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The Most Common Behavioural Biases among Young Adults in Bristol, UK and Istanbul

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Abstract

According to traditional finance theories, individuals behave rationally and take financial decisions under this rationality. Contrary to traditional finance theories, behavioural finance states that individuals do not always act rationally because they are affected by emotions and feelings. Thus, behavioural finance can be defined as systematic errors that keep individuals away from rationality. The biases might cause unhelpful or even hurtful decisions. Therefore, a high level of behavioural biases might negatively affect the financial well-being of individuals. It is vital to investigate young adults' financial behaviours as the future of the economies are influenced by their decisions. In this research, behavioural biases among young adults in Bristol, UK and Istanbul, Turkey, was examined to prevent young adults from making irrational financial decisions by identifying the most common behavioural biases. Thus, economies might be robust than today. According to result of this research, young adults have different behavioural biases depending on their culture. The most common biases among young adults in Bristol are over-optimism, anchoring, categorisation, conservatism, and the illusion of control while they are framing, cognitive dissonance, the illusion of knowledge and cue competition among young adults in Istanbul. These common behavioural biases that young adults in Bristol and Istanbul have to lead to many irrational financial decisions. It is not possible to reduce these behavioural biases by direct intervention, and for this, individuals need to be educated. Families may educate young adults about behavioural biases. After that rest of the education about behavioural biases may be given in the schools. Lastly, individuals should be informed about their behavioural biases and possible effects of these biases on their financial well-being.

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Introduction

Traditional finance is based on a normative approach, which means that traditional finance provides the solution to how the individual should behave towards financial events. As a result of this, it does not focus on the behaviour of the individual and the results of this behaviour. Unlike traditional finance, behavioural finance examines how individuals behave in financial events. Therefore, behavioural finance is based on a descriptive approach (Baker and Nofsinger, 2002). It can be said that traditional finance is based on financial events, while behavioural finance is based on the behaviour of the individuals.

Behavioural finance is defined as the application of psychology to finance science (Shefrin, 2002). Another similar definition was made by Nofsinger, (2004), who examines how psychology affects financial decisions, financial markets, and companies. According to Barberis and Thaler (2003), behavioural finance takes the approach that some financial events can be better understood by using models where individuals are not completely rational. These common definitions show that psychology has played a crucial role in individuals' financial decisions.

According to psychology research, most decision-making behaviours are known as biases. All types of decision-making, especially related to money and investing, may be affected by bias. Generally, biases are the processing of information to make a decision and are the preferences of individuals. Biases may result in

unhelpful, or even hurtful, decisions to be made in investments. All types of investors, both private and professional, can be affected by their biases due to a fundamental part of human nature (Shefrin, 2002).

Young individuals' financial decisions shape the futures of the economies. Therefore, it is important to reveal the most common biases among young adults in order to increase the possibility to make sound financial decisions. In this research, two different cultures were compared to explain the cultural effects on behavioural biases. Thus, the main aim of the research is to reveal the most common behavioural biases among young adults in order to prevent them from making hurtful decisions.

This study intends to examine the following research problem.

"What are the most common behavioural biases among young adults who live in British and Turkish culture?"

Survey questionnaires were prepared based on Montier's (2007) classification as it was simplified. Two different questions were asked to 415 young adults from Bristol, UK, and Istanbul. Behavioural biases questions cover representativeness, confirmation, hindsight, self-attribution, anchoring, conservatism, over-optimism, availability, cognitive dissonance, framing, the illusion of knowledge, the illusion of control, categorisation, loss aversion and overconfidence. These topics are common behavioural biases topics among researchers (Kahneman and Tversky, 1981; Nofsinger, 2002; Pompian, 2006; Montier, 2007). Two different statements were presented to participants to measure behavioural biases.

Young adults should be informed and educated about their behavioural biases to minimise their negative effects. Policymakers should consider young adults' biases level before designing the school syllabus. Young adults should be supported with workshops and activities therefore the awareness of the biases would be increased.

Literature Review

Behavioural biases are classified by Pompian (2011) as cognitive and emotional biases. Cognitive biases are based on incorrect cognitive judgements, while emotional biases are focused on judgements affected by sense and feelings. Correction of emotional bias is harder than correction of cognitive bias because emotional biases arise from impulses and intuitions. Cognitive biases arise from errors in processing information or memory errors.

Over-optimistic – Illusion of Control – Illusion of Knowledge

Over-optimistic bias is defined as the probability of a positive outcome seen as a high, unlike the probability of a negative outcome, seen as a low (Puri and Robinson, 2007). Most individuals are often affected by over-optimistic bias. According to Kahneman and Riepe (1998), the probabilities of poor results are predicted as low due to optimistic individuals. This finding is similar to Puri and Robinson's research (2007). The findings might have been more useful if the researchers had adopted the individuals' cultural or socio-demographic factors.

Pompian's research (2006) has revealed that individuals prefer to mainly invest in the companies that they work with or the companies operating in their geographical area, due to over-optimism. They might behave as over-optimistic for companies which are, or have been, in their own geographic region. Also, over-optimistic investors focus more on promising companies while they are examining annual reports or reading companies' financial analyses. Basically, Pompian (2006) has filled the gap in the literature by finding reasons for over-optimistic bias.

