their sex; and expert group consisted of 15 women and 31 men. 92% of the participants of the novices group belonged to the age group of 18-24; 4% of age 25-30, 3% of age 31-35 and 1,3% of age 46+. The expert group is distributed finer than novices, 17% belonged to the age group of 18-24, 30% of age 25-30, 20% of age 31-35, 22% of 36-40, 7% of age 41-46 and 4% of age 46+. Distribution of the education levels showed a similar way: 93% of novices are high school graduates, 3% of them are graduated from associate degree programs and 4% of them are bachelor's graduates. The expert group has a higher level of education and higher distribution: 7% of them are high school graduates, 4% of them graduated from an associate degree program, 24% of them are bachelor's graduates and 8% of the experts are master's graduates. Experts and novices are randomized between two questionnaires as mentioned earlier. After the randomization 25 of the experts answered the SHORT questionnaire where 21 of them

answered the LONG questionnaire, 30 of the novices answered the SHORT questionnaire and 45 of them answered the LONG questionnaire.

Table 3.1: Summary of participant characteristics

	Bank SHORT	Bank LONG	ITU SHORT	ITU LONG
Sex				
Males	15	16	16	24
Females	10	5	14	20
Age				
18-24	5	3	29	40
25-30	6	8	0	3
31-35	7	2	1	1
36-40	3	7	0	0
41-45	2	1	0	0
46+	2	0	0	1
Highest attained educ.level				
High school	2	2	0	0
Associate	1	1	0	0
Bachelors	16	14	30	45
Masters	6	4	0	0
Phd	0	0	0	0
Major Study Areas				
Economics, finance, business management	19	9	0	0
Engineering	4	6	29	44
Other	2	6	1	1
Labor Status				
Employed	25	21	3	7
Unemployed	0	0	27	38
Field of Labor				
Economics, finance, accounting	21	18	0	0
Other	4	3	3	7
Observations				
Total in groups	25	21	30	45

3.1 Hypotheses

In this section, hypotheses of the study based on expertise, GBL and IOS treatments are given. Adding to that, analysis methods and which groups to be included in that analyses are given.

H0: Experts have a significantly high level of self-reported confidence in their knowledge of economics and have given significantly more correct answers to finance questions than novices

First, a z-test is applied to the answers to self-report expertise questions for experts and novices. That way an analysis of the difference in the level of confidence in participants' expertise in economics could be run.

Second, again a z-test is run for a number of given right answers to 6 finance questions (asked at the end of the questionnaire) to analyse the difference between experts and novices. The level of expertise is analysed with these two tests.

H1: Increasing number of options causes a decrease in post-decision satisfaction for all participants

H2: Increasing number of options causes an increase in difficulty for all participants

H3: Increasing number of options causes an increase in post-decision satisfaction for experts

H4: Increasing number of options causes a decrease in post-decision satisfaction for novices

H5: Increasing number of options causes an increase in difficulty for novices

H6: Increasing the number of options does not have a significant effect on difficulty for experts

After analysing the significant difference in self-reported confidence and the number of correct answers of the two groups to test the expertise level. It is shown that the first group, 'experts' have higher knowledge in finance and higher self-reported confidence in the field than the second group 'novices'. Then, their post-decision answers about satisfaction and difficulty can be compared using expertise.

The following analyses are done by using the statistical method of Mann Whitney U-test to compare results between two questions i.e. treatments. The reason behind choosing this method

is first, the difference in the amount of participants in each group. There is a higher number of participants in the novices group than experts group. Second, in later questions of the questionnaire to decrease the time spent in the experiment for the health of the tests and the attention span of the participants, the questionnaire is divided into two. This created fewer participants in the following questions (8th question in both questionnaires(3rd fund question)) and with that amount of difference between groups, Mann Whitney U-test was the option by being a non-parametric test.

First, to test the effect of increasing the number of alternatives on all participants' post-decision satisfaction, a Mann Whitney-U test is conducted for answers to 4 options fund choosing question and 8 options fund choosing question. Second, to test the effect of the increasing number of alternatives on the difficulty for all participants, again a Mann Whitney-U test is conducted for answers of 4 options fund choosing question and 8 options fund choosing question.

To test the effect of increasing number of options on post-decision satisfaction, for experts and novices separately, both groups' answers are analysed via Mann Whitney-U test between 4 options fund choosing question and 8 options fund choosing question.

To test the effect of increasing number of options on difficulty felt while choosing an option, again for experts and novices separately, answers are analysed via Mann Whitney-U test between 4 options fund choosing question and 8 options fund choosing question.

H7: Options with goal-based labelling cause an increase in post-decision satisfaction for novices

H8: Options with goal-based labelling do not have a significant effect on post-decision satisfaction for experts

H9: Options with goal-based labelling cause a decrease in difficulty for novices

H10: Options with goal-based labelling do not have a significant effect on the difficulty for experts

To test the effects of GBL treatment, answers of the attendees to the GLB treatment questionnaire (SHORT) and all answers to the earlier question are used.

To test the effect of GBL treatment on post-decision satisfaction, experts' and novices' answers are analysed via the Mann-Whitney U test between 8 options fund choosing question and 8 options fund choosing question with the GBL treatment.

To test the effect of increasing number of options on difficulty felt while choosing an option, again experts' and novices' answers are analysed via the Mann-Whitney U test between 8 options fund choosing question and 8 options fund choosing question with the GBL treatment.

H11: Experts have a significantly high tendency to personalise an option when IOS is provided

H12: IOS causes an increase in post-decision satisfaction for experts

H13: IOS does not have a significant effect on the difficulty for experts

To test the effects of IOS treatment, answers of the attendees to the IOS treatment questionnaire (LONG) and all answers to the earlier question are used.

First, the number of experts who chose to personalise their option and novices who have done the same are compared. IOS treatment is focused on the experts and was not expected to have a significant effect on novices since novices are not expected to choose to personalise.

To test the effect of IOS treatment on post-decision satisfaction, answers of experts who chose to personalise their option and experts who didn't choose to personalise and decided from given options are analysed via Mann Whitney-U test between 8 options fund choosing question and 8 options fund choosing question with the IOS treatment.

To test the effect of IOS treatment on difficulty felt while choosing an option, answers of experts who chose to personalise their option and experts who haven't chosen to personalise and decided from given options are analysed via Mann Whitney-U test between 8 options fund choosing question and 8 options fund choosing question with the IOS treatment.

4. RESULTS

In this section, analyses are conducted which were explained in the methodology. Starting with the first hypothesis, all hypotheses are tested in the given order earlier period.

To test the H0 hypothesis, the null hypothesis is designed this way:

H_n: Experts do not have a significantly higher level of self-reported confidence in their knowledge of economics and have not given a significantly higher number of correct answers to finance questions than novices.

An alternative is designed as:

H_a: Experts have a significantly high level of self-reported confidence in their knowledge of economics and have given significantly more right answers to finance questions than novices.

As the results of z-tests indicate, H_n is rejected. Experts (M= 4.95) have significantly higher self-reported confidence than novices (M= 3.49) ($z = 6.814$). Adding to that, experts (M= 4.11) have given significantly higher correct answers to the six finance questions than novices (M= 2.95) ($z = 3.718$). It can be said that financial knowledge and confidence in the knowledge of economics are significantly higher in the expert group than novice group.

Continuing with H1 and H2, all answers to post-decision satisfaction and difficulty questions are analysed via the Mann-Whitney U-test between 4 options fund question and 8 options fund question. The total effect of increasing the number of options on post-decision satisfaction and difficulty for all participants is tested that way. The null hypothesis is designed as:

H_{null}: With an increasing number of options, post-decision satisfaction increased and difficulty decreased for all participants.

As the results show, the null hypothesis is rejected and while satisfaction was decreasing for all participants with an increasing number of alternatives; the difficulty was increasing.

Mann-Whitney U Statistics: 5067.5 P-value: 0.034. Result: The null hypothesis is rejected. Participants' post-decision satisfaction of 4 options fund questions is significantly higher than 8 options fund questions ($p < 0.05$). Below, the distribution of answers on post-decision satisfaction is given (Figure 4.1).

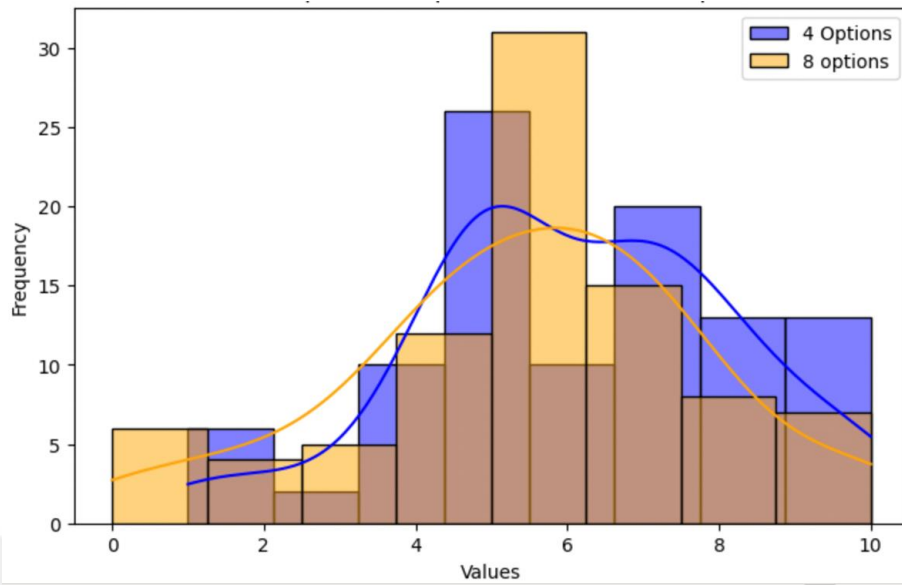


Figure 4.1: All Participants 4-8 Options Satisfaction Distribution.

