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The role of emotional intelligence in the relationship between framing effects, financial anxiety and financial literacy

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Abstract

People are confronted with financial decisions on a daily basis, and very often this can significantly affect their current and future financial stability. Globalization and modern technology has made it possible for people to have wider access to unlimited information and choices of financial products. If a person is not equipped with sufficient financial knowledge, diverse and complex financial information can lead to cognitive overload and susceptibility to biases such as framing effects, thereby resulting in unhealthy financial decisions. Although the link between financial literacy (FL) and financial anxiety (FA) is well established, the critical role of trait emotional intelligence (TEI) in this relationship has been poorly represented in contemporary literature. Given the volatile nature in the global economy in the post pandemic era, exploring these concepts becomes more important than ever. The overall objective of this research was to investigate the role of trait emotional intelligence in the relationship between framing effects, financial anxiety and financial literacy. Testing with the use of an online survey was done in South Africa with a total of 200 Finance and Economic students from the Department of Economics and Finance at the University of the Free State. Two conditions of differently framed financial information (simple versus complex) were randomized among participants, including measuring instruments of financial literacy, financial anxiety and trait EI. The main findings suggested that TEI is positively correlated with FL and negatively correlated with FA. Willingness to explain information to others mediated the effect between type of condition and financial choice. This was specifically relevant in the condition with complex financial information. Clarity of information mediated financial literacy. Lastly, gender effects interacted with the effects of the condition, financial anxiety, financial literacy and TEI. FL and FA were associated with choice more among males whereas TEI predicted choice among females. To encourage more healthy financial decision making among people the incorporation of emotional intelligence skills training in financial education programmes are strongly recommended.

Keywords: dual process theory, framing effects, financial anxiety, financial literacy, trait EI

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CHAPTER 1

INTRODUCTION

1.1   Research area and problem

One of the main objectives of Sustainable Development Goals (SDGs) as set out by the United Nations (UN), is to promote economic growth and productivity among people (United Nations, 2018). A vital element identified to achieve this goal is to encourage financial literacy, through financial education. The Organization for Economic Co-operation and Development (OECD, 2020) views financial literacy as an essential 21st century skill, necessitated by the fluctuation of financial markets, employment uncertainty and unpredictable global events. It is surprising that poor levels of financial literacy continue to be reported among countries worldwide warranting research to explore cognitive, emotional and social factors to better understand this continued challenge. Financial literacy has been found to influence the ability of individuals to process economic and financial information (Xu et al. 2022). To this effect, Klapper and Lusardi (2020) raised concern that challenges in low financial literacy are associated with an individual's understanding of financial products, capacity to obtain more information and to seek independent advice in order to make informed decisions.

A core feature of financial decision making is the way the human mind processes information. Dual process theories distinguish between intuitive, deliberate, and heuristics as different modes of thinking that can be activated in individuals' reasoning about personal financial matters (Kahneman, 2011). A heuristic belonging to the intuitive System 1 and

influenced strongly by emotional states, is framing effects. Framing effects is a cognitive bias leading people to alter their decisions from a set of options based more by how the information is worded than by the information itself (Kahneman & Tversky, 1979). Negative emotions such as fear and anger have been connected to heighten a person's susceptibility to framing effects compared to positive emotions (Cassotti et al., 2012). Individuals with financial anxiety display more intuitive based decision making (Rieger, 2020), reaction latencies in the processing of financial information (Shapiro & Burchell, 2012) and reduced tendencies to seek additional information in order to assist effective decision making (Soane et al., 2015). In addition, behavioral outcomes of being overly anxious about one's personal finances can range from excessive financial avoidance (Klontz et al., 2011) to impulsivity (Xia et. al., 2017).

For the above reasons, the ability to effectively recognize and regulate one's emotional state due to financial anxiety can be expected to have a major impact on making better financial decisions and to gain financial knowledge. The term "trait emotional intelligence" (trait EI) refers to emotional dispositions in terms of perceiving, understanding, managing, and utilizing one's own emotions and that of other people (Petrides et al., 2018). High trait EI has been positively connected with improved emotional awareness, regulation of emotions, more objectivity and less impulsivity in making financial decisions (Bucciol et al., 2020; Hess & Bacigalupo, 2011). Hence, it can be assumed a person's trait EI can influence framing effects, financial anxiety and financial literacy.

The majority of trait EI studies have been based on WEIRD (western, educated, industrialized, rich and democratic) samples relying on an inherent bias that generalizations can be made regarding individuals' emotions, cognitions and motivations (Pérez-Díaz et al., 2022).

Therefore, there exists a gap in research within the South African context to contribute to the body of knowledge in the field of financial decision making.

1.2   Research context and Motivation for study

This study was conducted in South Africa and focus mainly on gaining responses from a sample of a student population. South Africa, with a population of 60.6 million people is regarded as one of the most developed economies in Africa (Statistics South Africa (StatsSA), 2022; Wentzel, 2016). Economic growth in South Africa has been challenged due to its historical socio-political landscape created by the policies of Apartheid that led to multiple inequalities among the different gender and racial groups. Even though there have been advancements to close the inequality gaps, South Africa continues to struggle with high levels of poverty, wealth inequality and unemployment (Ramavhea et al., 2017; Wentzel, 2016). Moreover, policies and programmes to enhance people's level of financial knowledge have only been actively promoted since 2004 (Wentzel, 2016).

Worldwide, low financial literacy levels among students are receiving attention due to the impact it has on healthy financial decision-making as future economic productive citizens. Research has indicated that young people (aged 18-29) have low financial literacy levels and less prudent financial behavior (OECD, 2020). "Non literacy" in personal finances have been associated with overspending, credit card overuse, debt increase and playing multiple lotteries (Lusardi & Mitchell, 2014; OECD, 2020).

In South Africa, poor financial literacy levels among students are linked with deficits in financial knowledge related to terms of banking, taxation, financial planning, interest rates and general inflation (Ramavhea et al., 2017). Most students are financially dependent on their parents and macroeconomic uncertainty has shown to lengthen this dependence on parents for continued financial support (Fingerman et al., 2016). This can create a challenge to set a good foundation for healthy money management such as planning, budgeting and saving - which forms critical aspects for long term financial stability and well-being.

Tertiary education fees have increased substantially in South Africa, and anxiety related to financial challenges is cited as one of the main causes of the high dropout rate (50%-60%) among first year students- which adds to the existing alarming high rate of unemployment among the South African youth (Alenda-Demoutiez & Mügge, 2020). To assist lower income families to gain access to tertiary universities, the South African government introduced a student loan and bursary scheme i.e National Student Financial Aid Scheme (NSFAS) in 2013. This loan covers costs such as tuition fees, accommodation costs, food, books, and travel. In turn, students and their families are responsible to repay the loan upon completion of studies. Whilst, the main purpose of this scheme is to alleviate financial stress on parents, it inevitably leads to increased student debt (Ramavhea et al., 2017).

Exploring the concept of financial literacy and other psychological influences among this population is important and forms the motivation for focusing on students for this study. As young adults they find themselves in an unique transition period of completing their education and establishing a career so moving towards more financial self-sufficiency is vital.

There have been limited studies on financial literacy among South African students as research has mainly focused on the general population (Ramavhea et al., 2017; Shambare & Rugimbana, 2012). In addition, extant literature shows a gap of research in South Africa, exploring the influence of trait Emotional Intelligence in relation to the effects of framing, financial anxiety and financial literacy among students.

1.3   Purpose of the research

The main objective of this study is to provide a more detailed understanding of the role trait emotional intelligence plays in the relationship between framing effects, financial anxiety and financial literacy. Through exploratory analysis, a further aim is to investigate the effects of demographic variables and how this is moderated by individual differences in financial anxiety, financial literacy, and trait EI.   A meta-analysis by Fernandes et al. (2014) consisting of 201 international studies examined the relationship between financial literacy and financial education on financial behaviors. The researchers found that the promotion of financial education did not solely contribute to the increase in financial literacy and highlighted the need for more research in the field of individual differences and psychosocial variables that can play a potential role (Fernandes et al., 2014).

1.4   Research questions and scope

1.4.1   Research questions

The following research questions were formulated:

1) Are there differences between the way in which financial information is framed as easy or complex on financial choice?

2) Does financial anxiety, financial literacy and Trait EI play a mediating role in the effect of the condition (easy vs. complex information) and financial choice?