According to Kahneman and Riepe (1998), over-optimistic individuals tend to exhibit the illusion of control bias. The illusion of control is a situation that individuals believe have implications for the results of uncontrolled events (Montier, 2007). This definition is supported by Pompian (2011). Control illusion is the tendency of the individual to think that although they are not able to control the results of events, they believe that they can control, or at least affect, the results. As a result of this situation, individuals cannot distinguish chance-related events from talent-related events. Therefore, individuals think that all kind of events can be controlled. However, Langer's research (1975) has shown that control of events depends on factors such as the existence of competition, management of preferences, familiarity with the event in question and active/passive participation. For instance, although the lottery is entirely dependent on luck, it has been observed that the person's perception of the chance of winning or losing depends on whether they choose the ticket themselves or are given it by someone else. Individuals who have a chance to choose a lottery ticket have felt as if they

had control over the lottery result. This research might have been more useful if they had examined the reduction of the effect of the illusion of control.

Over Confidence

In its purest form, overconfidence is defined as the unconditional trust in an individuals' reasoning, judgement, and cognitive abilities (Pompian, 2011). Psychologists have found that overconfidence causes the exaggeration of individuals' ability to control their knowledge and events. Therefore, they can underestimate risks (Nofsinger, 2004). Generally, individuals are affected by overconfidence due to the illusion of control and the illusion of knowledge.

When the definition of overconfidence is evaluated in the context of investors, investors' attitudes towards risk are affected by overconfidence. According to Nofsinger (2004), generally, investors make more risky investments under the effects of overconfidence. Thus, this type of investor tends to take more risk due to the low level of diversity in investment. Basically, a rational individual only invests when the expected return is higher than the transaction cost. An overly confident individual will invest even if the actual expected return is negative because they exaggerate the accuracy of the information and the expected return (Barber and Odean, 2001). A large brokerage house with more than 35,000 households was investigated by Barber and Odean (2001) to understand the level of overconfidence among men and women, and the reflection of this situation on expected returns. They found that men have more confidence than women, and men invest 45% more than women. As a result of their investment transaction, women gain more earnings than men.

Self-Attribution

Self-attribution bias is the tendency of individuals to think that their successes depend on innate implications such as talent and intuition, while failures depend on external effects such as bad luck. For instance, students who are successful in an exam think that this success depends on their intelligence and work ethic. However, those who are unsuccessful in the exam claim that there is unjust grading (Pompian, 2011). This situation is supported by Hoffmann and Post (2014) and is referred to as the tendency to think that success depends on personal skill, while failure is due to factors which are out of their control. According to Montier (2007), there are significant results relating to self-attribution bias. It is one of the main factors that can influence the decisions of investors and limit their learning. Thus, this bias obstructs errors from being accepted as a mistake, and we should take lessons from these errors (Montier, 2007).

Gervais and Odean (2001) have developed a multi-term market model that defines how investors learn their capabilities and how bias in this learning process can create over-confident investors. In the multi-period economy represented by the model, only one risky financial asset is traded between three market participants – an informed investor, a liquidity trader, and a market organiser. This risky asset distributes the dividends at the end of the specific period. At the beginning of the period, none of the market participants knows the number of dividends to be distributed. The investor, who successfully predicts the profit share of the next period, believes that their success is due to their superior talent. This situation shows that the investor ultimately behaves under the effects of self-attribution bias. In other words, in the model, investors do not know their abilities at the beginning and learn their abilities because of their success and failures. When individuals assess their ability, they exhibit overconfidence in their successful decisions. Thus, they begin to show overly self-attributed bias.

Hoffmann and Post (2014) found a similar result to the Gervais and Odean (2001) study. The main purpose of this study was to show to what extent good returns affect individuals' beliefs on their skills. As a result of this research, when individuals get higher returns, compared to the previous period, they think that this situation arises due to their investment skills.

Confirmation

Confirmation bias is a type of selectivity in perception. It reduces the value of ideas which contradict with our beliefs while focusing on ideas which are supported by our beliefs. For instance, after an individual has purchased a television, the tendency is to look for the same television in another, higher-priced, store to confirm that they have made a good purchase (Pompian, 2011). When people develop strong hypotheses, they do not show any interest in new knowledge which supports or contradicts their hypotheses. This can be illustrated briefly as when individuals believe that their investment strategy is more profitable than others, they might ignore evidence that this strategy is wrong. Besides, individuals tend to ignore the evidence. They may even

mistakenly consider the evidence as supporting their initial hypotheses. This can be seen in the research of Rabin (2002). If a teacher believes that a student is more intelligent than others, the teacher will tend to confirm their hypothesis when the students' performances are compared in the future.

In summary, it has been shown that investors tend to stay away from any knowledge which contradicts their opinions and findings. They also believe the knowledge which supports their current opinions. This situation may result in the increasing importance of evidence supporting investors' opinions. However, they may ignore evidence that contradicts with their views. According to Rappaport and Mauboussin (2001), in order to avoid confirmation bias, it would be useful to make enquires into the most valued and definite information and opinions before making any financial decisions.

Hindsight

Hindsight bias is the tendency to believe that an individual initially predicted the outcome of the event with the advantage of acquired knowledge and experience following a similar event (Pompian, 2011). According to Pompian (2011), there is a significant relationship between individuals' knowledge and their judgements in that individuals' judgements are affected by their knowledge.

Besides Pompian, the relationship between judgement and having knowledge has also been investigated by Fischoff (2003). In Fischoff's research, students were divided into five groups. Each group read a text describing the war between the British and the Gurkha people in Nepal. Four possible outcomes were listed regarding this war. Fischoff asked the first group of students to predict the likelihood of the occurrence of these four possible outcomes. However, one of these four possible outcomes was added to the end of the text as the real result of the war for all groups, except this one. The four groups of students predicted the likelihood of occurrence of four possible outcomes, regardless of the results given at the end of the text. The result of the study has shown that students who knew the result had not been able to ignore this known information. These groups assigned higher possibilities of the true result of the war for the given situations when compared the first group of the students, who had no result information. When declaring that a situation has occurred, it increases the likelihood of the output being perceived. One major drawback of this research is that educated individuals were selected. The results might be relevant to the individuals' education level.