Mann-Whitney U Statistics: 3443.0 P-value: 0.004. Result: The null hypothesis is rejected. Participants' post-decision difficulty of 4 options fund question is significantly lower than 8 options fund questions ($p < 0.05$). Below, the distribution of answers on post-decision difficulty is given (Figure 4.2.).

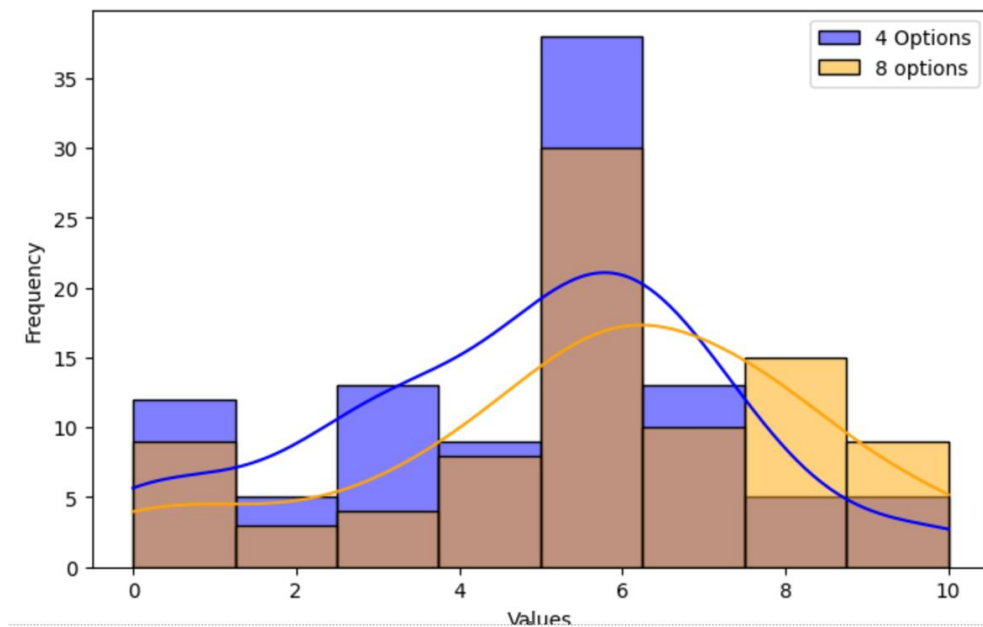


Figure 4.2: All Participants 4-8 Options Difficulty Distribution.

Testing H3, H4, H5 and H6; two null hypotheses are designed. First, to test post-decision satisfaction;

Hnull: With increasing number of options, post-decision satisfaction increases for novices.

Mann-Whitney U Statistics: 1501.0 P-value: 0.108. Result: The null hypothesis is not rejected. Post-decision satisfaction of novices from 4 options fund question is not significantly higher than 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision satisfaction is given (Figure 4.3).

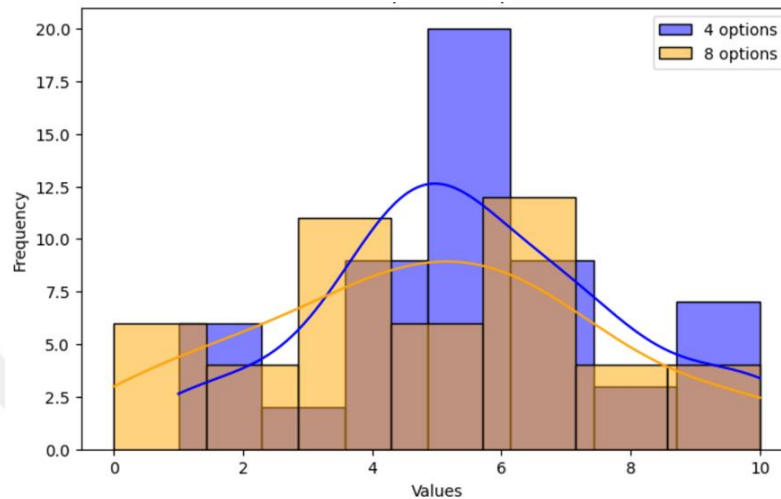


Figure 4.3: 4-8 Options Satisfaction Distribution of Novices.

Hnull: With increasing number of options, post-decision satisfaction decreases for experts.

Mann-Whitney U Statistics: 1123.0 P-value: 0.976. Result: The null hypothesis is not rejected. Post-decision satisfaction of experts from 4 options fund question is not significantly different from 8 options fund question ($p \geq 0.05$). Below, the distribution of answers from experts on post-decision satisfaction is given (Figure 4.4).

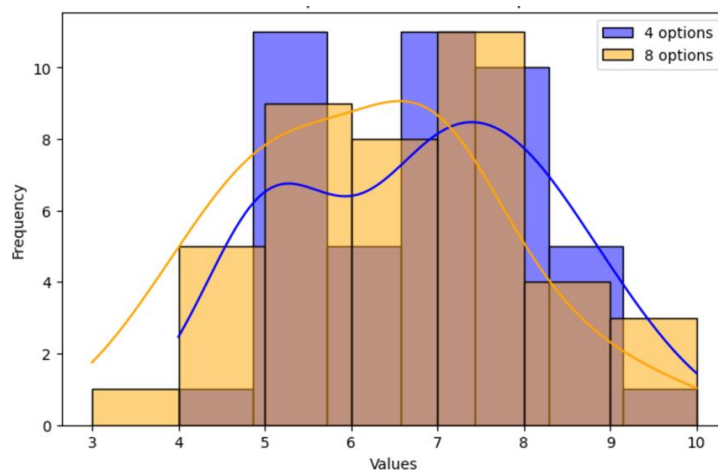


Figure 4.4: 4-8 Options Satisfaction Distribution of Experts.

Hnull: With increasing number of options, the post-decision difficulty decreases for novices.

Mann-Whitney U Statistics: 1104.0 P-value: 0.079. Result: The null hypothesis is not rejected. The post-decision difficulty of novices from the 4 options fund question is not significantly different from the 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision difficulty is given (Figure 4.5).

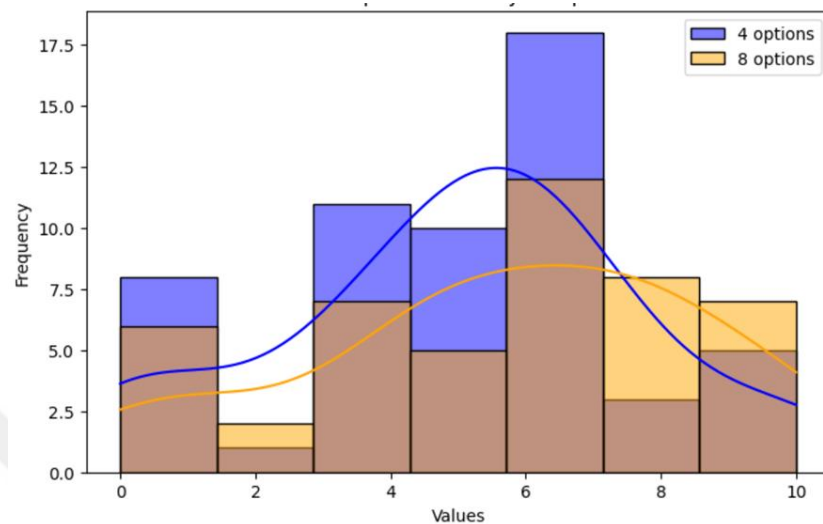


Figure 4.5: 4-8 Options Difficulty Distribution of Novices.

Hnull: Increasing the number of options, does not have a significant effect on post-decision difficulty for experts.

Mann-Whitney U Statistics: 637.5 P-value: 0.018. Result: The null hypothesis is rejected. Post-decision difficulty of experts from 4 options fund question is significantly different from 8 options fund question ($p \geq 0.05$). Below, the distribution of answers from experts on post-decision satisfaction is given (Figure 4.6).

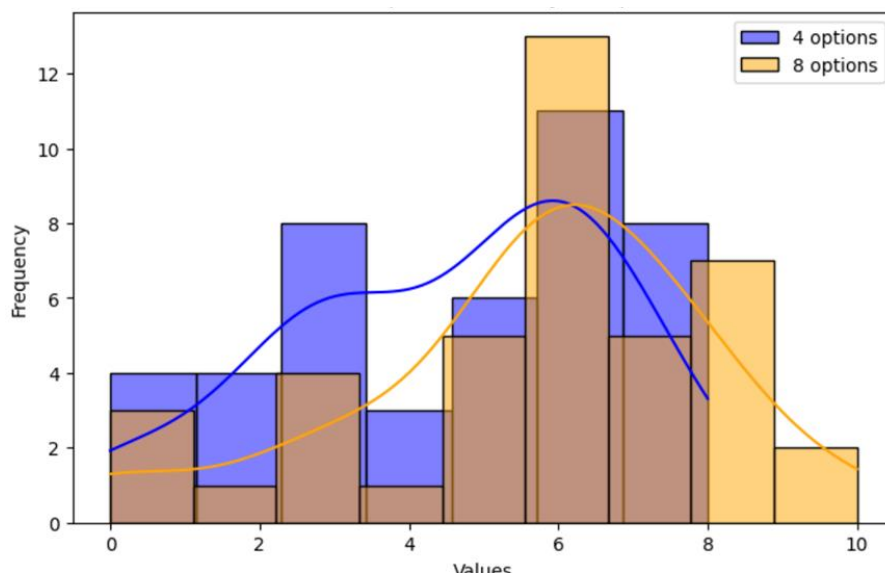


Figure 4.6: 4-8 Options Difficulty Distribution of Experts.