1.4.2 Limitations and scope of research

The study was limited to students at the Department of Economics and Finance at the University of the Free State in South Africa. As such the scope of the study may not be representative of other students, but nevertheless provide valuable information to extend it to a larger student population across South Africa. Also, as no such study has been conducted in South Africa it can provide fertile ground for future studies.

The data collection was completed through an online survey which could place limits on collection and validity of data due to issues of response rate, non-respondent characteristics and lack of direct supervision in the implementation and evaluation of the survey (Nayak & Narayan, 2019. However, the advantages of utilizing online surveys include being user-friendly and cost-effective as it allows easy, quick access for participants via their smartphones or computers in flexible hours. In addition, researcher time and effort is saved as online surveys make it more convenient to acquire automated data (Mertler & Vannatta, 2016; Nayak & Narayan, 2019).

The use of self-report measures in this study is highly subjective and may vary from individual to individual. For this reason, the assessment tools and data analysis process must be robust enough to absorb this.

1.5 Significance of the research

This study aims to contribute to the field of Behavioral Economics in several ways. First, it will expand on existing knowledge in regards to the relationship between framing effects (FE), financial anxiety (FA) and financial literacy (FL). Second, this research complements prior literature on financial anxiety and financial literacy by focusing on a noncognitive construct and personality trait such as trait EI. Given the dire financial climate globally, and strain that this places on individuals, alternative sources need to be identified that will better equip people to make healthy financial decisions. This is supported by a meta analysis (Fernandes et al., 2014) that showed the promotion of financial education added to the increase in financial literacy among people only for a limited period.

If trait EI is shown to play a significant role, it can have implications for financial education programmes to incorporate EI skills. EI skills can assist with the regulation of emotions associated with financial anxiety, thereby improving the ability to learn financial knowledge and improve the quality of decision making. Lastly, the inclusion of possible socio-demographic factors such as gender, age, household income and education level will add value to possible observed individual differences.

1.6 Research assumptions

The understanding of the questions, their phrasing and the concepts captured in the survey is an aspect that could impact on the success of the research. Taking this into consideration, existing questionnaires were used and elements selected for purposes of the study.

A pilot (trial) survey was conducted on the framing conditions and related response items to clear out any challenges before formal testing commenced.

1.7   Research Ethics

Care was taken to adhere to the ethical standards as captured within the Department of Psychology Ethics Board at the University of Padova. Ethical approval was obtained with the following ethics clearance number EDBE18832AF048F7F7314CB084E6290A. Participation of the students in the online survey were voluntary, anonymous and confidential. Informed consent was obtained prior to the survey in conjunction with a debriefing consent after the survey was completed.

CHAPTER 2

LITERATURE REVIEW

The purpose of this chapter is to provide further background and a review on the elements comprising the conceptual framework in this study. In this review, two theoretical frameworks namely, Behavioral Economics and Dual Process Theory are referred to. This chapter describes in detail, the current literature about framing effects, financial literacy, financial anxiety and trait Emotional Intelligence. In addition, the review also introduces other variables and concepts that provide a basis for the methodological approach used in this study.

2.1   Behavioral Economics: *"Homo economicus" versus "Homo sapiens"*

For years, traditional economic models dominated the field of describing the economic decisions of people. The rational choice theory, originated as early as the 18th century with Adam Smith, known as the father of modern economy, who in his book *"An Inquiry into the Nature and Causes of the Wealth of Nations"* (1776), postulated that people are rational, capable of perfect self-control, make no mistakes and base decisions solely on a cost-benefit analysis. The term, *homo economicus*, or economic "man" became a relied upon term to maintain the assumption that people are not only rational, but also self-interest that attempt to maximize their utility for both monetary and non-monetary gains (Urbina & Ruiz-Villaverde, 2019).

However, history and various economic crises over the past years, have proved that the theory of the *homo economicus* is flawed, prompting theories to view people as mere *homo*

sapiens, i.e., ordinary humans (Thaler, 2016). More specifically, the emergence of the field

Behavioral Economics challenged the traditional economic theories, emphasizing the role of

psychology in economic decision making and successfully integrating a behavioral approach

with other social sciences disciplines (Thaler, 2016).

Behavioral Economics was kickstarted in the 1950's, by the Nobel laureate Herbert

Simon (1978), who criticized rational choice theory and proposed the theory of bounded

rationality. This theory posited that people are not always capable of obtaining all the knowledge

or information needed to make the best possible decisions (Simon, 1956). The term "Behavioral

Economics" only received its rightful place in 1979, with the publication of a landmark study by

Daniel Kahenman and Amos Tversky named "*Prospect Theory: An Analysis of Decision under*

Risk". Based on research concerning people's attitudes towards risks related with gains versus

losses, they found that people are not always self-interested or focused only on maximizing

benefits and minimizing costs (Kahneman & Tversky, 1979). In the past three decades numerous

seminal studies clearly indicated that people are subject to be influenced by emotions,

environmental context and individual tendencies in which information is processed (Camerer,

1999; Kahneman & Frederick, 2005 ; 2007). This has led to exploration of how decisions are

made based on emotional-and cognitive processes, now widely known as the dual process theory.

2.2   Dual Process Theory: System 1 and System 2 thinking

In order to make important decisions on a daily basis, people face vast amounts of

information in their environment that requires the brain to infer information and interpret the

different situations (Evans & Stanovich, 2013). To increase understanding of how decisions can

be driven, dual-process theories posited the idea that decisions are driven by both intuitive or

emotive- and cognitive processes (Evans, 2008; Stanovich & West, 2002). Since its introduction, dual-process theories have been studied in various disciplines such as social psychology, learning and social cognition; all underscoring the same principles that there are two distinguishable processing mechanisms involved (Evans & Stanovich, 2013; Stanovich & West, 2002). Based on research by Kahneman & Frederick (2005; 2007) and later his best-selling book, "*Thinking, Fast and Slow*", Kahneman (2011) proposed the dual process theory in economic decision making. Kahneman (2011) adopted similar terminology from Stanovich and West (2002) referring to a System 1 and System 2 mode of thinking, each with its own unique features. System 1 is intuitive, automatic, non-conscious and irrational, whilst System 2 is the process characterized as analytical, deliberative, conscious and rational. The intuitive system is fast, uses heuristics or "mental shortcuts" to reach quick conclusions as it does not require much cognitive effort (Kahneman, 2011; Soane et al., 2015). In contrast, the analytic, slower system requires voluntary action to direct attention towards demanding mental activities and is associated with logical reasoning (Kahneman, 2011; Stanovich & West, 2002).

In recent years, advances in neurosciences based on neuroimaging data and neuropsychological tests support the dual process mechanisms in financial decisions (Camerer et al. 2005; McClure et al. 2004; Sanfey et al., 2006), for example, McClure et al., (2004) reported distinct neurological systems connected with monetary decisions based on immediate or delayed rewards. The researchers found that delayed rewards, which is the mental simulation of future possibilities, relied on System 2 or analytical, deliberative processing (McClure et al., 2004). According to Gronchi and Giovannelli (2018) the activity of the Default Mode Network (DMN), characterized by higher activity levels when a person is awake and involved in mental processes

requiring low attentional demands, provides a neural basis for fast, effortless thinking known as System 1.

Although the two systems ascribe to different information processes with distinct neural activities, it is important to note that the optimal interaction between these two systems allows people to save cognitive energy whilst optimizing decision making (McElroy & Seta, 2003; Stanovich & West, 2002). In most cases, the "slower or lazy" analytic system accepts the inferences made by the intuitive system with no apparent negative results. In turn, relying mostly on perceptions and emotions, the intuitive system is prone to many biases and errors (Kahneman, 2011; Stanovich & West, 2002). One of the most robust biases in human decision making is the violation of the principle of description invariance, which stipulates that different descriptions of the same choice options influences decision makers and yield contrasting preferences (Tversky & Kahneman, 1981). This violation has become known to lead to framing effects that will be discussed below (Tversky & Kahneman, 1981).