Bukszar and Connolly (1988) conducted a study to test whether education in strategic decision-making decreases the hindsight bias. A commercial case of a pharmaceutical company was given to the participants to examine and, two days later, a two-page analysis of the case was required. Three different versions of the case were prepared and distributed randomly to three groups of students before the research began. The participants were asked to analyse the potential successfulness or unsuccessfulness of the project without giving them any information about the result of the investment project in the first group. In the first version, if the project achieved a 20% return on investment in the first two years, the project will be accepted as successful. In the other two versions, it was stated that the projects were fully implemented and that the first one had a 36% return on investment and the second had a 4% return on investment in the first year. The result of the study showed that the participants could not ignore the given information about the result. The group, which knew the real investment profitability of the project as 36%, estimated a higher probability of success and profitability when compared to the group that knew it was 4%. Those who gave positive results for the investment project found the investment decision to be less risky and more attractive than the ones with negative results. The findings have shown that educated individuals in strategic decision-making tend to have hindsight bias.

However, Kahneman and Riepe (1998) stated that hindsight bias is dangerous in two aspects. Firstly, hindsight bias can lead to a sense of overconfidence by nurturing the illusion of the world as a more predictable place than it is. Besides, hindsight bias can also lead to perceived risky investments as a delusional mistake in the investor's mind. For example, when the value of a stock falls, this decline may seem inevitable. Thus, the investor wonders why the financial advisor did not recommend selling this stock.

Cognitive Dissonance

When newly acquired information contradicts with previous information, people often feel psychological stress. This psychological event is called cognitive dissonance. Cognitive dissonance is mental discomfort caused by contradictory cognitions. Cognitive dissonance also refers to beliefs, attitudes, and values in psychology. Smoking is a classic example of cognitive dissonance. Smoking is accepted by everyone as causing lung cancer and heart disease, but everyone who smokes wants to live long and healthily. In the case

of smoking, the desire to live longer contradicts the act of doing something likely to shorten life. The tension created by this contradiction may be reduced by denying the fact of lung cancer and heart disease, or by justifying smoking because it reduces stress or provides a similar benefit (Pompian, 2011).

According to Festinger (1975), cognitive dissonance is a tendency to change thoughts to justify past actions. Festinger's theory suggests that people are anxious because of cognitive dissonance factors, and they should change their minds to reduce this anxiety. This definition is close to Goetzmann and Peles's definition (1997), which defines it as individuals changing their thoughts to fit their past actions.

Goetzmann and Peles (1997) surveyed individuals investing in mutual funds, collecting information on which investment funds they prefer and what they think about the past performance of these funds. The reported real performances of the mutual funds for the previous year and the perceived performances of the investors that were discovered at the end of the survey were compared. According to the results of the comparison, the rate of return that investors actually earn from the funds was lower than the rate of return that they thought they would gain before they realised the gain. In other words, due to investors' cognitive dissonance incompatibility, it was observed that the funds they invested in had a positive bias related to their past performance, and the perceived performance was higher than the actual performance.

Conservatism

The conservation bias is a mental process in which people adhere to their old views and expectations, even though they accept new knowledge (Pompian, 2011). Noori (2016) has extended Pompian's definition by adding that the individuals' beliefs slowly change when they face new evidence. According to Pompian (2011), this bias may relate to underlying difficulty in processing new knowledge. When complex data are presented to people, they might face with mental stress. It is easy to simply stick to their previous belief under this condition.

Conservatism bias causes investors to show an insufficient reaction to new information because they tend to insist on an opinion or prediction which is related to their own opinions. As a result of this, they react slowly to new information. For example, individuals who are exposed to conservatism bias adhere to their past earnings predictions regardless of the detailed content of earnings announcements or other public statements (Montier, 2002a). This result was supported by Noori (2016), who found that information about the company earnings announcement might be ignored due to the effect of conservatism bias.

Representativeness

People adhere to a number of cognitive shortcuts when assessing probabilities or predicting values. According to Tversky and Kahneman (1974), these shortcuts are useful, but sometimes they cause serious and systematic errors. The shortcut of representation is a cognitive criterion in which people evaluate possibilities by considering how A represents B. That is, how A is similar to B. This can be seen in the Tversky and Kahneman (1983) research.

Sample size neglect is the tendency for people to quickly conclude the event based on an insufficient number of data when they do not know the data-generating process. In cases where people know the process of generating data, the law of small numbers causes the result of gambler's fallacy (Barberis and Thaler, 2003). According to Tversky and Kahneman (1971), the reason for gambler's fallacy is the misinterpretation of the accuracy of the laws of chance. If a coin throw results around five times in heads, people will think that heads have already been thrown many times, so this time, tails should be thrown (Barberis and Thaler, 2003). This idea is supported by Nofsinger (2004), and this hypothesis is implemented in financial markets. Investors often mistakenly believe that the past performances of firms are representative of their future performance and ignore the data that contradicts with this belief. In reality, bad companies do not always perform poorly, and good companies do not always perform well.

Framing

Framing is a tendency of decision-makers to respond to different situations in different ways, depending on the circumstances in which the options are presented (Pompian, 2011). According to Tversky and Kahneman (1981), framing is the way a decision-maker perceives the possibilities, outputs, and facts associated with a particular choice. The framing accepted by the decision-maker is partly controlled by the norms, habits, and personal characteristics of the decision-maker, which formulate the problem.