Results on the effect of increasing the number of alternatives with two groups based on their expertise ended up as hypothesised. The null hypotheses of the first three were not rejected, and for the last hypothesis, the null hypothesis was rejected. The possible effect did not occur in the expected way, for experts choosing an option in the 4 options fund question is significantly easier than the 8 options fund question where the effect was not significant for difficulty on novices.

One thing to mention here is that, after answering 4 options fund questions and encountering 8 options fund question, 8 participants from the novices group gave up the experiment; while only 2 from experts gave up. This is actually one expected effect of the paradox of the choice. Increasing number of alternatives may cause decision-makers to paralyse or postpone decision-making. Here, we see that in both groups some of the participants have given up the experiment with increasing number of choices. This effect can be seen more in the novice group.

Moving on with GBL treatment's analyses and hypotheses, H7, H8, H9 and H10.

Hnull: Goal-based labelling decreases post-decision satisfaction of novices.

Mann-Whitney U Statistics: 602.5 P-value: 0.034. Result: The null hypothesis is rejected. Post-decision satisfaction of novices from 8 options fund question with GBL treatment is significantly higher than 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision satisfaction is given (Figure 4.7).

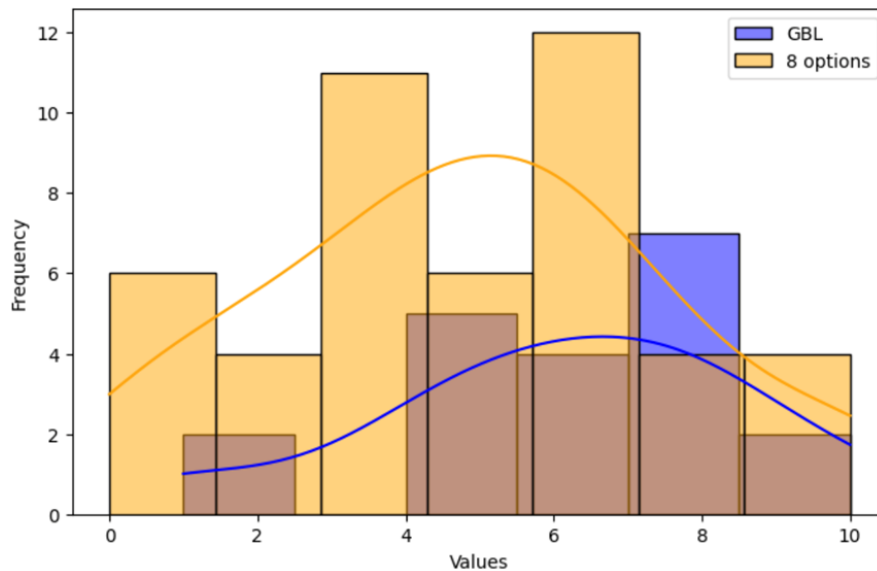


Figure 4.7: GBL-8 Options Satisfaction Distribution of Novices.

Hnull: Goal-based labelling has a significant effect on the post-decision satisfaction of experts.

Mann-Whitney U Statistics: 500.5 P-value: 0.469. Result: The null hypothesis is not rejected. Post-decision satisfaction of experts from 8 options fund question with GBL treatment is not significantly different from 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision satisfaction is given (Figure 4.8).

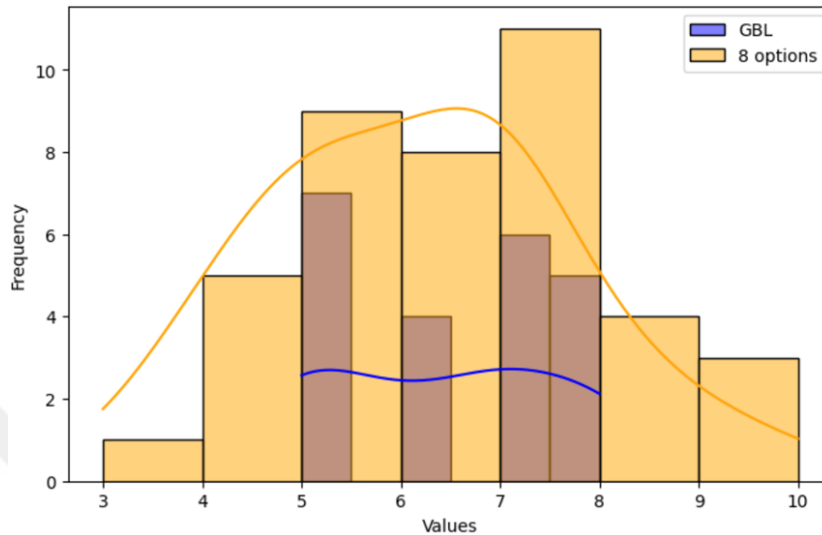


Figure 4.8: GBL-8 Options Satisfaction Distribution of Experts.

Hnull: Goal-based labelling increases the post-decision difficulty of novices.

Mann-Whitney U Statistics: 315.5 P-value: 0.016. Result: The null hypothesis is rejected. The post-decision difficulty of novices from the 8 options fund question with GBL treatment is significantly lower than the 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision satisfaction is given (Figure 4.9).

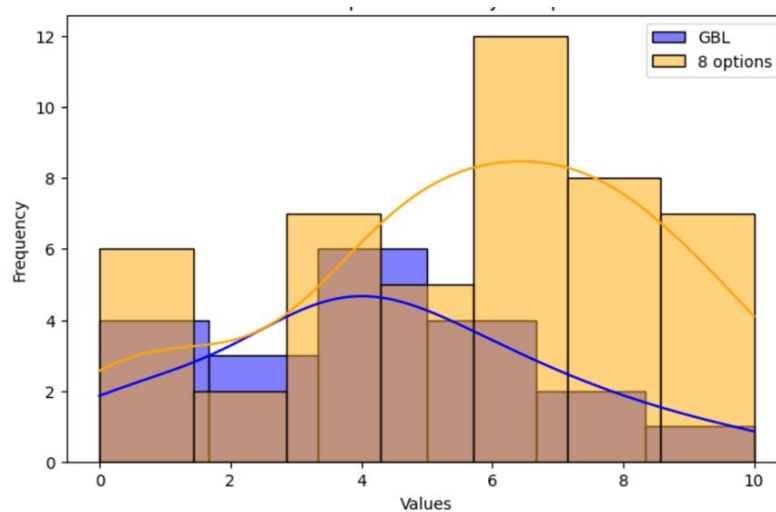


Figure 4.9: GBL-8 Options Difficulty Distribution of Novices.

Hnull: Goal-based labelling does not have a significant effect on the post-decision difficulty of experts.

Mann-Whitney U Statistics: 392.5 P-value: 0.39708164998269435. Result: The null hypothesis is not rejected. Post-decision difficulty of experts from 8 options fund question with GBL treatment is not significantly different from 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision satisfaction is given (Figure 4.10).

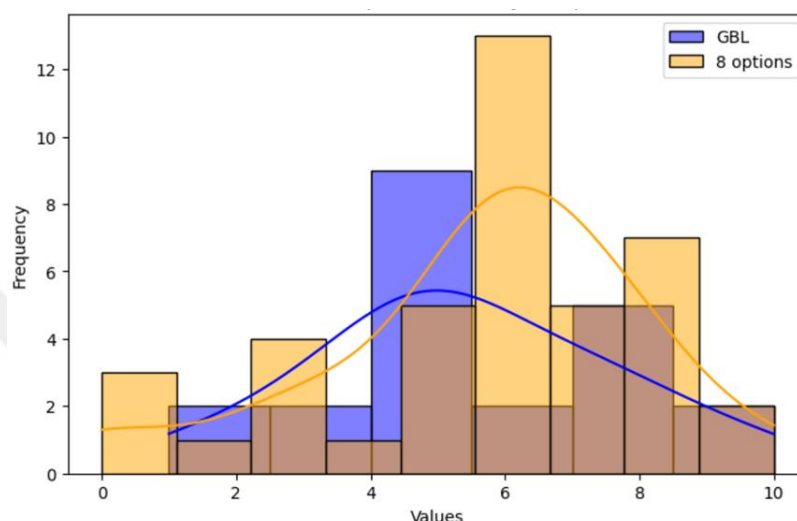


Figure 4.10: GBL-8 Options Difficulty Distribution of Experts.

As the results depict, goal-based treatment in the financial field has positive effects on novices; while does not have any significant effect on novices. This finding is consistent with the earlier studies and their findings. By testing goal-based labelling in this thesis by giving fund options for experts and novices; the effects of goal-based labelling on post-decision satisfaction and difficulty are found consistent in the finance field with earlier studies and findings on expertise.

Finally, the effect of IOS will be tested for experts as hypothesised. IOS is a setup where an option is given to the decision maker in a choice set which enables him/her to personalize the option. Since, personalization requires some level of expertise, this treatment and choice setup targets experts' post-decision satisfaction and difficulty. Testing, H11, H12 and H13.

Starting with H11, as mentioned before IOS was targeting experts so a higher ratio of experts is expected to choose the personalization option than novices. Results show that 6 of 41 participants in experts chose to personalize whereas only 2 of 47 novices chose the same option in IOS treatment. That makes, 14,6% for experts and only 4,3% for novices.

To test the other two hypotheses null hypotheses are designed as given below with results.

Hnull: Infinite option setup decreases post-decision satisfaction of experts.

Mann-Whitney U Statistics: 205.5 P-value: 0.003. Result: The null hypothesis is rejected. Post-decision satisfaction of experts who chose to personalize from 8 options fund question with IOS treatment is significantly higher from 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision satisfaction is given (Figure 4.11).