2.3   Framing effects

Framing effects refer to the cognitive bias of individuals to alter their decisions from a set of options which is influenced more by how the information is worded, than by the information itself (Shiloh et al., 2002; Kahneman & Frederick 2002; 2005; Tversky & Kahneman 1981). Based on prospect theory (Kahneman & Tversky, 1979). Framing effects have been originally linked with research in risk perception and choice architecture, in order words how people perceive risk when a choice is framed as either a gain or a loss. Since the inception of the well known Asian disease problem to illustrate the effect of framing (Kahneman & Tversky, 1979), several studies have extended it to other economic-, consumer- and health decision-making

processes (Diacon & Hasseldine, 2007; Gong et al., 2013; Meyerowitz & Chaiken, 1987; Sanford et al., 2002). In this regard, the majority of people display risk averse behavior when choice is framed as a gain or benefit, compared to increased risk seeking behavior when the exact same choice is framed as a loss or cost (Costa et al., 2021). This is largely the result of people being influenced by their emotions induced by the different frames (Pu et al., 2017). As support, neuroimaging data linked framing effects with a strong emotional response as reflected in amygdala activity, in comparison to increased orbitofrontal- and medial prefrontal activity associated with less susceptibility biases (De Martino et al., 2006). This finding further supports Kahneman's dual process theory (2011) that framing effects is an affective heuristic information processing belonging to the intuitive System 1 (Gonzalez et al., 2005; De Martino et al., 2006; Whitney et al., 2009).

There are also different types of framing effects that can occur. Levin et al. (1998) explored framing effects and made a distinction between three types, namely; attribute framing, risky choice framing and goal framing. Attribute framing refers to the manipulation of a specific characteristic of a subject. The influence on people's willingness to take risks is called risky choice framing and lastly, in goal framing the impact of persuasive information on outcomes of peoples' behavior is the main feature (Levin et al., 1998).

Demographic studies have reported individual differences among age- and gender groups and susceptibility to framing effects, although findings were very dependent on the type of framing effects used and in which contexts the studies were conducted (McElhoe, 2019). In a literature review by McElhoe (2019), age differences and susceptibility to framing effects were found to be influenced by cognitive maturity, but was not consistently demonstrated (Weller et

al., 2011). In a study, consisting of a monetary gambling task, Mikels et al. (2011) found younger adults were more risk seeking in loss frame trials than their older counterparts. Yet, in another earlier study using a "fatal disease" problem, the older adults were more prone to framing effects (Kim et al., 2005). Concerning gender differences, women tend to be more susceptible to framing effects, risk averse and less confident in their financial choices compared to men (Graham et al., 2002; Rau, 2014). However, Huang and Wang (2010) found more variability depending on the task domain and manner in which male and female opportunity sets are framed.

From a financial domain, the manner in which financially equivalent information is framed as simple or complex can change the persons' capacity to process the information, altering their choices and behavior (Lewis & Messy, 2012; Rodrigues et al., 2019). Due to economic globalization, there is a growing pressure on people to make financial evaluations and decisions that will affect their lives in the short-and long term. Additionally, modern technology has made it possible for people to have wider access to unlimited information and choices of financial products (Lewis & Messy, 2012). On the one hand, it has been shown to increase informed decision-making, however financial products-and information has become too diverse and complex leading to too many choices (Lewis & Messy, 2012). This also requires higher cognitive energy to obtain and evaluate the relevant information (Agnew & Szykman, 2005; Iyengar & Kamenica, 2010). Hence, it is argued that framing effects will be more prevalent as its primary goal is to minimize the cognitive effort related with the complexity of presented information (Whitney et al., 2009). Moreover, in line with dual process theory assumptions, framing effects can be minimized by cognitive appraisal (Miu & Crisan, 2011) and engagement

to information in a more analytical and deliberative approach (i.e. System 2), thereby increasing effective decision making (Thomas & Millar, 2012).

One important consideration in a people's susceptibility to framing effects, recognizes the role emotions play, such as; happiness, fear (anxiety) and anger (Lerner & Keltner, 2001; Cassotti et al., 2012). Positive emotions such as happiness were found to significantly mitigate framing effects by decreasing risk propensity in a loss frame (Cassotti et al. 2012). In comparison, negative emotions such as fear or anxiety made people more risk averse (Cassotti et al., 2012). This brings about the need to explore whether framing effects are correlated with an emotional factor, such as financial anxiety, and the effects it can have on a person's ability to make healthy financial decisions.

2.4   Financial anxiety

Anxiety about finances is a major concern for many people worldwide. With the growing burden of rising inflation, living costs and debt, people are increasingly experiencing worry about their personal financial matters (Caron, C. "I'm Always Worrying: The Emotional Toll of Financial Stress", The New York Times, 25 July 2022). Despite the Covid pandemic and its huge economic impact on a global scale, a study based in England, found the majority of the population (38%) are more worried about their finances compared to those being afraid to contract Covid (Fancourt et al., 2020).

Being worried about one's personal finances in the short term, can be normal and functional, however an ongoing fear can lead to an incapacitating financial anxiety. The negative effect of financial worries and anxiety has been significantly linked with various mental health

disorders, such as depression, anxiety disorders and substance abuse/dependence as well as decreased financial well-being (Gerrans et al., 2014; Jenkins et al., 2008; Shapiro & Burchell, 2012; Summer & Gutierrez, 2018). Archuleta et al. (2013) found that financial anxiety can appear in a similar way than generalized anxiety disorder (GAD), which may negatively impair one's aptness to engage in effective financial planning. The long term effects of financial anxiety reveals a bi-directional relationship between financial anxiety, alcohol dependence and a deterioration in financial situation over time, as well as a negative influence on retirement savings contributions, regardless of the presence of strong financial- goals and motivation (Neukam & Hersey, 2003; Richardson et al., 2017). Despite the clear negative consequences of financial anxiety, there still exists a scarcity of knowledge regarding the psychological mechanisms of anxiety and its effects on personal financial management (Magwegwe et al., 2020; Shapiro & Burchell, 2012).

According to Shapiro and Burchell (2012) financial anxiety refers to the "anxious disposition toward cognitive engagement with one's personal finances" (p.3). This can include persistent worry, fear or unease and have been shown to be a separate construct from depression and general anxiety (Shapiro & Burchell, 2012). The same researchers indicated that self-reported financial anxiety significantly correlated with implicit measures of anxiety such as the Emotional Stroop Test and Dot-Probe Paradigm, thereby increasing the validity of measuring the presence of both intuitive- and conscious emotional anxiety (Shapiro & Burchell, 2012).

In the neurosciences, strong emotional responses such as anxiety and chronic stress was found to alter a person's brain function with an increased release of the stress hormone cortisol, which amplifies risk aversion (Kandasamy et al., 2014), psychological stress (Ryu & Fan, 2022)

and suboptimal financial decisions (Ackert et al., 2003). This is a remarkable change from original neurobiological studies by Damasio (1999) that found inferior decisions are the cause of the absence of emotions. In support of the impact of financial anxiety on brain function, Barnett and researchers at ThinkAlike Laboratories (2017) conducted a Brain on Finance study, which revealed the attentional demand during difficult or stressful financial information processing among participants was higher (20%), when no assistance was provided in financial scenarios compared to assisted scenarios.

Examining the prevalence of financial anxiety among heterogeneous demographic and socio-economic profiles is an important consideration highlighted in research. In a national study conducted by Hasler et al. (2021), high levels of financial anxiety and stress were expressed by most of the general population, with the greatest levels of anxiety and stress reported by young adults, women, individuals that are single, unemployed, have a lower income and people with more financially dependent children (Hasler et al., 2021). A recent systematic review indicated a positive correlation between financial stress and depression in both high-income and low-and middle-income countries, but is generally stronger among populations with higher prevalence of poverty and low income (Guan et al., 2022).

Some of the main contributing factors strongly correlated with high levels of financial anxiety include; lack of assets, high debt and money management challenges, but cognisance is emphasized of the influence of specific life stages and financial circumstances of people (Hasler et al., 2021), for example; among young adults (ages 21-34) worries consist of inadequate income to cover expenses, student debt, lack of savings, high credit card debt and the ability to become financially independent (Choi et al., 2016). These worries and high levels of anxiety

have been shown to lead to a decrease in academic achievement, higher risk of drop out and lower levels of financial satisfaction (Archuleta et al., 2013; Richardson et al., 2017). Women report more financial anxiety, feel they have too much debt and lack savings than their male counterparts (Hasler et al., 2021). Brougham et al. (2009) identified these differences due to the presence of gender-and financial inequalities (Brougham et al., 2009). In spite of reported age differences in previous studies, the older population has been found to experience increased levels of financial anxiety due to longer life expectancy and more frequent unpredictable economic situations (Litwin & Meir, 2013).