It is observed that people tend to avoid risk if the presented option highlights the gain and if it is in a positive frame. In addition to this, if the option is in a negative frame that highlights the losses, people tend to seek risk. The framing is a strong bias observed in decision-making tasks. The framing bias is a part and weakness of human nature. However, although there is a strong cognitive bias, there are studies in the literature showing that certain factors weaken the framing bias such as personality, age, emotions (Sahin, 2018).

According to Rabin (1998), an important and predictable effect of framing on choices is related to loss aversion and diminishing sensitivity. A frame that emphasises losses makes it less attractive because individuals are more sensitive to losses than earnings. Similarly, presenting a small loss can be more attractive for decision-makers. Generally, there is a possibility that a particular decision or problem can be affected by more than one framing.

Categorisation

Individuals tend to see the world through categories such as whether economies are in crisis or not, whether businesses are services or manufacturers, whether bonds are investment-grade or junk, whether they are a student or not. According to Kruger *et al*. (2012), categories always exist because an individual's memory is limited.

Classification can be defined as separating objects into general groups and ignoring the differences between members of the same group. It may be dangerous if members of the same group differ from each other in significant ways (Shefrin, 2010). A further definition of categorisation is given by Kruger (2012), who describes the combination of underreaction and overreaction to information. For example, a 5-star restaurant is perceived as a very good restaurant if they keep their 5-star rating, even if the food quality of the restaurant is starting to decline. The food quality is perceived as bad when the restaurant suddenly loses its star. In this example, a slow decline of restaurant quality shows an underreaction from the individuals. The fast deterioration in restaurant quality and losing its star causes an overreaction from the individuals.

Categorisation in the individuals' life can be seen everywhere, such as in finance, labour and product markets with significant consequences. According to Barberis and Shleifer (2003), categorisation bias is quite common in the financial markets as well. When deciding how to allocate a portfolio, many investors divide assets into extensive categories like government bonds and venture capital. The investors fund-share between these categories. Further investigation of categorisation bias in the financial markets has been done by Kruger *et al*. (2012). Some of the firms in the financial sector are perceived as the main and important firms by investors. This kind of categorisation leads to mispricing; therefore, the stock return is miscalculated.

Anchoring

When people are asked to predict an unknown value, they begin by imagining a predetermined initial value in their minds. This is defined as anchoring. The value is corrected either up or down to reflect subsequent information and analysis. According to Pompian (2011), regardless of how the starting anchors are chosen, people make insufficient corrections to their anchors and ultimately produce bias in their final estimates.

Anchoring also affects financial markets. According to Andersen (2010), investors exposed to anchoring are affected by purchase prices or randomly selected price levels or indexes. Anchoring in financial markets causes the selling of valuable assets and holding to undervalue assets. The purchase price serves as an anchor.

The level of anchoring is severely affected by the degree to which the anchor is drawn; the more attention an anchor draws, the more individuals tend to be affected. If an information signal has features that are noticeable or easy to remember, then that information is noticeable and salient. With salience errors, individuals use data and news that are more specific and familiar when making investment decisions. For example, if there is news about a company which is frequently in the media, the shares of that company are preferred over other shares (Montier, 2007).

Availability

Availability is a mental shortcut or practical rule that enables people to predict the possibility of an output based on how familiar it is in their lives. A classic example of the availability shortcut is the tendency of people to predict that shark attacks are more likely to be a cause of death than an aircraft crash. However, the possibility of dying due to an aircraft crash is 30 times higher than shark attacks. The reason for the preference towards shark attacks is that they recall a greater fear for many people, or they get more attention from the media (Pompian, 2011).

Pompian's research was supported by Dervishaj (2018). According to Dervishaj (2018), the risk perception and understanding of risk might be wrong due to availability bias, and it leads to an important impact on decision-making. Also, individuals tend to be affected by what they remember before making decisions. An individual's memory is impacted by all kinds of factors, such as emotions and feelings, expectations and beliefs. Additionally, the media has played an important role in the individual's memory. Rare events are more noticeable to individuals after they occur because the probability of remembering is increasing. For instance, if an individual has a car accident, they are more likely to predict the chance of having another car accident as higher than the average probability. However, individuals are more likely to buy insurance to protect themselves after a natural disaster. It can be said that the individual has resorted to an availability shortcut if the probability of a situation is predicted depending on examples or links related to that situation.

Loss Aversion

The study by Kahneman and Tversky (1979) about prospect theory, has explained loss avoidance by the certainty effect. People give less weight to possible results than the results which have certainty. This is called the certainty effect. Individuals avoid risk in cases with definite earnings and take risks if there are definite losses. This situation, which causes individuals to make different choices when the same option is presented in different ways, is called the reflection effect. In 2018, a similar definition was made by Dervishaj. Loss aversion is defined as a feeling of regret.

According to Dervishaj (2018), individuals tend to underestimate diversification profits and long-term returns and overestimate potential short-term losses under the effects of loss aversion. This bias is due to the negative impact of losses and affects the investors extremely, compared to the positive impact of the same amount of profits. Thus, short-term investments are generally preferred due to the impact of loss aversion. The result of paying more attention to short-term investment has been investigated by the research. As a result of this, investors may ignore negative changes for their short-term investment, even if it is an unusual fluctuation. Therefore, a sufficiently high premium is expected to compensate for their loss aversion.