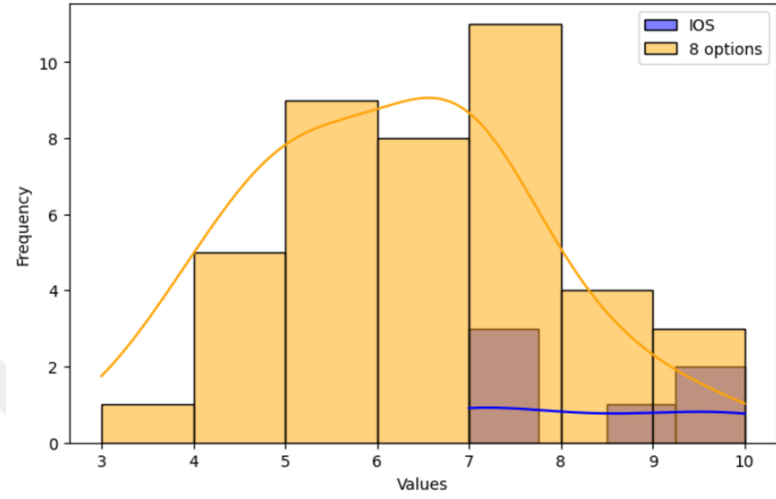


Figure 4.11: IOS-8 Options Satisfaction Distribution of Experts.

Hnull: Infinite option setup has a significant effect on the post-decision difficulty of experts.

Mann-Whitney U Statistics: 91.0 P-value: 0.153. Result: The null hypothesis is not rejected. Post-decision difficulty of experts who chose to personalize from 8 options fund question with IOS treatment is not significantly different from 8 options fund question ($p \geq 0.05$). Below, the distribution of answers of novices on post-decision satisfaction is given (Figure 4.12).

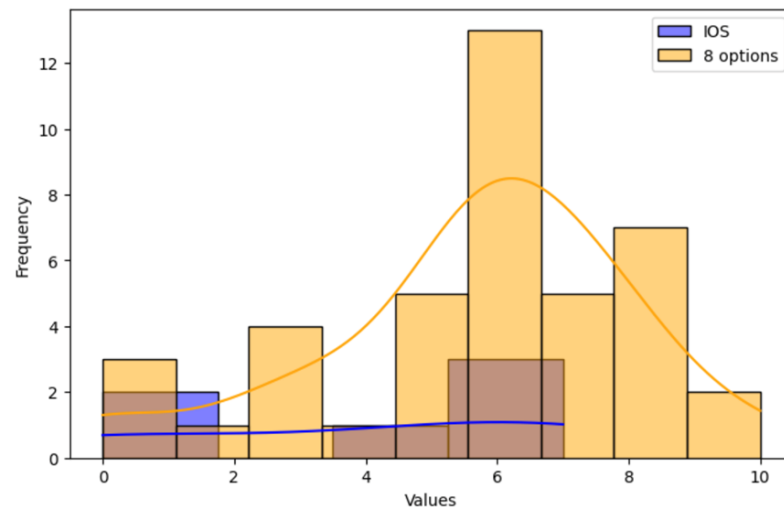


Figure 4.12: IOS-8 Options Difficulty Distribution of Experts.

As the results show, Infinite Option Setup has a significant effect on experts if they choose to personalise their option. With that, IOS does not have a significant effect on the difficulty for experts.





5. CONCLUSION

As results show, some findings of the study are aligned with the earlier studies mentioned in the study. It has been seen in this experiment that increasing number of options decreases post-decision satisfaction and increases the difficulty, whether one is an expert or novice. Apart from the earlier studies, in this experiment, it has not been found any significant difference in post-decision satisfaction and difficulty between experts and novices with an increasing number of options. These are the only findings that contradict the earlier studies.

There are details that should be mentioned at the end of this thesis. In the thesis, the paradox of choice is analysed in financial fields with the effect of expertise and two treatments. First is, Goal-based labelling is a treatment which was tested earlier than this study in many different fields. With this thesis, effects are tested in the financial field.

As it has been seen, findings from the GBL treatment consistent considering earlier studies. In this experiment, the effect of GBL treatment on novices' post-decision satisfaction and difficulty was significant while on experts' post-decision satisfaction and difficulty was not significant. With GBL, novices' post-decision satisfaction was increased and felt difficulty level was decreased.

The second treatment is IOS, namely infinite option setup is a newly developed treatment, so this can be called the first test for this treatment. Experts who are interested in personalising their option, and eager to put effort and time into doing that have expertise enough to seem to have a significantly higher level of post-decision satisfaction than experts who encounter a large set of choices without personalisation option.

In the following studies, firstly, IOS can be tested in a different field. It can be tested in any field which requires expertise. Next, the effects of IOS can be compared within the treatment group. In this thesis answers from treated experts and not treated experts (answers from 8 fund choosing questions) are analysed. In the following studies effects of IOS on post-decision satisfaction and difficulty can be analysed within experts, between choosing to personalise and choosing any other option.

Other than these suggestions, the characteristics of personalisers can be studied. The reason behind the increasing satisfaction with personalisation may occur from other variables such as characteristics, higher level of expertise, etc. This control can be run to analyse whether the real reason behind the increasing satisfaction with personalisation is personalisation itself or not.

In this study, with limited time and sources, all the above were not questioned, studied or analysed, only thought in the process of analysing the results. Causing from the same limitations, it was not very easy to reach a large amount of participants and control some other effects such as the age difference between expert and novice groups. For the research purpose, the highest number of participants is achieved with personal and professional connections. With enough sources, more participants with a higher variety can be reached. That way other possible effects i.e. age difference between groups can be eliminated.

REFERENCES

- Aktaş-Şenkardeşler, R.** (2016), Belirsizlik ve risk altında karar alma problemini geleneksel ve davranışsal finans perspektiflerinden değerlendirme. *İşletme Araştırmaları Dergisi*, 8(4).
- Alada, A.D.** (2000), İktisat Felsefesi ve Belirsizlik. İstanbul.
- Apalı, A. ve Eker, Y.** (2018), Karar alma sürecinde etkili olan modern muhasebe yaklaşımlarının incelenmesi. *Innovation and Global Issues Congress IV*, 1258-1263.
- Atik, M., Yılmaz, B. ve Köse, Y.** (2018), Bireysel finansal kararlarda zihinsel ön yargıların etkisi: Mental muhasebe. *Uluslararası İktisadi ve İdari İncelemeler Dergisi*.
- Aydinonat, N.E. ve Urhan, Ü.B.** (2019), Hayatın İçindeki, İstanbul.
- Bayar, Y.** (2011), Yatırımcı davranışlarının davranışçı yaklaşım çerçevesinde değerlendirilmesi. *Girişimcilik ve Kalkınma Dergisi*, 6(2).
- Berger, J., Draganska, M., & Simonson, I.** (2007). The Influence of Product Variety on Brand Perception and Choice. *Marketing Science*, 26(4), 460–472. <http://www.jstor.org/stable/40057175>
- Cartwright, E.** (2011), Behavioural Economics. New York.
- Chernev, Alexander & Bockenholt, Ulf & Goodman, Joseph.** (2015). Choice Overload: A Conceptual Review and Meta-Analysis. *Journal of Consumer Psychology*. 25. Pages 333–358. 10.1016/j.jcps.2014.08.002.
- Colin C., George L. and Drazen P.** (2005), Neuroeconomics, How Neuroscience Can Inform Economics, *Journal of Economic Literature*.
- Dinler, Zeynel** (2016), İktisada Giriş, Bursa.
- Dumludağ, D., Gökdemir, Ö., Neyse, L., Ruben, E.** (2018), İktisatta Davranışsal Yaklaşımlar, Ankara.
- Einhorn, H. J., & Hogarth, R. M.** (1978), Confidence in judgment—persistence of illusion of validity. *Psychological Review*, 85(5).

- Ellsberg, D.** (1961), Risk, Ambiguity, And The Savage, Quarterly Journal of Economics.
- Gilgil, B.** (2020). Behavioural finance: investigation of investment decisions (Master's Thesis). Izmir University of Economics Master's Program in Financial Economics, İzmir.
- Goedertier, F., Geskens, K., Geuens, M., & Weijters, B.** (2012), Increasing choice satisfaction through goal-based labeling. Marketing Letters, 23(1).
- Greifeneder, R., Scheibehenne, B., & Kleber, N.** (2010). Less may be more when choosing is difficult: Choice complexity and too much choice. Acta psychologica, 133(1).
- Güven, B.** (2021), Zihinsel muhasebe: Kuramsal bakış. Econharran, 5(7).
- Haynes, Graeme.** (2009). Testing the boundaries of the choice overload phenomenon: The effect of number of options and time pressure on decision difficulty and satisfaction. Psychology and Marketing. 26. 204 - 212. 10.1002/mar.20269.
- Hoeffler, S., & Ariely, D.** (1999). Constructing stable preferences: a look into dimensions of experience and their impact on preference stability. Journal of Consumer Psychology, 8(2).
- Iyengar, S., and Lepper, M.** (2000), When choice is demotivating: Can one desire too much of a good thing? Journal of Personality and Social Psychology 79 (6).
- Iyengar, Sheena & Jiang, Wei & Huberman, Gur.** (2004). How Much Choice Is Too Much? Contributions to 401(K) Retirement Plans. Pension Design and Structure: New Lessons from Behavioral Finance.
- Johnson, E. J., & Russo, J. E.** (1984). Product familiarity and learning new information. Journal of Consumer Research, 11(1).
- Kahneman, Daniel** (2011), Thinking, Fast and Slow. First Edition. New York: Farrar, Straus and Giroux.
- Kannadhasan, M.** (2010), Role of behavioural finance in investment decisions. Journal of behavioural finance, 1-7.
- Katona, G.** (1951), Psychological Analysis of Economic Behavioural, New York.
- Kinjo, K., and Ebina, T.** (2015), Paradox of choice and consumer nonpurchase behaviour. Ai & Society, 30(2).
- Kitapçı, İ.** (2017), Rasyonaliteden irrasyonaliteye: Davranışsal iktisat yaklaşımı ve bilişsel önyargılar. Maliye Araştırmaları Dergisi, 3(1).