Another factor to consider in financial anxiety is the extent to which it is correlated with the type and amount of financial information a person perceives and processes in order to make financial decisions. Research has shown that people who report having financial anxiety display more intuitive based decision making (Rieger, 2020), reaction latencies in the processing of financial information (Shapiro & Burchell, 2012) and reduced tendencies to seek additional information in order to assist effective decision making (Soane et al., 2015). Outcomes of financial anxiety can range on a continuum from excessive financial avoidance, in order to avoid dealing with distressing thoughts and emotions about one's financial situation (Klontz et al., 2011), to impulsive choices as measured by the presence of delay discounting (Fields et al., 2014, Xia et. al., 2017).

From the above literature, it is clear that the constant presence of a negative emotion, such as financial anxiety can negatively affect important financial decisions. In a recent survey, Hasler et al. (2021) reported that high levels of financial anxiety was positively correlated with lower levels of financial knowledge and strongly linked with lack of retirement planning.

Therefore, the importance of increasing one's financial knowledge or financial literacy, is significant in alleviating financial anxiety (Hassler et al., 2021). In the next section important concepts and research in the field of financial literacy will be discussed.

2.5   Financial literacy

The impact of financial literacy (FL) on economic decision making has become a popular topic among researchers. Since the inception of the concept of financial literacy in the 1960's, it has gained more traction and importance with the global financial crisis in 2008 and subsequent shift to increased digital finance (Lusardi & Mitchell, 2014). Financial literacy is seen as a vital 21th century skill for every person, necessitated by the fluctuation of financial markets, employment uncertainty and unpredictable global events (OECD, 2016). To be a productive economic citizen is central to outcomes of the Sustainable Development Goals (SDGs) of the United Nations (UN), in the strive to end poverty and to reduce inequality (United Nations, 2018). This emphasizes the importance of people to gain more financial knowledge and be included in financial services (Kara et al., 2021).

Huston (2010) and Lusardi and Mitchell (2014) defines financial literacy as a person's ability to process and understand finance information in order to make informed decisions. This concerns personal finance-related matters such as budgeting, saving, investments, debt, and pensions. Research on financial literacy has been diverse in its explanation of the multi-components underscoring financial literacy- including financial knowledge, financial awareness, financial attitude, financial skills, financial experience, financial decisions, etc. (Knoll & Houts, 2012). To date, most scholars agree that financial literacy includes financial knowledge, financial attitudes and behavior (Dewi et al., 2020; Hung et al., 2009). It is worth

noting that in some countries like Canada and the United Kingdom (UK), researchers prefer to use the term "financial capability" which is an expansion of financial literacy and includes; financial knowledge and understanding, financial skills and competence, and financial responsibility (Johnson & Sherraden, 2007)). Both terms make reference to a person's adeptness to understand how money works in terms of financing, and more importantly how to make positive healthy financial decisions (Johnson & Sherraden, 2007). In addition, several studies have found that an objective score to determine a person's level of financial literacy is more reliable, due to people's subjective perception of financial knowledge being higher than the objective performance (OECD, 2016). Financial literacy is widely measured using questions assessing basic knowledge of four fundamental concepts in financial decision-making namely, knowledge of interest rates, interest compounding, inflation, and risk diversification (Klapper et al., 2015).

Financial literacy at its core, is about empowering people to make better informed financial decisions and to become a more productive well-rounded economic citizen. Supporting this notion, financial literacy is significantly connected with improved financial decision making (Grohmann, 2018), financial well-being (Taylor et al., 2009), better financial planning (i.e. budgeting, savings, investment, retirement), wealth accumulation and financial stability (Lusardi & Mitchell, 2007; Singh, 2014; Van Rooij et al., 2012).

Unfortunately, a lack of financial literacy has implications for poor financial decisions such as overspending, consumer debt, credit card overuse, playing multiple lotteries, inadequate planning for retirement and less stock investment and poorer mental health outcomes such as; depression exhibited through learned helplessness, anxiety and substance abuse/dependence

(Lusardi & Mitchell, 2014; Murphy, 2013). Additionally, it was evidenced in a study by Hung et al. (2009) that people with low financial literacy unconsciously make inappropriate financial decisions and have a lower capacity to deal with sudden financial shocks. Other cognitive-and emotional factors related to financial literacy are numeracy and mathematical anxiety (Skagerlund et al., 2018). In this study, the researchers reported that the ability to understand numbers coupled with an absence of mathematical anxiety provides an impetus to attain financial literacy (Skagerlund et al., 2018).

Regardless of the importance of financial literacy and governments' investment in financial education, global surveys paint a continued dismal rate of financial literacy among adults (OECD, 2020). The latest survey revealed that in 2020, most developed and developing countries had a total of 61% under the maximum financial literacy score. The highest score achieved by any country or economy was 71% by Hong Kong, China, to a minimum of 30% for South Africa (OECD, 2020). The survey also reported that people believe that financial information is difficult to find and understand (OECD, 2020).

Not only is the level of financial literacy low worldwide, there exists major discrepancies between age groups, gender, socio-economic status, education level and type of country (developed or developing) (Klapper & Lusardi, 2020). Young people (aged 18-29) appear to have significantly lower financial literacy and less prudent financial behavior (OECD, 2020), whilst parental education and family financial sophistication mitigates the level of financial literacy among this age group significantly (Lusardi & Mitchell, 2009). Women are particularly low on financial literacy, achieving not only lower scores but also opting more for answering "I don't know" on the items (Lusardi & Mitchell, 2014). This has been consistently found

irrespective of whether they are from an advanced or a developing economy (Klapper & Lusardi, 2020; Kokkizil et al., 2017; Lusardi & Mitchell, 2014). Several reasons for gender differences have been explored and even though no single explanation exists, some influential factors mentioned include, economic inequality, type of socialization at home and gender stereotypes causing women to be less confident in making financial calculations and empowered to gain financial information (Bucher-Koenen et al., 2016; Lusardi & Mitchell, 2011; Tinghög et al., 2021). Also, low financial literacy has been reported among individuals with lower education, lower-income, unemployment or presence of mental and/or physical disabilities (Lusardi & Mitchell, 2014).

There has been empirical evidence showing that financial literacy and good financial decisions are situated within System 2 which is responsible for analytical- and rational thinking (Stanovich & West, 2002). Derived from dual process theory, this suggests that only by strengthening a person's system 2 to develop financial knowledge and skills, will improve his/her financial literacy (Carmel et al., 2020). However, studies in stock investments and financial literacy, reported people with high levels of financial literacy did not always make use of their financial knowledge, and at times trusted their "gut feelings" too much resulting in negative consequences for risk behavior (Glaser & Walther, 2013; Muller & Weber, 2010). The researchers raised the involvement of other personal characteristics that could influence financial literacy- and decisions, which was later confirmed in a meta-analysis by Fernandes et al. (2014). The meta-analysis revealed that overall, promotion of financial education did not always increase financial literacy, and suggested initiatives incorporating other cognitive-and emotional skills (Fernandes et al., 2014). Therefore, an opportunity exists in research to explore other psychological factors that can play a potential role.

2.6   Summary

In the previous sections, the main concepts of framing effects, financial anxiety and financial literacy were highlighted. The literature suggests bidirectional influences between framing effects, financial anxiety and financial literacy. In other words, if an individual does not possess the financial knowledge to navigate through the cognitive load the various financial options provide, and opt for a quick conclusion, it can lead to anxiety with a propensity to irrational financial decisions. In turn, when a person experiences higher levels of financial anxiety he/she might either avoid gaining any financial knowledge and/or display lower cognitive performance in making financial decisions. To support the correlation between framing effects and financial literacy, Nieddu & Pandolfi (2018) showed individuals with low financial literacy were more prone to framing effects. However, a recent study by Costa et al. (2021) reported higher levels of financial literacy was found to accentuate framing effects. Based on dual process theory, it is clear that emotions play a central role in framing effects and financial anxiety, evidenced in System 1 intuitive, automatic information processing. Likewise, research has linked financial literacy with System 2 analytical, deliberate information processing. Simply focusing on improving content knowledge about concepts such as interest rates, inflation and risk diversification to increase financial literacy, has not been so clear cut due to the important role emotions play in financial decisions (Fernandes et al., 2014). For this reason, it is proposed that a cognitive-emotional skill such as trait Emotional Intelligence (EI), can be considered a necessary resource to regulate emotions and enable more healthy financial decision making.