According to Merkle (2014), experienced and anticipated outcomes have to be distinguished before the evaluation of gains and losses. The balance between anticipated gains and losses is based on the idea of lotteries and gambling. It can be said that individuals are able to predict the impact of gain and loss. The individuals' ability to cope with losses is fairly good. It seems that losses do not hurt individuals as much as they are expected to when experienced.

Pompian's study (2011) attempted to measure the acceptable risk regarding earnings. The earning should be two times larger than the risk. A person who avoids loss may claim a minimum of $2 for every $1 risk. In this scenario, the risk is unacceptable if it does not pay twice the risk. One major drawback of this result is that the income level of individuals should be considered. If the research had split by regarding individuals' income level, a more interesting result might have been obtained.

Methodology

Generally, the survey method was used in the behavioural biases' literature. The survey was classified by Hirshleifer in 2001, but the classification was very complicated. Later, Montier (2007) simplified this complex classification of behavioural biases in terms of financial decisions. Montier's classification is used for this research project because there is not adequate research on behavioural biases of young adults in the literature. The data in this study is the primary data source since it was collected by young adults between the ages of 18-29 in Bristol and Istanbul using a survey method.

In this quantitative research, survey and questionnaire method was used to collect data. The survey questionnaire was created using online survey tools. The survey link was created and shared via mail and social media such as Facebook, Instagram, Twitter in order to collect data from individuals in Bristol and Istanbul. Also, ethical consideration was taken before the circulation of the survey. Firstly, the survey was applied to 10 young adults in Bristol as a pilot study to check the understanding of questionnaires. Questionnaires were printed out and distributed to participants. They were asked to indicate the questions in case of misunderstanding. All participants understood all the questions; thus, the questionnaires were used as it is.

415 young adults from Bristol, UK, and Istanbul answered the survey, and 403 out of 415 surveys received were accepted for the research. Only 2 surveys did not indicate their city, but their surveys were accepted for the research as the rest of the sections in their surveys were completed successfully. Their answers were used to analyse general results which generated the combining participants' answers from Bristol and Istanbul. Their

answers have not been taken into account to examine for Bristol and Istanbul. 12 surveys were not completed, and essential answers for classification in socio-demographic questions were not given.

Montier's (2007) simplified behavioural biases scale was used to compute the behavioural biases score of young adults. Behavioural biases questions cover representativeness, confirmation, hindsight, self-attribution, anchoring, conservatism, over-optimism, availability, cognitive dissonance, framing, illusion of knowledge, illusion of control, categorisation, loss aversion and overconfidence. These topics are common behavioural biases topics among researchers (Kahneman and Tversky, 1981; Nofsinger, 2002; Pompian, 2006; Montier, 2007). Two statements were asked to participants in order to compute the behavioural biases score. The average of the two statements was calculated. The behavioural biases score was computed as the sum of all average scores of the topics. The higher score indicates higher behavioural biases.

Findings

If Cronbach's Alpha is between 0.8 and 0.9, the reliability of research is accepted as good (Kalayci, 2010), and if it is between 0.7 and 0.8, the reliability is acceptable (Yin, 2003). Table 1 shows the reliability statistics for behavioural biases survey.

Table 1. Reliability Statistics

Variables	Cronbach's Alpha	N of Items
Behavioural Biases	0.851	22

Source: Author created with SPSS 24.

According to Table 1, the reliability of the behavioural biases survey is good because Cronbach's Alpha coefficient is 0.835 and 0.851, respectively.

Analysis of Behavioural Biases

In this section, behavioural biases of young individuals in Bristol and Istanbul were analysed in details. Table 2 shows the behavioural biases score and behavioural biases level of young individuals in Bristol and Istanbul.

Table 2. Behavioural Biases Score and Level in Bristol, UK and Istanbul

Behavioural Biases	Total	High (above average)	Low (below average)
Representativeness	3.6	49.8%	50.2%
Confirmation	4.0	71.8%	28.2%
Hindsight	3.4	53.0%	47.0%
Self-attribution	3.3	44.1%	55.9%
Anchoring	4.0	79.8%	20.0%
Conservatism	4.0	79.5%	20.3%
Over-optimism	4.1	30.0%	69.8%
Availability/Salience/Cue competition	3.9	59.9%	39.9%
Cognitive dissonance	3.6	63.7%	36.1%
Framing	4.4	69.1%	30.7%
Illusion of knowledge	3.9	59.2%	40.6%
Illusion of control	4.0	74.3%	25.5%
Categorisation	4.0	79.5%	20.3%
Loss aversion	4.3	47.8%	52.0%
Overconfidence	3.8	60.4%	39.4%

Source: Author created with SPSS 24.

According to Table 2, the most common behavioural biases among young adults in Bristol and Istanbul are anchoring (79.8% of the participants), conservatism (79.5% of the participants), categorisation (79.5% of the participants), and the illusion of control (74.3% of the participants). In contrast, the least common behavioural biases among participants in Bristol and Istanbul are over-optimism (30.0% of the participants), self-attribution (44.1% of the participants), loss aversion (47.8% of the participants), and representativeness (49.8% of the participants). The highest behavioural bias score belongs to framing bias (4.4), while the lowest behavioural bias score is self-attribution bias (3.3).