Kotler, P. (2010), Understanding Marketing: Expert Solutions to Everyday Challenges. United Kingdom: Harvard Business Press.

Li, B.X., Lei, M. and Li, W. (2018) Empirical Research on Consumer Expertise and Perceived Value of Fund Investors. American Journal of Industrial and Business Management, 8, 645-657.

Mahapatra, M., Raveendran, J. ve De, A. (2018), Are financial plans orchestrated by mental accounts? an empirical investigation into the role of mental accounting on personal financial planning. 2019 Academic Research Colloquium for Financial Planning and Related Disciplines.

Meydan, S. (2019), Fakülte öğrencilerinin finansal davranış ve finansal tutum düzeyleri: Trakya Üniversitesi örneği (Yüksek Lisans Tezi). Trakya Üniversitesi Sosyal Bilimler Enstitüsü, Edirne.

Mick, D. G., Broniarczyk, S. M., & Haidt, J. (2004), Choose, choose, choose, choose, choose, choose, choose: Emerging and prospective research on the deleterious effects of living in consumer hyperchoice. Journal of Business Ethics, 52(2).

Mitchell, A.A. and Dacin, P.A. (1996) The Assessment of Alternative Measures of Consumer Expertise. Journal of Consumer Research, 23, 219-239.

Oulasvirta, Antti & Hukkinen, Janne & Schwartz, Barry. (2009). When more is less. 516. 10.1145/1571941.1572030.

Özdilek, E. ve Akal, M. (2020), Davranışsal ekonomi çerçevesinde Richard Thaler'in görüşleri. İktisadi İdari ve Siyasal Araştırmalar Dergisi, 5(13).

Özkan, M. (2020), Mental muhasebenin finansal yönden değerlendirilmesi. Mali Çözüm Dergisi, 30(161).

Park, C. W., & Lessig, V. P. (1981), Familiarity and Its impact on consumer decision biases and heuristics. Journal of Consumer Research, 8(September).

Ratneshwar, S., Pechmann, C., and Shocker, A. (1996), Goal-derived categories and the antecedents of across-category consideration. Journal of Consumer Research, 23.

Rod, Hill and Tony, Myatt (2017), İktisat: Eleştirel Ders Kitabı, (Çev. Hüsnü Bilir), Ankara.

Schwartz, B. (2000), Self-determination: The tyranny of freedom. American psychologist, 55(1).

- Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K., & Lehman, D. R.** (2002). Maximizing versus satisficing: Happiness is a matter of choice. *Journal of Personality and Social Psychology*, 83(5), 1178–1197.
- Schwartz, B.** (2004). *The paradox of choice: Why more is less*. HarperCollins Publishers.
- Silverman, Y.** (2018). Financial social work: A growing specialty in clinical social work. *Practice Perspectives*, Summer.
- Simon, H.** (1972), *Theories of Bounded Rationality, Decision and Organization*.
- Simon, H.** (1986), Rationality in Psychology and Economics, *The Journal of Business*, 59(4).
- Sui, L., Sun, L., ve Geyfman, V.** (2020). An assessment of the effects of mental accounting on overspending behaviour: An empirical study. *International Journal of Consumer Studies*.
- Thaler, R.H. and Sunstein, C.R.** (2017). *Nudge*.
- Wagner, J. A., Klein, N. M., & Keith, J. E.** (2001), Selling strategies: the effects of suggesting a decision structure to novice and expert buyers. *Journal of the Academy of Marketing Science*, 29(3).
- Westbrook, R. A., & Oliver, R. L.** (1991). The dimensionality of consumption emotion patterns and consumer satisfaction. *Journal of Consumer Research*, 18(1).
- Wilcox, K., B. Vallen, L. Block, ve G. J. Fitzsimons** (2009). Vicarious goal fulfillment: When the mere presence of a healthy option leads to an ironically indulgent decision. *Journal of Consumer Research*, 36(3).
- Xiao, J. J.** (2008), Applying behaviour theories to financial behaviour. J. J. Xiao (Ed.), *Handbook of consumer finance research* In (pp. 69–81). New York: Springer
- Xiao, J. J.** (2016). Consumer financial capability and wellbeing. J. Xiao (ed.) *Handbook of Consumer Finance Research* In (pp. 3-17)
- Yavuz, S. and Tokucu, E.** (2006), Post Keynesyen İktisat ve Belirsizlik, Marmara Üniversitesi İ.İ.B.F. Dergisi, 16(1).
- Yiğit, A. G.** (2020), Promosyon çerçevesi ve zihinsel muhasebe üzerine bir analiz. N. Koç, M. Yiğit ve A. G. Yiğit (Ed.), İçinde: *Ekonomik Tercihlere Davranışsal Yaklaşım*, Ekin Yayınevi.

Zhang, C. Y. ve Sussman, A. B. (2017), The role of mental accounting in household spending and investing decisions. Forthcoming in C. Chaffin (Ed.), *Client Psychology*. New York: Wiley, Chicago Booth Research Paper.





APPENDICES

APPENDIX A

A.1. DEMOGRAPHIC QUESTIONS

1. Kaç yaşındasınız?

A)18-14 B)25-30 C)31-35 D)36-40 E)40-45 F) 46+

2. Cinsiyetinizi nasıl ifade edersiniz?

A) Erkek B) Kadın C) Belirtmek istemiyorum

3. Eğitim durumunuz nedir?

A) İlk öğretim mezunu B) Orta öğretim mezunu C) Lise mezunu D) Önlisans öğrencisi
E) Önlisans Mezunu F) Lisans Öğrencisi G) Lisans Mezunu H) Yüksek Lisans
Öğrencisi/ Mezunu I) Doktora Öğrencisi/ Mezunu

4. Eğitim alanınız nedir?

A) Sağlık B) Fen Bilimleri C) Ekonomi/İşletme/Finans vb. D) Diğer Sosyal Bilimler E)
Diğer

5. Çalışıyorsanız, hangi alanda çalışmaktasınız?

A) Sağlık B) Hizmet C) Ekonomi/İşletme/Finans vb. D) Teknik Alanlar E) Eğitim
F) Ticaret/ Girişimci G) Diğer

6. Aylık geliriniz hangi aralıktadır?

A) 0-8500TL B) 8501-10000TL C)10001-15000TL D)15001-20000TL E)20001-
50000TL F)50001+

7. Finansal okur-yazarlık seviyenize 1-7 arasında kaç puan verirsiniz?

A.2. FINANCIAL LITERATURATE QUESTIONS (order of questions and options are
randomized for every participant)

1.Aşağıdaki yatırım araçlarından hangisi diğerlerinden daha risklidir?

a)Tahvil b)Hisse Senedi c)Mevduat d)Bono

2.Temel finansal kavramlarla ilgili verilmiş önermelerden hangisi doğrudur?

a) Faiz oranları yükseldikçe kredi kullanımı artar.

b) Hisse senedi, döviz, altın gibi finansal araçlar birbirinden bağımsız değişim gösterirler.

c) Enflasyon paranın satın alma gücünü azaltır.

d) İhracat rakamlarının fazla olması ekonomi için olumsuz bir gelişmedir.

3.6 aylık faiz oranı %20 olacak şekilde 500TL ile yatırım yapılırsa 1 yıl sonunda faiz getirisi ne olur?

a)330 b)500 c)350 d)220 e)200

4.Aşağıdakilerden hangisi dünya çapındaki borsalardan değildir?

a)LKEC b)DAX c)NIKKEI d)NYSE e)FTSE

5.Halka açık bir şirketin bir payının değerinin kazancına oranı aşağıdakilerden hangisidir?

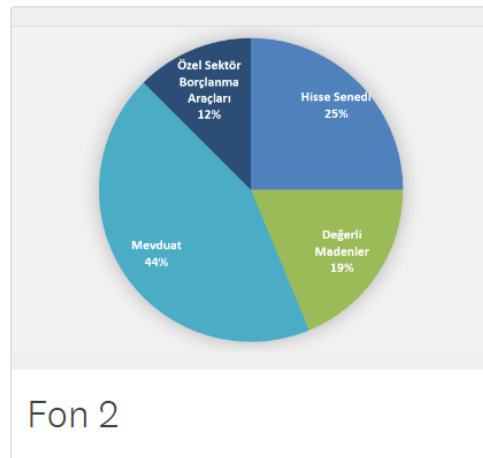
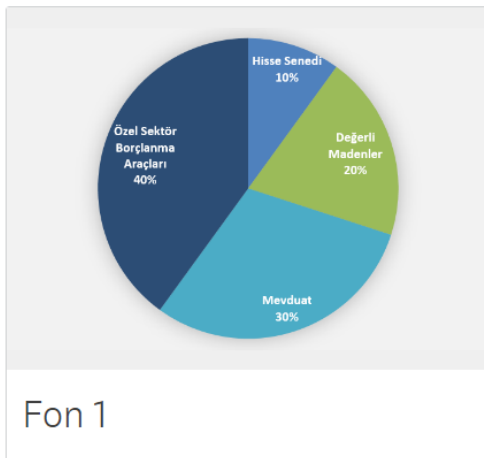
a)FD/Satışlar b)PD/DD c)FD/FAVÖK d)F/K e)Halka Açıklık Oranı