To further examine the role of Trait EI in financial decision making, the origins and development of the concept EI follows in the next section.

2.7   Trait Emotional Intelligence

Levenson (1994, p. 123) defined emotions as "short-lived psychological-physiological phenomena that represent efficient modes of adaptation to changing environmental demands". Emotions are ever present and essentially very functional and adaptive as it provides a way for us to appraise a situation, facilitate behavioral responses and lastly assist in communicating our internal states (Ekman & Davidson, 1994). Emotions were not always considered as instrumental for healthy living. This was illustrated by the 17th-century French philosopher René Descartes' well known saying of *"Cogito ergo sum" ("I think therefore I am")*(1637). Descatres regarded thoughts or cognitions as the most important aspect of human beings and emotions as irrational and futile. The popular "we think before we feel " notion has however since been refuted due to progress in research on emotions in neurosciences (Damasio, 1999). It is now well established that we are actually feeling beings that think (Pinker, 2003). While emotion and cognition do have functional separate aspects and effects (Bechara et al. 2000), modern research highlights interaction and integration between the two (Pessoa, 2008; Phelps, 2006).

One theory that seeks to integrate dimensions of emotion, cognition and social cognition is that of Emotional Intelligence (EI). EI, or the ability of a person to perceive, use, understand and manage their own emotions and the emotions of others, has been made popular by the bestseller book called "Emotional Intelligence" by the author Daniel Goleman in 1995. In actual fact, referral to this concept can be traced back as early as the 1920's with Thorndike postulating the concept of Social Intelligence. As a criticism of the unitary approach to intelligence as only including specific cognitive functions, Gardner (1983) developed the theory of multiple intelligences to extend the understanding of intelligence in a more broader way. His multiple

intelligence consists of Musical, Intrapersonal, Linguistic, Logical-Mathematical, Naturalist, Interpersonal, Body-kinesthetic and Spatial. Gardner's (1983) interpersonal and intrapersonal intelligences sparked new interest in especially the "hot" intelligences of EI that strived to demonstrate the interaction between emotions and intelligence (Bharwaney et al., 2011).

For the past decade, there has been significant progress in various research studies in an attempt to further define, operationalize and measure EI. The definition of EI largely depends on the theory underscoring the view of EI. For example, proponents of Ability EI view EI as emotion related cognitive abilities that are mainly measured through maximum performance- or problem-solving tests (Mayer & Salovey, 1997; Siegling et al., 2015). In contrast, Trait EI refers to emotion-related behavioral traits and self-perceived abilities, which form part of an individual's personality domain and is measured through self-report questionnaires (Petrides & Furnham, 2003; Petrides et al., 2007a).

Contemporary research attempts to consolidate the different approaches of EI, from a dual process-oriented framework (Fiori, 2009; Ybarra et al. 2013). For instance, even though the majority of EI models propose that conscious and deliberate thinking is central in a person's ability to understand their own and other people's emotions (Mayer & Salovey, 1997), research has also shown people may understand emotions through automatic, intuitive processes (Fiori, 2009), thereby warranting the notion that EI may be a dynamic and flexible integration of the two processes (Ybarra et al., 2013). From the field of neuroscience, Zanella et al. (2022), gained evidence of the neural basis of trait EI and emotional regulation. Through neuroimaging studies the researchers found that trait EI is associated with increased neural activity in the sensorimotor regions and salience network responsible for processing and control of socio-emotional

information and higher executive functioning related to the effective control of emotions. In addition, results showed high trait EI is positively correlated with adaptive emotional regulation strategies, more specifically cognitive appraisal (Zanella et al., 2022).

For the purpose of this study, the researcher has decided to focus on the trait EI model to define and measure EI. The Trait EI model has been extensively validated in research, found to be the most comprehensive conceptualization of EI and strong correlations with factors of the Big Five personality traits namely; extraversion, agreeableness, emotional stability, and autonomy (Petrides & Furnham, 2003; Petrides et al., 2007; Van der Linden et al., 2012).

Also known as emotional self-efficacy, trait EI "describes our perceptions of our emotional world: what our emotional dispositions are and how good we believe we are in terms of perceiving, understanding, managing, and utilizing our own and other people's emotions" (Petrides et al., 2018, p. 50)**.** These traits are situated at the lower levels of personality hierarchies and consists of five main traits with each its own subfacets namely; 1) Well-Being (trait happiness, trait optimism, self-esteem); 2) Self-Control (emotion regulation, impulse control, stress management); 3) Emotionality (trait empathy, emotion perception, emotion expression, relationships); and 4) Sociability (emotion management, assertiveness, social awareness). The fifth factor, Global trait EI includes adaptability and self-motivation (see below Figure 1: The trait EI model, Petrides et al., 2007).
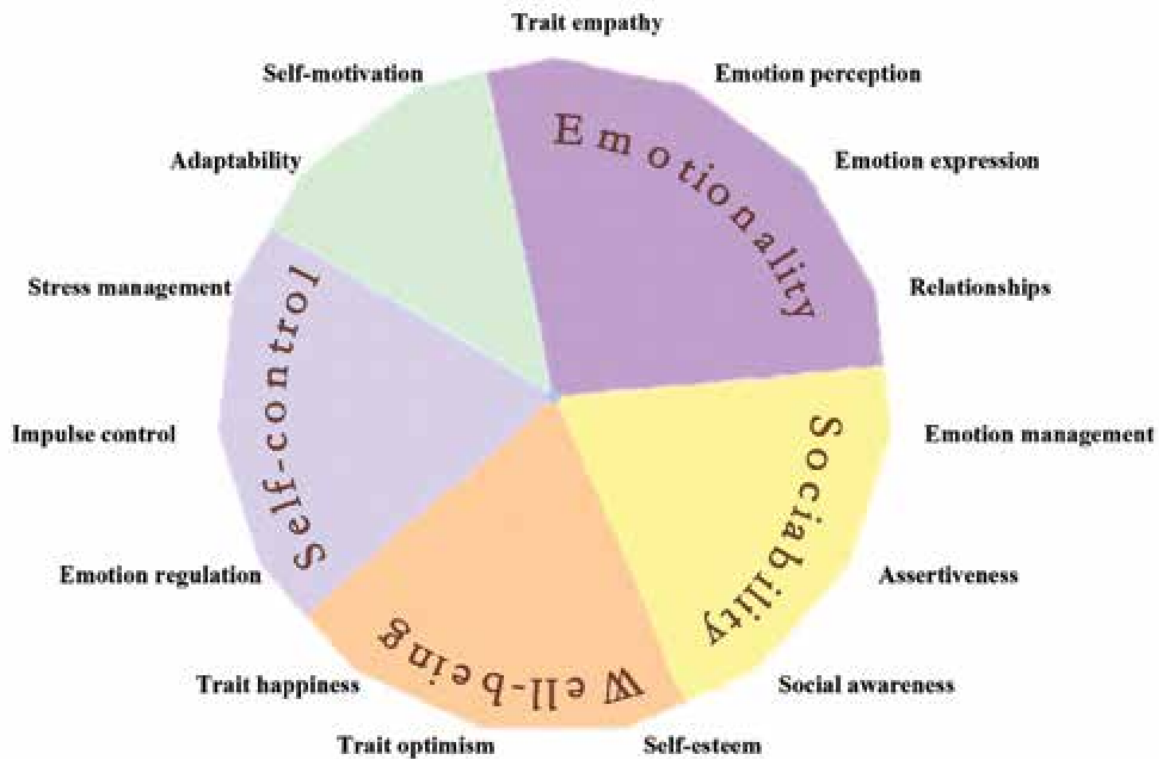
Figure 1.   The Trait EI Model (Petrides et al. 2007). The four main traits each with its corresponding factors. Note that the fifth trait (Global Trait EI) consists of adaptability and self-motivation.