When young adults in Bristol and Istanbul try to predict a situation, they imagine a predetermined initial value in their minds. This value is their reference point. They tend to create a reference point based on the first knowledge they have experienced or learned. They analyse the knowledge that comes out later and corrects their estimates up or down. Regardless of how the starting points are chosen, it is seen that they usually correct their estimates insufficiently (Pompian, 2011). This situation leads to the occurrence of conservatism bias as well as anchoring bias (Montier, 2007). Although young adults in Bristol and Istanbul accept new knowledge, they are more dependent on their old views and expectations. For this reason, young adults exhibit underreacts to new knowledge. This situation leads to decision making with biases (Barberis and Thaler, 2002). In addition, young adults in Bristol and Istanbul tend to divide objects into general groups and ignore differences between members of the same group. This bias very common among individuals (Shefrin, 2010). For example, when investing in portfolios, they first divide assets into broad categories such as government bonds and venture capital and then share funds between these categories. At the same time, young adults in Bristol and Istanbul tend to believe they can, or at least affect the results of the events, although they cannot control the results of the events. In other words, young adults tend to believe they have effects on the outcomes of uncontrollable events (Pompian, 2011). For example, although the lottery is entirely dependent on luck, it has been observed that one's perception of the possibility of winning or losing lottery depending on whether he/she chooses the ticket himself/herself or someone else gave it. Individuals who were given a chance to choose a lottery ticket, they behave as if they had control over the lottery result. (Montier, 2007).

Table 3 reveals the behavioural biases level of participants in Bristol.

Table 3. Behavioural Biases Score and Level of Bristol, UK

Behavioural Biases	Bristol, UK	High (above average)	Low (below average)
Representativeness	3.5	64.5%	35.5%
Confirmation	4.0	68.0%	32.0%
Hindsight	3.3	50.2%	49.8%
Self-attribution	3.3	44.3%	55.7%
Anchoring	4.0	76.8%	23.2%
Conservatism	3.9	73.4%	26.6%
Over-optimism	4.0	81.8%	18.2%
Availability/Salience/Cue competition	3.8	55.7%	44.3%
Cognitive dissonance	3.4	59.6%	40.4%
Framing	4.2	66.5%	33.5%
Illusion of knowledge	3.8	53.7%	46.3%
Illusion of control	4.0	70.0%	30.0%
Categorisation	4.0	76.8%	23.2%
Loss aversion	4.2	44.8%	55.2%
Overconfidence	3.7	55.7%	44.3%

Source: Author created with SPSS 24.

According to Table 3, over-optimism (81.8% of the participants), anchoring (76.8% of the participants), categorisation (76.8% of the participants) and conservatism (73.4% of the participants) are the most common behavioural biases for participants in Bristol. However, self-attribution (44.3% of the participants), loss aversion (44.8% of the participants), hindsight (50.2% of the participants), cue competition (55.7% of the participants) and overconfidence (55.7% of the participants) are less common behavioural biases seen for participants in Bristol. The highest behavioural biases score in Bristol belongs to framing and loss aversion biases (both score 4.2) while the lowest behavioural bias score belongs to self-attribution and hindsight biases (both score 3.3).

The most of young adults in Bristol prefer to invest in companies they work with or those operating in the geographic area they live. At the same time, they focus more on promising knowledge about the companies they invest. Because they behave over-optimistically about their companies and their geographical regions (Pompian, 2006). Therefore, the financial decisions they make include biases. At the same time, young adults in Bristol rely heavily on the first knowledge they make when making a decision, and they are influenced by this knowledge in their subsequent decisions. For example, when an adult in Bristol wants to buy a house, the price creates a reference point for that house. If he/she buys this house under the reference point, he/she will be happy. However, the same type of houses can be found in the market much cheaper. Since there is not enough market research, this decision is made with the anchoring bias (Shefrin, 2010). This first knowledge that young adults have learned in Bristol has been their reference point. They may exhibit underreaction to

new knowledge. They adhere more to their old opinions and beliefs (Pompian, 2011). This shows that young adults in Bristol have made decisions with a conservatism bias. At the same time, young adults in Bristol make financial decisions by classifying them in line with their beliefs. They tend to classify their investments as good and bad. A well-classified investment is not evaluated in the bad category immediately after it starts to lose value (Barberis and Shleifer, 2003).

Table 4 shows the behavioural biases levels of participants in Istanbul.

Table 4. Behavioural Biases Score and Level of Istanbul

Behavioural Biases	Istanbul	High (above average)	Low (below average)
Representativeness	3.7	55.1%	44.9%
Confirmation	4.1	35.4%	64.6%
Hindsight	3.5	57.1%	42.9%
Self-attribution	3.2	44.4%	55.6%
Anchoring	4.1	28.3%	71.7%
Conservatism	4.2	32.8%	67.2%
Over-optimism	4.2	34.3%	65.7%
Availability/Salience/Cue competition	3.9	65.2%	34.8%
Cognitive dissonance	3.8	68.7%	31.3%
Framing	4.5	72.7%	27.3%
Illusion of knowledge	4.0	65.7%	34.3%
Illusion of control	4.1	42.4%	57.6%
Categorisation	4.2	39.9%	60.1%
Loss aversion	4.4	51.5%	48.5%
Overconfidence	4.0	66.2%	33.8%

Source: Author created with SPSS 24.

According to Table 4, the most common behavioural biases for participants in Istanbul are framing (72.7% of the participants), cognitive dissonance (68.7% of the participants), the illusion of knowledge (65.7% of the participants) and cue competition (65.2% of the participants). However, the less common behavioural biases seen for participants in Istanbul are anchoring (28.3% of the participants), conservatism (32.8% of the participants), over-optimism (34.3% of the participants) and confirmation (35.4% of the participants). The highest behavioural bias score in Istanbul belongs to framing bias (4.5), while the lowest behavioural bias score is for self-attribution bias (3.2).