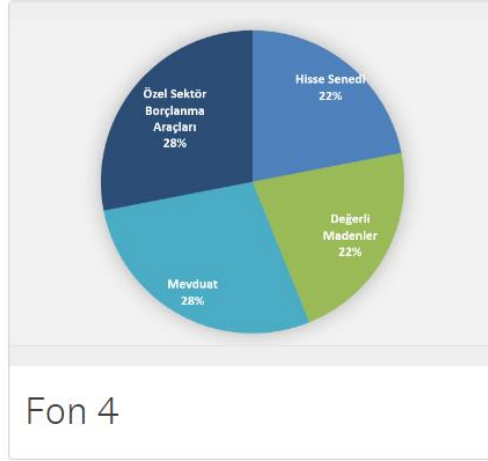
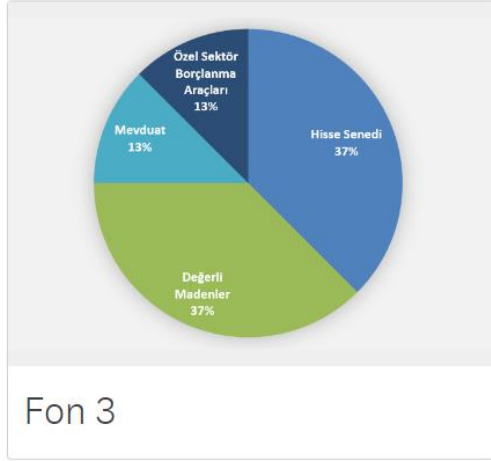
6.Aşağıdaki yatırım araçlarından hangisinin belirli bir getirisi vardır?

a)Tahvil b)Altın c)Hisse Senedi d)VİOP e)Foreign Exchange

A.3. FON SEÇİMİ SORULARI (4 soru)

1. 500TL ile aşağıdaki fonlardan birine sizin adınıza yatırım yapılacaktır. 6 ay sonunda fon seçiminizin performansına göre kazanç sağlayabilirsiniz. 500TL'niz ile aşağıdaki 4 fondan hangisine yatırım yapmayı tercih edersiniz?





*Seçim ardından iki soru ile seçim yaparken zorlanma oranı ve memnuniyet ölçülecek

1a- İyi bir seçim yaptığınızı düşünüyor musunuz?

Hayır, iyi bir seçim yaptığımı düşünmüyorum

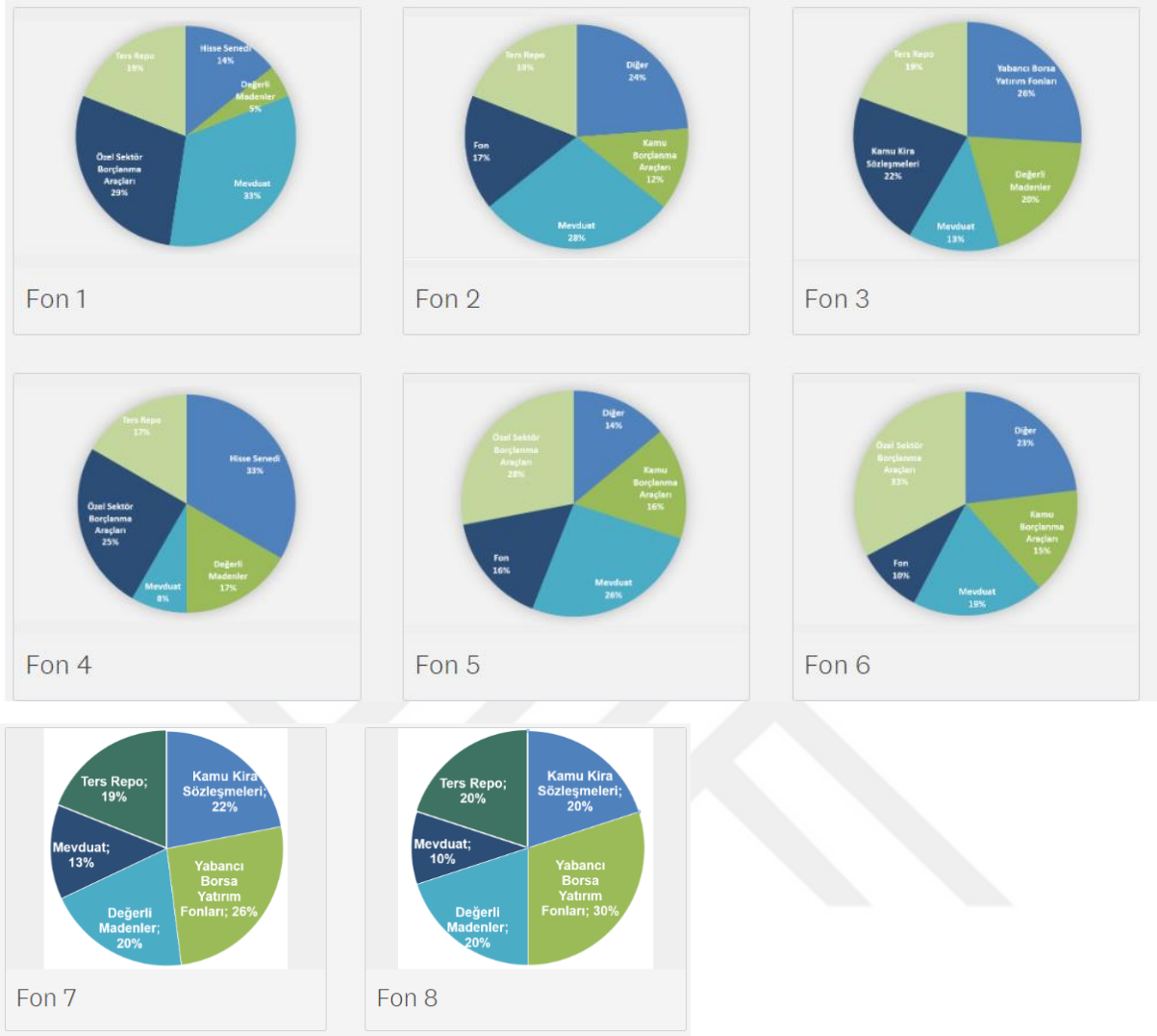
Evet, iyi bir seçim yaptığımı düşünüyorum

1b- Seçim yapmak zor muydu?

Hiç zor değildi

Çok zordu

2. 500TL ile aşağıdaki fonlardan birine sizin adınıza yatırım yapılacaktır. 6 ay sonunda fon seçiminizin performansına göre kazanç sağlayabilirsiniz. 500TL'niz ile aşağıdaki 8 fondan hangisine yatırım yapmayı tercih edersiniz?



*Seçim ardından iki soru ile seçim yaparken zorlanma oranı ve memnuniyet ölçülecek

2a- İyi bir seçim yaptığınızı düşünüyor musunuz?

Hayır, iyi bir seçim yaptığımı düşünmüyorum

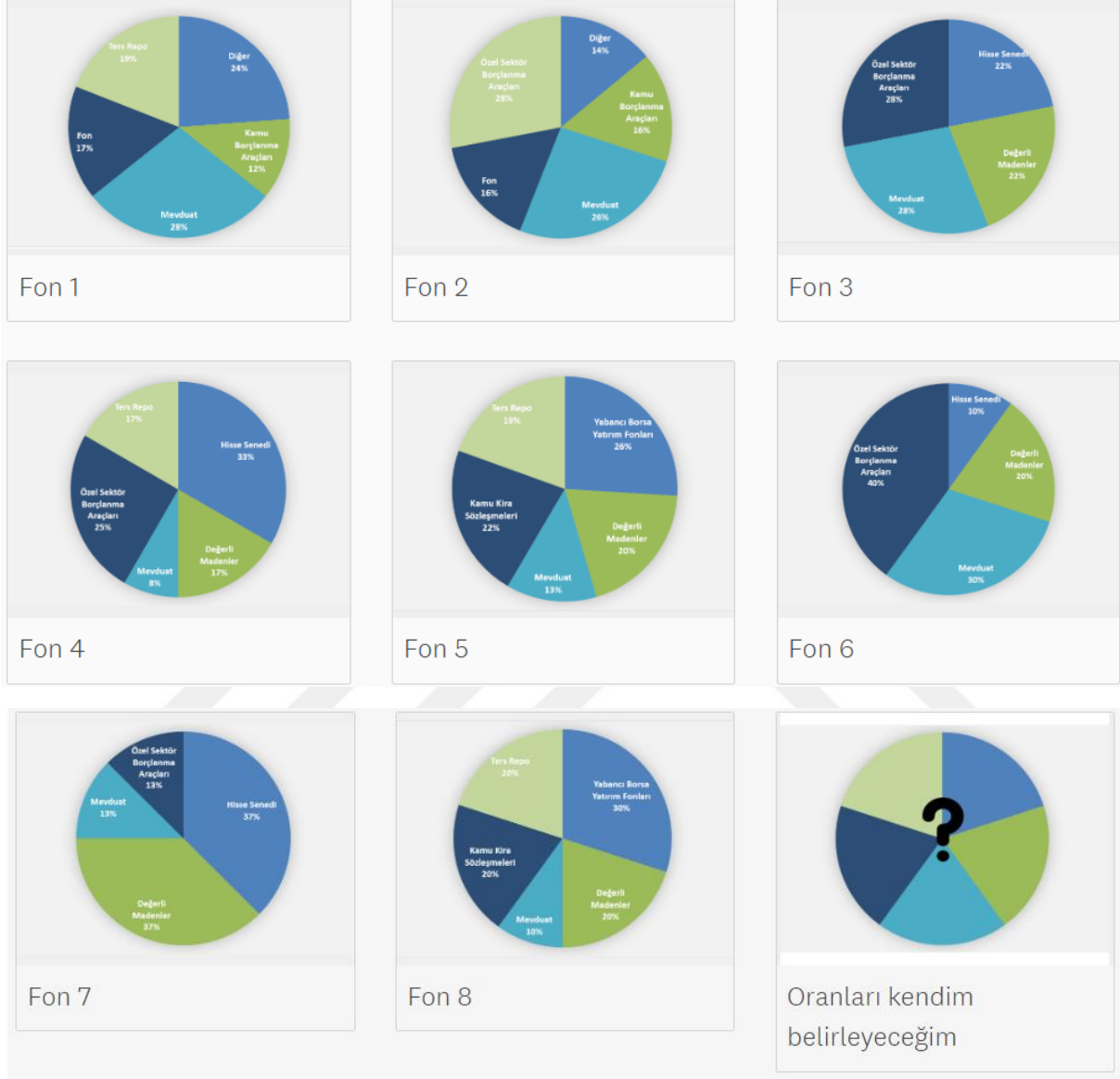
Evet, iyi bir seçim yaptığımı düşünüyorum

2b- Seçim yapmak zor muydu?