Several empirical studies report a strong correlation between trait EI and success in life, academic and work, with positive associations between trait EI and psychosocial factors such as; higher life satisfaction (Martinez-Pons, 1997), psychological well-being (i.e self-acceptance and optimism) (Carmeli et al., 2009), increased self-esteem (Rey et al., 2011), positive interpersonal relationships (Brackett et al., 2011) and stress management (Gohm et al., 2005). Comparably, with specific reference to mental health, low trait EI increases risk to develop generalized anxiety disorder (GAD)(Lizeretti & Extremera, 2011), as well as psychological distress characterized by presence of depression and anxiety (Chan, 2005).

Empirical studies on demographic differences and trait EI have yielded varying results. In a study by Mikolajczak et al. (2007), no significant differences were found between trait EI and age. With regards to gender differences, some findings revealed higher trait global EI scores for males compared to females (Mikolajczak et al., 2007), whereas other studies showed females obtained higher trait EI scores (Saklofske et al., 2003; Van Rooy et al., 2005). Petrides et al. (2007b) as well as Montes-Berges and Augusto (2007) reported small to non-existent gender differences.

Hess and Bacigalupo (2011) and more recently, Bucciol et al. (2020) focusing on financial decisions, reported that decision makers higher on trait EI, understand the impact that emotions can have on decision making, display objectivity and avoid acting impulsively when making a decision. Also, people with high trait EI regulate their emotions more effectively before making a decision (Sevdalis et al., 2007), are capable of higher problem-solving skills (Saklofske et al., 2003), are more financially independent regarding their personal finances (Imam et al., 2022) and exhibit a greater willingness to invest (Rubaltelli et al., 2015). When it comes to financial decision making, a more rational view towards money, a greater sense of optimism and economic self-efficacy was reported among participants (Engelberg & Sjoberg, 2006). Related to the field of financial decision making, females with higher trait EI were found to display more confidence and self-efficacy in making financial decisions (Farrell et al., 2016). Bucciol et al. (2020) in their study about financial risk taking, documented gender effects, with well-being and self-control positively linked with risk-taking attitudes among males, while sociability was more prominent among the females.

Although there are no known studies on the role of trait EI on specifically financial anxiety, one study by Heckman et al. (2014), showed that higher financial self-efficacy and greater financial optimism about the future are significantly negatively correlated with financial stress. More recently, Espinosa and Rudenstine (2019) implicated Trait EI to be positively connected with financial well-being with decreased levels of psychological distress.

The potential value of trait EI in financial decisions are summarised by the following excerpt of Smith (2009, p. 85):

"The emotional intelligence of money calls for helping people recognize and suspend their overwhelming feelings in favor of making a more rational choice that aligns their actions with objective financial knowledge and goals. The more conscious people become about their emotional tendencies, the more able they are to manage them and take deliberate, financial action" .

2.8   Conclusion

This chapter illustrated that according to traditional economic models, all people will make rational financial decisions based on an understanding of costs and benefits alone. This has been proven to not be the case due to the influence of emotions. Within the field of behavioral economics, dual process theories emphasize aspects such as intuitive and deliberate, as different modes of thinking that can be activated in individuals' reasoning about financial issues. Framing effects, based in intuitive affective processes, is a cognitive bias in which the way a choice or information is presented influences a person's decisions which might lead to ineffective financial decisions. Regarding financial decision making, framing effects have been found to be

influenced by the individual's emotional states. Negative emotions, such as fear and anger increase susceptibility to the framing effect compared to positive emotions (Cassotti et al., 2012).

The relationship between experiencing financial anxiety about one's personal finances and having a low level of financial literacy are consistently underscored in the literature. Trait EI has been gaining empirical attention as a predictor of individual differences in financial decision making and is regarded as a central hallmark of psychological capital. For this reason, the capacity to effectively recognize and regulate one's emotional states can be expected to have a major impact on framing effects of an individual, enabling the person to manage anxiety about finances, thereby making better financial decisions and equipping oneself with more financial knowledge. Thus, the researcher is of the opinion that trait EI can serve as a potential moderator between framing effects, financial anxiety and financial literacy. According to Hadi (2017) people make better financial decisions when they identify and understand their emotions effectively, as it allows them to minimize the conflicts that can co-exist with the decision making process.

Based on the reviewed literature the following conceptual framework has been developed to illustrate the most key important aspects that will inform the objectives of the study and described further in Chapter 3: Research Methodology.
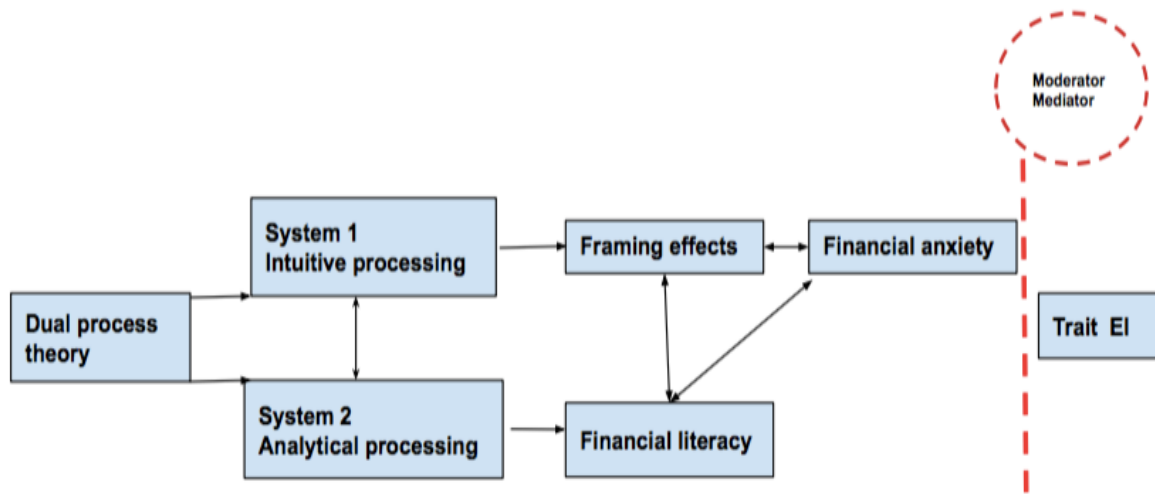
Figure 2.   Conceptual Framework based on Literature Review.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes (a) the context of research and motivation for the study, (b) research questions and hypotheses, (c) the design of the study, (d) the data gathering procedures, (e) a description of the various measuring instruments, and (f) the statistical analysis procedures.

3.1   Research Context and Motivation

This study was conducted in South Africa and focus mainly on gaining responses from a sample of a student population. With a population of 60.6 million people, South Africa is regarded as one of the most emerging economies in Africa (Statistics South Africa (StatsSA), 2022; Wentzel, 2016). Sadly, economic growth in South Africa has many challenges with ongoing high levels of poverty, unemployment and wealth inequality as a result of the history of Apartheid and its associated policies of racial segregation, political and economic discrimination (Wentzel, 2016). As in international studies, students in South Africa show low financial literacy levels (Ramavhea et al., 2017) creating a need for academic research to identify variables that may play a role within the South African context.

3.2 Research objective and questions

The main objective of this research study is to investigate the role of trait emotional intelligence in the relationship between framing effects, financial anxiety and financial literacy. Through exploratory analysis, the role of demographic variables and how their effect is moderated by individual differences in financial literacy, financial anxiety, and trait EI will also be explored .

The following research questions were formulated:

1) Are there differences between the way in which financial information is framed as easy or complex on financial choice?

2) Does financial anxiety, financial literacy and Trait EI play a mediating role in the effect of the condition (easy vs. complex information) and financial choice?

3.3 Defining variables and Research hypotheses

The independent (predictor) variables in this study were framing effects (experimental conditions and information), demographic and socio-economic variables, whereas choice, financial anxiety, financial literacy were the dependent (criterion) variables. Trait Emotional Intelligence (EI) was regarded as an intervening variable.

Derived from the reviewed literature discussed in Chapter 2 the following hypotheses were developed to be tested:

H1: Condition (easy vs. complex information) should have an effect on choice.

H2: The effect of the condition on choice should be mediated by the information type as easy, clear and a willingness to explain to others.

H3: The effect of condition on choice should be moderated by individual differences in financial anxiety, financial literacy, and trait emotional intelligence.

More specifically,

H3a: Individual differences in the effect of the condition should be moderated by financial anxiety.

H3b: Individual differences in the effect of the condition should be moderated by financial literacy.