Young adults in Istanbul tend to respond to different situations in different ways, depending on the circumstances under which the option is offered. They are more sensitive to losses than to earnings. Therefore, the situation presented in a frame that emphasizes the losses does not make attractive to them. The same option becomes more attractive when the earning is highlighted (Shefrin, 2010). In short, the presentation of events affects the way in which young people in Istanbul perceive the outputs and facts. At the same time, young adults in Istanbul feel uncomfortable when they learn new information contradicts with the previous ones. For example, they know that smoking causes lung cancer and heart disease, but they want to live long. At this point, smoking and willingness of long living contradict with each other since smoking makes life shorter. However, they justify smoking because they reduce stress (Pompian, 2011). Therefore, young adults in Istanbul can change their thoughts to justify their past actions. Young adults in Istanbul believe that the accuracy of their predictions will increase with more knowledge. So, they want to know more than anyone knows. In reality, however, individuals make the same decision regardless of the amount of knowledge they have. Every learned knowledge reinforces the sense of trust of individuals (Montier, 2007). Young adults in Istanbul consider the more noticeable clues when making decisions and ignore less noticeable ones. In other words, among the many variables that may be related to the decision, not the right one, but the more obvious one has been chosen. At the same time, young adults in Istanbul can choose to invest based on their feelings rather than the right one (Oran, 2008).

Conclusion

Behavioural biases that influence the financial decisions of individuals play an important role in this process. Anchoring, conservatism, categorisation, and illusion of control are common behavioural biases among young adults in Bristol and Istanbul. When young adults in Bristol and Istanbul attempt to forecast a situation, they imagine a predetermined initial value in their minds. This value is called as their reference point. This value is their point of reference. Based on the first knowledge they have learned or gained, they tend to establish a

reference point. They analyse the knowledge that comes out later and adjusts their estimates up or down. Regardless of how the starting points are picked, it is seen that their calculations are generally insufficient (Pompian, 2011). This condition contributes to both conservatism and anchoring bias occurring (Montier, 2007). While new knowledge is adopted by young adults in Bristol and Istanbul, they are more relying on their old views and expectations. For this reason, young adults indicate that they are unresponsive to new knowledge. This scenario leads to biased decision making (Barberis and Thaler, 2002). Furthermore, young adults prefer to divide concepts into general groups in Bristol and Istanbul and dismiss differences between members of the same group. This bias is very common among individuals (Shefrin, 2010). At the same time, in Bristol and Istanbul, young adults tend to believe that they can, or at least have an effect on, the outcomes of events, while they cannot influence the outcomes of events. Young people, in other words, tend to believe that they have effects on the consequences of uncontrollable events (Pompian, 2011).

Anchoring, categorisation and conservatism are common behavioural biases among young adults in Bristol. In Bristol, most young adults may prefer to invest in businesses they work with or operate in the regional region in which they live since they are over-optimistic about their businesses and their geographical regions (Pompian, 2006). Biases are therefore included in the financial decisions they make. At the same time, in Bristol, young adults rely heavily on the first knowledge they obtain when making a decision, and in their subsequent decisions, they are influenced by this knowledge. For instance, when young adults want to buy a house in Bristol, the price provides a reference point for that house. They may be satisfied if they purchase this house under the reference point. However, the same type of houses could be found in the market much cheaper. As there is not enough market research, this decision includes the anchoring bias. This first knowledge gained by young adults in Bristol was their reference point. They may show an inadequate reaction to new knowledge. They stick to their old views and values more (Pompian, 2011). This shows that young adults have made the decisions in Bristol with a conservatism bias. At the same time, young adults in Bristol make their decisions by classifying financial decisions in accordance with their beliefs. Their investments tend to be categorised as good and poor. Immediately after it begins losing value, a well-classified investment is not evaluated in the poor category (Barberis and Shleifer, 2003).

Framing, cognitive dissonance, the illusion of knowledge and availability are the most common behavioural biases among young adults in Istanbul. Depending on the circumstances in which the option is presented, young adults in Istanbul tend to react in various ways to different situations. They are more sensitive to losses than to gains. The condition portrayed in a frame illustrating the losses is therefore not attractive to them. When the advantage is illustrated, the same alternative becomes more attractive (Shefrin, 2010). In short, the presentation of situations influences the way in which young people in Istanbul perceive the outputs and facts. At the same time, in Istanbul, young adults feel uncomfortable when they realize that new knowledge contradicts previous information. Young adults in Istanbul may also amend their thoughts in order to explain their past actions. Istanbul's young adults assume that with more experience, the accuracy of their forecasts will improve. So, they want more to know than anyone knows. In fact, however, regardless of the amount of information they have, individuals make the same decision. The sense of confidence of individuals is enhanced by any acquired understanding (Montier, 2007). When making decisions, young adults in Istanbul recognise the more obvious hints and ignore less obvious ones. In other terms, not the right one has been selected, but the more obvious one, among the several variables that could be linked to the decision. At the same time, Istanbul's young adults can opt to invest based on their emotions rather than the right ones (Oran, 2008).

Recommendations for young adults to improve their decision-making process:

➢   First, individuals should be aware of their behavioural biases. They should focus on data instead of stories to avoid behavioural biases. It is not easy to get a data-driven perspective and a data-driven process, as individuals often tend to adapt stories that support their beliefs.

➢   Individuals generally adopt views that fit their own views and opinions. To get rid of this bias, they should look for results and data that conflict with their opinions.

➢   Individuals should consider any criticism about their biases. They can develop an accountability mechanism based on the criticisms made. Accountability is more successful in a reliable, cautious, transparent, and clearly specified mechanism when it is part of it.