Hiç zor değildi

Çok zordu

3.1. IOS. 500TL ile aşağıdaki fonlardan birine sizin adınıza yatırım yapılacaktır. 6 ay sonunda fon seçiminizin performansına göre kazanç sağlayabilirsiniz. 500TL'niz ile aşağıdaki 8 fondan hangisine yatırım yapmayı tercih edersiniz?



If participants chose to personalize, next an open-ended question will be asked to create their own option. Participants who do not choose to personalize will move to following question.

*Seçim ardından iki soru ile seçim yaparken zorlanma oranı ve memnuniyet ölçülecek

3a- İyi bir seçim yaptığınızı düşünüyor musunuz?

Hayır, iyi bir seçim
yaptığımı
düşünmüyorum

Evet, iyi bir seçim
yaptığımı
düşünüyorum

3b- Seçim yapmak zor muydu?

Hiç zor değildi

Çok zordu

3.2. GBL 500TL ile aşağıdaki fonlardan birine sizin adınıza yatırım yapılacaktır. 6 ay sonunda fon seçiminizin performansına göre kazanç sağlayabilirsiniz. 500TL'niz ile aşağıdaki 8 fondan hangisine yatırım yapmayı tercih edersiniz?



*Seçim ardından iki soru ile seçim yaparken zorlanma oranı ve memnuniyet ölçülecek

4a- İyi bir seçim yaptığınızı düşünüyor musunuz?

Hayır, iyi bir seçim yaptığımı düşünmüyorum	Evet, iyi bir seçim yaptığımı düşünüyorum
	

4b- Seçim yapmak zor muydu?

Hiç zor değildi	Çok zordu
	

A.4. DONATION PREFERENCE

1. Çekilişi sizin kazanmanız halinde hangi kuruma bağış yapılmasını tercih edersiniz?

APPENDIX B

B.1. DEMOGRAPHIC QUESTIONS

1.How old are you?

A)18-14 B)25-30 C)31-35 D)36-40 E)40-45 F) 46+

2.How do you describe your gender?

A) Male B) Female C) I don't want to state

3.What is your education level?

A) Primary school graduate B) Secondary school graduate C) High school graduate D) Associate degree student E) Associate degree graduate F) Bachelor's degree student G) Bachelor's degree graduate H) Master's degree student/ graduate I) Phd student/graduate

4.What is your field of study?

A) Health B) Science C) Economics/Management/Finance etc. D) Other social sciences E) Other

5.Which field are you working in if you are working?

A) Health B) Service C) Economics/Management/Finance etc. D) Technical fields E) Education F) Trade/Entrepreneur G) Other

6. What is your monthly income?

A) 0-8500TL B) 8501-10000TL C) 10001-15000TL D) 15001-20000TL E) 20001-50000TL F) 50001+

7. "How would you rate your financial literacy level on a scale of 1 to 7?"

B.2. FINANCIAL LITERATURE QUESTIONS (order of questions and options are randomized for every participant)

1. Which of the following investment instruments is riskier than the others?

a) Bond b) Stock c) Deposit d) Treasury bill

2. Which of the following statements about basic financial concepts is true

- a) As interest rates rise, borrowing increases.
- b) Financial instruments such as stocks, currencies, and gold change independently of each other.
- c) Inflation reduces the purchasing power of money.
- d) Excessive export figures are a negative development for the economy.

3. If an investment of 500 TL is made with a 6-month interest rate of 20%, what will be the interest return at the end of 1 year?

a) 330 b) 500 c) 350 d) 220 e) 200

4. Which of the following is not a global stock exchange

a) LKEC b) DAX c) NIKKEI d) NYSE e) FTSE

5. What is the ratio of a publicly traded company's share price to its earnings?

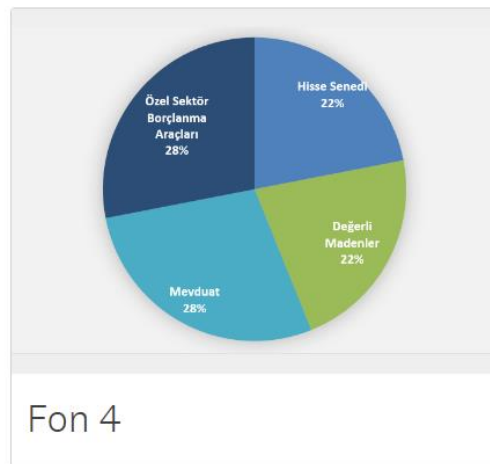
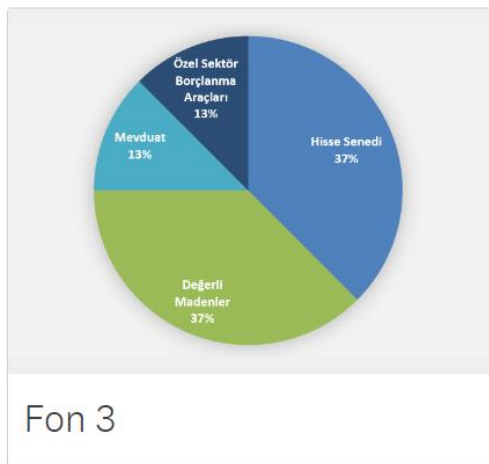
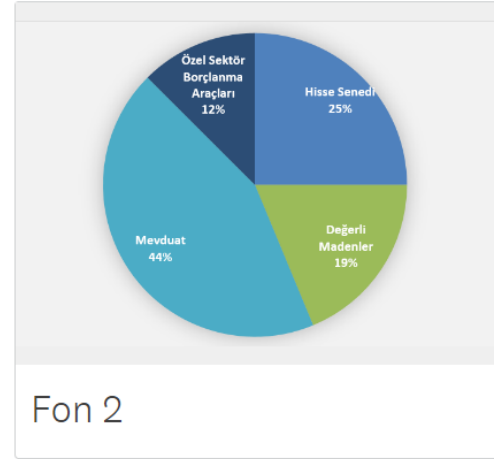
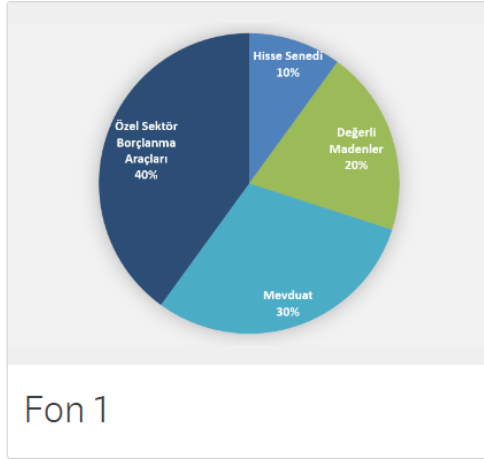
a) P/Sales b) P/B c) P/EBITDA d) P/E e) Free float rate

6. Which of the following investment instruments guarantees a certain return?

a) Bond b) Gold c) Stock d) Futures and Options Market (VIOP) e) Foreign Exchange

B.3. FUND CHOOSING QUESTIONS (4 Questions)

1. On behalf of you, an investment of 500 TL will be made in one of the following funds. You may profit based on the performance of your chosen fund after 6 months. Which of the following 4 funds would you prefer to invest in?



* After the decision, the satisfaction and the difficulty of the decision making process is measured with two questions

1a- Do you think you made a good choice?