H3c: Individual differences in the effect of condition should be moderated by trait emotional intelligence.

3.4   Research design

A quantitative experimental design was used based on a survey questionnaire (See Appendix 1). The experimental between-subjects design consisted of participants being randomly assigned to two conditions of differently framed financial information on a bank product. This allowed the researcher to determine the effects of the two conditions and to compare the difference in self-reported characteristics between the two groups (Howell, 2017). The nature of the framing conditions and measuring instruments included in the questionnaire will be discussed in detail later.

The questionnaire was distributed electronically using an online based survey software product (Qualtrics). The advantages of utilizing the Qualtrics survey was that it is user-friendly

and allows easy, quick access for participants via their smartphones or computers in a flexible 24 hour, 7 day environment (Mertler & Vannatta, 2016). A purposive sampling method was used to select the participants based on the objectives of the study. According to Cozby (2009) purposive sampling refers to acquiring a sample of participants that meet certain criteria. In the present study the predetermined criteria were students. There must be an awareness of the limitations it presents with introducing possible bias into the sample and limited ability to generalize data results to the extended population. However, due to the nature of the study this could not be prevented.

3.5   Participants and Data gathering procedure

The total sample of participants was 486 mostly undergraduate (i.e Bachelors) students from the Department of Economics and Finance at the University of the Free State, Bloemfontein, South Africa. Of the 486 responses, only 200 participants completed the full survey and provided informed consent prior and after the survey. This gives a response rate of 47%. A recent meta-analysis showed that for online surveys a response rate of 30% and above is deemed acceptable (Wu et al., 2022). This group was included in the study as part of a collaboration with the Deputy head of the Department of Economics and Finance that were interested in the objectives of the study and gave permission to distribute the online link after an in-presence talk to the undergraduate students about the field of Behavioral Economics. The rationale for only including Economic-and Finance students, was that being on Bachelors' level would be acceptable as representative of an average university student with respect to the level of financial knowledge.

In terms of ethical considerations, the Research Ethics Committee of the University of Padova approved the study with reference number: EDBE18832AF048F7F7314CB084E6290A. The study was carried out electronically, through the dissemination of a link. Participants were provided an informed consent form to give consent electronically and anonymously to ensure confidentiality through clicking on the preferred option (Agree or Not agree). No compensation was given for participation. At the end of the experiment, participants were given a debriefing consent form to allow the researcher to continue with use of data responses. The debriefing consent form provided information of the true purpose of the study and reasons were given as to the exclusion of this information initially as to prevent affecting the participant's responses and, thus, invalidating the experiment. The researcher did not foresee any potential harm to the participants as result of the study, as the two different conditions and subsequent questionnaires did not include any sensitive material. Opportunity to contact the researcher, by email, for clarification with respect to the purpose of the study was provided.

3.6   Measuring instruments

The study collected responses from the participants using measures adapted from existing literature and research:

3.6.1   Demographic information

Demographic and socioeconomic information was obtained from the total sample of participants. This included age, gender, degree level, marital status, employment status (i.e., full time or part time) and annual household income (ranging from R 75 000 to R 225 000). Further information that was recorded pertained to financial behavior (spending, borrowing, savings).

Participants had to report if there exists a financial dependence on their parents/guardians. With regards to their academic studies, they had to specify how it is being paid for, with options ranging from self, parents/guardians, scholarships/bursaries and National Student Financial Aid Scheme (NSFAS). The participants had to indicate if they receive a monthly allowance and estimated amount of living expenses (ranges from R 6 500 to R 16 000). Lastly, the participants reported their ability to save per month (Yes or No), credit card ownership and confidence level of paying off the credit card amount in the next 12 months (1= Very low confidence to 5= Very high confidence).

3.6.2   Experimental condition: Framing effects

Two conditions of differently framed financial information (simple and complex) were randomized among the participants (between subjects). The two conditions described a bank product i.e savings account and provided similar information, with distinct differences in the complexity of the terms. Prior to the launch of the official survey, a trial run or pilot test was conducted on a small number of students (N=23) to determine the validity of the two conditions and subsequent questions related to the information given.

Below is the example of the two conditions:

- **Condition A: Simple - Savings account**

Please read the following information about a savings account that is available from your local bank.

This product is a basic deposit account allowing you to save money and earn interest on the amount you put into your account while also having the option to withdraw it at any time. This bank offers you an interest rate of 5% which refers to the money you earn and will be paid into your account either once a year or once a month. The rate in (%) tells you how much money will be paid into your account, as a percentage of your savings. For example, if you deposit 100 euro with a 5% interest rate you will earn 5 euro per year*. For this savings account, an initial amount of deposit is required upon opening the account. Account fees will be deducted each month and a minimum balance will be maintained in your account.

*Projective illustration on a 100 euro deposit: 5% interest rate = 0.05

100 euro x 0.05 = 5 euro per year (the rate is variable which means it can go up or down).

- **Condition B: Complex - Savings account**

Please read the following information about a savings account that is available from your local bank.

This entry level product is a basic account allowing you full control and the ability to make deposits and withdrawals according to your unique needs. This bank offers you an interest rate of 5% which refers to the monetary charge for the privilege of borrowing your money, typically expressed as an Annual Equivalent Rate (AER)*. We offer to our clients an optimized interest return by maintaining a diversified portfolio thereby addressing risk of interest fluctuation. This product option requires an initial amount of deposit and deduction of monthly administrative fees calculated on the activity on your account. A minimum balance will have to be maintained in your account.

***Projective illustration on a 100 euro deposit**: 5.0% AER/Gross p.a (variable)

AER stands for Annual Equivalent Rate and illustrates what interest rate would be if interest was paid and added each year.
The gross rate is the interest rate payable before the deduction of tax. A variable rate will go up or down.

After the presentation of the above conditions, a manipulation check question was presented to determine if participants had engaged in deliberate cognitive processing in choosing the correct response. The question was formulated based on the information provided in the two conditions for example:

From the above information you have read 5% interest rate means? Choose the correct option:
   A. *5% = 0.05 and is not variable*
   B. *5% = 0.05 and is variable (= correct response)*
   C. *5% = 0.50 and fixed*
   D. *None of the above*

Additionally, the effect of the two framing conditions were measured in two ways:

  (1) ***Information***: The participants had to indicate on Likert scales to which extent the information on the bank product provided was:

- ***Easy*** (1 = Extremely easy to 3= Extremely difficult),

- ***Clear*** (1= Not clear at all to 9=Extremely clear) and

- ***Willingness to Explain*** the information to another person (1=Absolutely not able to 10= Absolutely able)

  (2) ***Choice:*** The participants had to indicate (1=Yes or 0=No) if they would open a bank account with the bank following the information on the bank product.

After the experimental conditions and related questions mentioned, all of the participants completed the following three measures described below.

3.6.3 Financial literacy

As previously stated, research reports discrepancies between subjective and objective measures of financial literacy among people. Specifically, people's subjective perception of their own level of financial knowledge is higher than their obtained objective score on a financial literacy measure (OECD, 2016). Therefore, in the present study a self-assessed financial literacy and an objective measure was administered.

Self-assessed financial literacy

To ascertain the level of subjective financial literacy, the participants were asked to rate their level of financial knowledge compared to their fellow students on a Likert scale ranging from (1= Well below average to 5 = Well above average).

Objective financial literacy

This questionnaire combines the standard questions on financial literacy by Lusardi and Mitchell (2011) and questions developed by the Organisation for Economic Co-operation and Development (OECD) International Network on Financial Education (INFE) (OECD INFE, 2016). The total of 8 items selected from the longer version, test the basic financial knowledge of fundamental concepts in financial decision making such as; knowledge of interest rates, interest compounding, inflation and risk diversification. Correct responses were coded as 1 (=correct) and 0 (= wrong) and summed, with a total range from 0-8. A higher score on this index indicates that a person has more financial literacy. Table 1 shows the eight financial literacy questions and answers.