➢   Individuals attribute bad results to bad luck and good results to skill. Thus, they should focus on the process. Individuals, no matter how well their focus is on the process, should also assume that they have made mistakes and work actively to find them, by testing and confirming everything possible.

➤ Understanding a contrasting viewpoint and also appreciating it helps our own thought and can have a good influence over the accuracy of our own viewpoint.

➤ People tend to spread their successes and underestimate their losses, so they need to pursue their mistakes as closely as their success.

➤ They should make choices without haste, no matter how successful and experienced people are.

➤ Individuals should be aware of the fact that our emotions may influence our decisions in order to avoid the negative effects of heuristics. When they face with decisions, they should think more logically about choices and all possible options by taking time.

➤ A systematic review process may be developed by the individuals. This may help them to reduce their behavioural biases.

➤ They can re-frame or flip the problem if they view the situation in either a positive or negative framework.

➤ Individuals may consider different opinions that contradict their opinions to reduce their overconfidence.

References

1. Andersen, J.V. (2010). Detecting anchoring in financial markets. *Journal of Behavioral Finance*, *11*(2), 129-133. [Link]

2. Baker, H.K. and Nofsinger, J.R. (2002). Psychological biases of investors. *Financial services review*, *11*(2), 97. [Link]

3. Barber, B.M. and Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *The quarterly journal of economics*, *116*(1), 261-292. [Link]

4. Barberis, N. and Thaler, R. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053-1128. [Link]

5. Bukszar, E. and Connolly, T. (1988). Hindsight bias and strategic choice: Some problems in learning from experience. *Academy of Management Journal*, *31*(3), 628-641. [Link]

6. Dervishaj, B., 2018. Psychological Biases, Main Factors of Financial Behaviour-A Literature Review. *European Journal of Medicine and Natural Sciences*, *2*(2), 54-64. [Link]

7. Gervais, S. and Odean, T. (2001). Learning to be overconfident. *Review of financial studies*. [Link]

8. Goetzmann, W.N. and Peles, N. (1997). Cognitive dissonance and mutual fund investors. *Journal of financial Research*, *20*(2), 145-158. [Link]

9. Hirshleifer, D. (2001). Investor psychology and asset pricing. *The journal of Finance*, *56*(4), 1533-1597. [Link]

10. Hoffmann, A.O. and Post, T. (2014). Self-attribution bias in consumer financial decision-making: How investment returns affect individuals' belief in skill. *Journal of Behavioral and Experimental Economics*, 52, 23-28. [Link]

11. Kahneman, D. and Riepe, M.W. (1998). Aspects of investor psychology. *Journal of portfolio management*, *24*(4), 52. [Google Scholar]

12. Kruger, P., Landier, A. and Thesmar, D. (2012). Categorization bias in the stock market. *Catolica Lisbon, school of business and economics*. [Link]

13. Langer, E.J. (1975). The illusion of control. *Journal of personality and social psychology*, *32*(2), 311. [Link]

14. Merkle, C. (2014). Financial Loss Aversion Illusion. *American Economic Association*. [Google Scholar]

15. Montier, J. (2007). B*ehavioural Investing: A Practitioner's Guide to Applying Behavioural Finance*, ISBN: 978-0-470-51670-6. [Link]

16.   Nofsinger, J. R. (2004). *The Psychology of Investing*. New Jersey: Prentice Hall. [Google Scholar]

17.   Noori, M. (2016). Cognitive reflection as a predictor of susceptibility to behavioral anomalies. *Judgment and Decision Making*, *11*(1), 114. [Link]

18.   Pompian, M. (2006). Behavioural Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases. New Jersey: John Wiley & Sons. [Link]

19.   Pompian, M.M. (2011). Behavioral finance and wealth management: how to build investment strategies that account for investor biases, 667, John Wiley & Sons. [Link]

20.   Puri, M. and Robinson, D.T. (2007). Optimism and economic choice. *Journal of financial economics*, *86*(1), 71-99. [Link]

21.   Rabin, M. (2002). Inference by believers in the law of small numbers. *The Quarterly Journal of Economics*, *117*(3), 775-816. [Google Scholar]

22.   Rappaport, A. and Mauboussin, M. J. (2001). Pitfalls to Avoid. *Supplement to Expectations Investing*. 1-7. [Link]

23.   Sahin, M. and Baris, S. (2017). Finansal okuryazarlık ve tasarruf davranışları: Kamu çalışanları üzerine bir inceleme. *Çankırı Karatekin Üniversitesi, İİBF Dergisi* [Financial literacy and saving behaviors: A review on public employees. Çankırı Karatekin University, *Journal of FEAS*], *7*(2), 77-103. [Link]

24.   Shefrin, H. (2002). Behavioral decision making, forecasting, game theory, and role-play. *International journal of forecasting*, *18*(3), 375-382. [Link]

25.   Shefrin, H. (2010). Behaviouralizing Finance, Foundations and Trends in Finance. USA: Now Publishers Inc. [Google Scholar]

26.   Tversky, A. and Kahneman, D. (1971). Belief in the Law of Small Numbers. *Psychological Bulletin*. *76*(2), 105-110. [Link]

27.   Tversky, A. and Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. Science. *185*(4157), 1124-1131. [Google Scholar]

28.   Tversky, A. and Kahneman, D., 1981. The framing of decisions and the psychology of choice. *science*, *211*(4481), 453-458. [Link]

29.   Tversky, A. and Kahneman, D. (1983). Extensional Versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment. *Psychological Review*. *90*(4), 293-315. [Link]

30.   Yin, R. K. (2003). *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage. [Link]