Hayır, iyi bir seçim yaptığımı düşünmüyorum

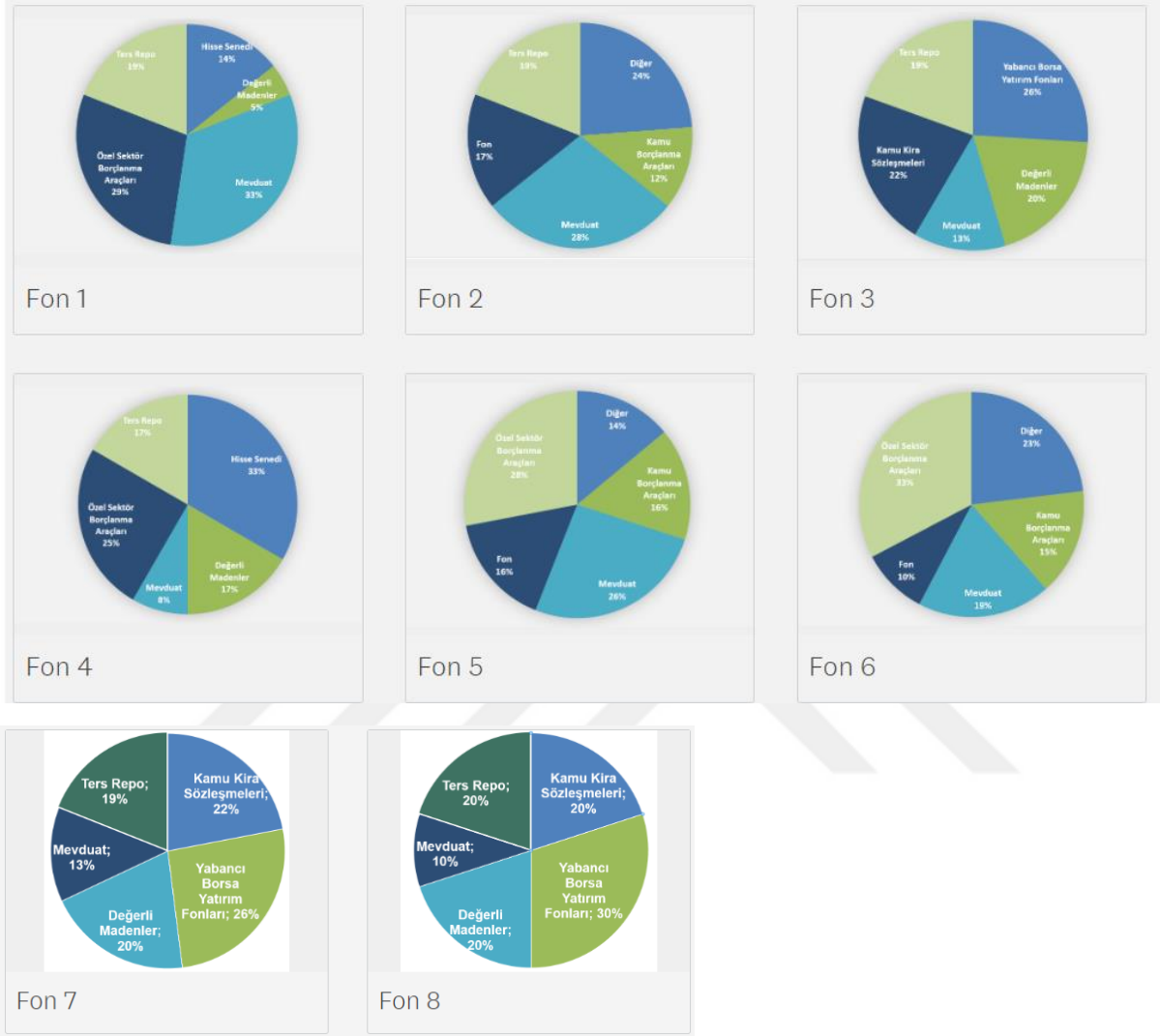
Evet, iyi bir seçim yaptığımı düşünüyorum

1b- Was it difficult to make a choice?

Hiç zor değildi

Çok zordu

2. On behalf of you, an investment of 500 TL will be made in one of the following funds. You may profit based on the performance of your chosen fund after 6 months. Which of the following 8 funds would you prefer to invest in?



* After the decision, the satisfaction and the difficulty of the decision making process is measured with two questions

2a- Do you think you made a good choice?

Hayır, iyi bir seçim yaptığımı düşünmüyorum

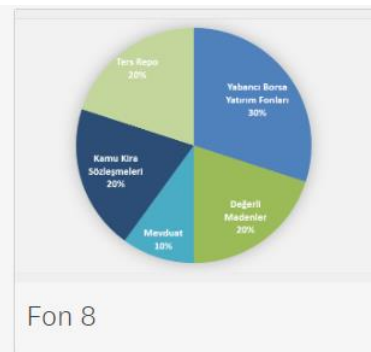
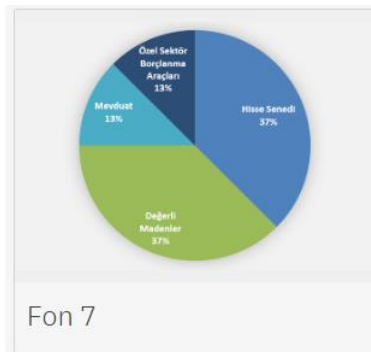
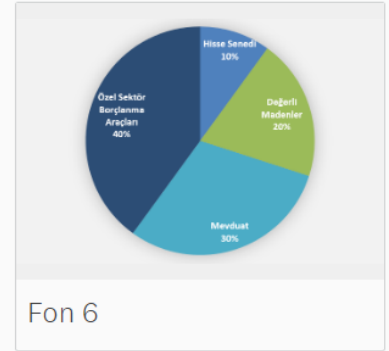
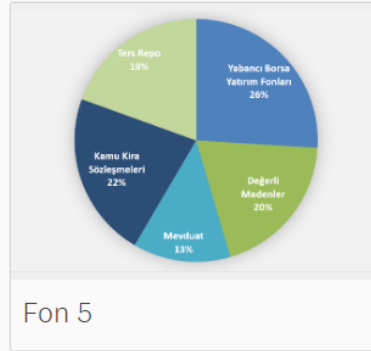
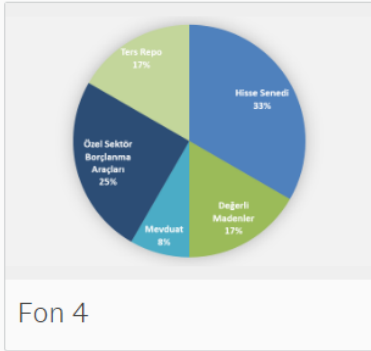
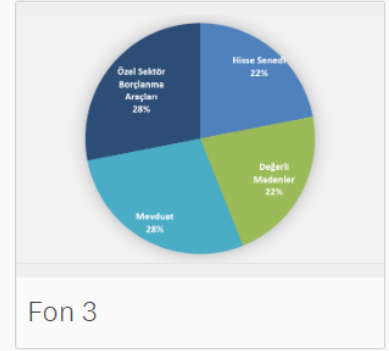
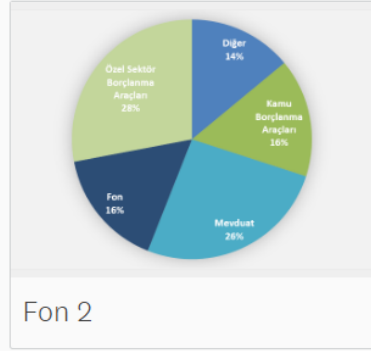
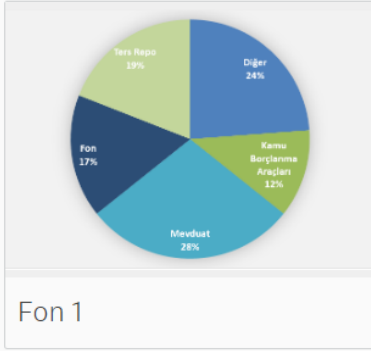
Evet, iyi bir seçim yaptığımı düşünüyorum

2b- Was it difficult to make a choice?

Hiç zor değildi

Çok zordu

3.1. IOS. On behalf of you, an investment of 500 TL will be made in one of the following funds. You may profit based on the performance of your chosen fund after 6 months. Which of the following 8 funds would you prefer to invest in?



If participants chose to personalize, next an open-ended question will be asked to create their own option. Participants who do not choose to personalize will move to following question.

* After the decision, the satisfaction and the difficulty of the decision making process is measured with two questions

3a- Do you think you made a good choice?

Hayır, iyi bir seçim yaptığımı düşünmüyorum

Evet, iyi bir seçim yaptığımı düşünüyorum

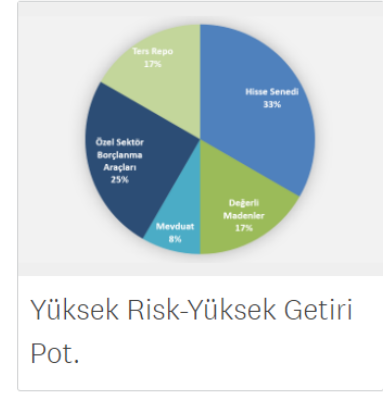
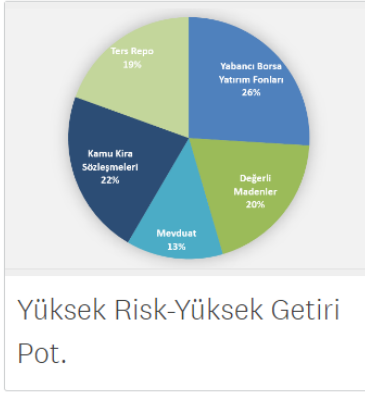
3b- Was it difficult to make a choice?

Hiç zor değildi

Çok zordu

3.2. GBL. On behalf of you, an investment of 500 TL will be made in one of the following funds. You may profit based on the performance of your chosen fund after 6 months. Which of the following 8 funds would you prefer to invest in?



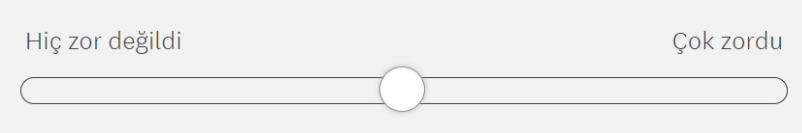


* After the decision, the satisfaction and the difficulty of the decision making process is measured with two questions

4a- Do you think you made a good choice?



4b- Was it difficult to make a choice?



B.4. DONATION PREFERENCE

1. If you were to win the lottery, which institution would you prefer the donation to be made to?



CURRICULUM VITAE

Name Surname : Ömrüm METİN

EDUCATION :

- **B. A.** : 2020, Istanbul University, Faculty of Literature, Sociology
- **B. A.** : 2020, Istanbul University, Faculty of Economics, Economics
- **M. A.** : 2024, Istanbul Technical University, Economics

PROFESSIONAL EXPERIENCE AND REWARDS:

PUBLICATIONS, PRESENTATIONS AND PATENTS ON THE THESIS:

- **Metin, Ö.**, 2024. The effects of expertise, goal-based labelling and infinite option setup on the paradox of choice. *7th International Genç Ekonomistler Congress*- May 17-19, 2024, İstanbul, Turkey.