Table 1

Financial Literacy Questions and Correct Answers

Items	Questions and (correct answers)
Interest paid on a loan	You lend R25 to a friend one evening and he gives you R25 back the next day. How much interest has he paid on this loan? (answer: 0)
Division	Imagine that five brothers are given a gift of R1,000. If the brothers have to share the money equally, how much does each one get? (answer: R200)
Time-value of money	Now imagine that the brothers have to wait for one year to get their share of the R1,000 and inflation stays at 3 percent. In one year's time will they be able to buy: (answer: less than they could buy today)
Calculation of interest plus principle	Suppose you put R100 into a savings account with a guaranteed interest rate of 2% per year. You don't make any further payments into this account and you don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made? (answer: exactly R102)
Compound interest	How much would be in the account at the end of five years, remembering there is no fee? (R100 input 2% interest rate) (answer: more than R110)
Definition of inflation	High inflation means that the cost of living is increasing rapidly (answer: True)
Risk and return	An investment with a higher than average return is likely to be higher than average risk (answer: True)
Diversification	It is less likely than you will lose all of your money if you save it in more than one place (answer: True)

3.6.4   Financial Anxiety Scale (FAS)

This scale was developed by Shapiro and Burchell (2012) to measure an anxious disposition toward cognitive engagement with one's personal finances. It consists of 12 items on a four-point Likert scale ranging between very completely untrue (=1) to completely true (=4). Due to reported low factor analysis in a study by Shapiro and Burchell (2012) on certain items only 9 items were used for the purposes of the present study. The average of the total scores ranging from 1-4 are obtained. Higher scores indicate a higher level of financial anxiety. In a study on undergraduate students, Cronbach's alpha was 0.855 (Shapiro & Burchell, 2012) Table 2 provides an example of the items in the FAS.

Table 2

The Financial Anxiety Scale (FAS) Items

Items
1. I prefer not to think about the state of my personal finances. 2. Thinking about my personal finances can make me feel guilty. 3. I am worried about the debt I will have when I complete my university education. 4. Thinking about my personal finances can make me feel anxious. 5. I get myself into situations where I do not know where I'm going to get the money to "bail" myself out. 6. Discussing my finances can make my heart race or make me feel stressed. 7. I do not make a big enough effort to understand my finances. 8. I do not think I am doing as well as I could academically because I worry about money. 9. I find opening my bank statements unpleasant.

3.6.5 *Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF)*

Trait Emotional intelligence was measured using the Trait Emotional Intelligence Questionnaire–Short Form (TEIQue–SF) (Petrides, 2009). It is based on the long form of the TEIQue (Petrides & Furnham, 2003). This self report measure is built on the trait EI theory and model, which conceptualizes emotional intelligence as a personality trait, located at the lower levels of personality hierarchies (Petrides & Furnham, 2000, 2003). The TEIQue–SF consists of 30 items that comprises four dimensions namely Well-being (6 items), Self–control (6 items), Emotionality (8 items) and Sociability (6 items) (see Table 3 for the different dimensions and emotional competencies)(adapted from Rosales-Pérez et al., 2021).

An example of one of the items is *"Expressing my emotions with words is not a problem for me."* Responses to the items are given on a seven-point Likert 7 scale, ranging from completely disagree (=1) to completely agree (=7). Certain items are reversed scored, and then

all responses are added up to gain an overall score for global trait EI. In terms of reliability and validity, several international studies have shown Cronbach's alpha ranging from 0.65 to 0.85 (Zampetakis, 2011). Within the South African context the TEIQue-SF has been used with success, with Cronbach's alpha ranging from 0.729 (Smith, 2012) to 0.90 (Hardy, 2005).

Table 3

Dimensions and emotional competencies in the TEI questionnaire

Dimensions	Emotional Competencies	High scorers perceive themselves as…..
Well-Being	Happiness Optimism Self-esteem	Satisfied with their lives. Likely to "look on the bright side" of life. Successful and self-confident.
Self control	Emotion regulation Adaptability Impulsiveness (low) Self-motivation Stress management	Able to control their emotions. Flexible and ready to adapt to new conditions. Thoughtful and less likely to give in to their impulses. Unlikely to give up in the face of adversity. Able to withstand pressure and regulate stress.
Emotionality	Emotion management Social awareness Assertiveness	Able to influence the feelings of others. Connected to superior social skills. Frank and ready to defend their rights.
Sociability	Relationships Empathy Emotion perception Emotion expression	Able to maintain satisfactory personal relationships. Able to take another person's perspective. About your own and others' feelings. Able to communicate their feelings to others.

3.7   Statistical analyses

To investigate the research questions and hypotheses, a particular statistical analyses procedure was followed that is henceforth discussed. All statistical analyses were performed with computer analysis software R (R version 4.2.0, 2022). The reliability of the measuring instruments used in this study was investigated by computing Cronbach's alpha coefficients.

3.7.1   Descriptive statistics

Using descriptive statistics the demographic data for the total group, with a distinction of the two conditions will be summarized in terms of totals and frequencies. All the demographic factors will be regarded as independent (predictor) variables. Also, for the other independent-and dependent variables, the minimum and maximum values, the means and standard deviations will be displayed.

3.7.2   Inferential statistics

3.7.2.1 Independent Sample t-test

To investigate the effect of the manipulation, which refers to the two randomized conditions, an independent sample t-test will be performed. The t-test will compare the means of the two independent groups in order to determine whether they are statistically different or not (Gerald, 2018).

3.7.2.2   Multiple regression analysis

A correlational methodology will be followed due to the presence of multiple variables in the present study. A correlational research paradigm is more preferable when considering a different set of variables and to establish the type and strength of the relationship between the variables (Gravetter & Forzano, 2009). However, it is important to consider that correlation does not imply a causal role (Gravetter & Forzano, 2009).

Pearson's Chi square tests will determine if the categorical variables have significant correlations. Because regression analysis will also be used, the correlations between all the

independent and dependent variables will be calculated with Pearson's product-moment

correlation coefficient (r). The probability values for statistical significance (p-value) will be

calculated on the 5%, 1% and 0,1% levels (i.e. $p \leq 0.05$; $p \leq 0.01$; $p \leq 0.001$).

If significant correlations are determined, further mediation analysis will be performed to

determine whether the predictor variables have an effect on the criterion variables. The analysis

will indicate indirect or direct effects (Howell, 2017).

3.7.2.3 *Multivariate analysis of variance (MANOVA)*

To compare the moderating effects of the multi-independent variables on the dependent

variables, a one way multivariate analysis of variance (MANOVA) will be performed. This type

of analysis allows the researcher to determine whether multiple levels of independent variables

on their own or in combination with one another have an effect on the dependent variables

(Howell, 2017).

In the following section, Chapter 4, the main results that were found will be presented.

CHAPTER 4

RESULTS

This chapter reports on the descriptive statistics of the sociodemographic information and variables of the sample. The reliability of the scales will be reported. The inferential statistics results section will include answering the research questions by presenting the main results from the independent sample t-tests, correlations, Chi-square tests, mediation analysis, MANOVA and multiple regression analysis.

4.1   Descriptive Analyses

4.1.1   Demographic variables

The total sample of participants consisted of 200 students from the Department of Economics and Finance at the University of Free State, South Africa. Table 4 shows the descriptive statistics for the total sample as well as the two groups based on the randomized framing conditions (Simple and Complex). The total sample was further divided into the Simple condition (N=105) and Complex condition (N=95) participants.

As can be seen from Table 4, 95% students fall predominantly in the age group 18-24 with a gender distribution (Males 42.5% and Females 56%). The majority of the students are doing their Bachelor degree (95%). With regards to the main source of payment for studies, 44% students reported receiving financial aid through a national scheme and 32.5% indicated their

Parents as the main financial source for studies. Most of the students are unemployed (85%) and financially dependent on their parents (89%).

Taking into account the annual household income, there is a binary distribution among the students between poor-low emerging middle class income (31%) with annual income less than (<) R 75 000, and the upper middle class to emerging affluent household income more than (>) R 225 000 per year. Observing closer the nature of student's financial behavior, 57% indicated they receive monthly pocket allowances, living expenses were less than R 6 500 per month (68.5%), 53.5% reported that they manage to save every month and 80.5% of the students do not own a credit card.

Table 4

Frequency Distribution of the Demographics for the Two Conditions and Total Sample (N=200)

Variables	Simple Condition (N=105)		Complex Condition (N=95)		Overall (N=200)	
	N	**%**	**N**	**%**	**N**	**%**
Age						
18-24	99 (94.3%)		91 (95.8%)		190 (95%)	
25-35	5 (4.8%)		4 (4.2%)		9 (4.5%)	
36-55	1 (1.0%)		0 (0%)		1 (0.5%)	
56-65	0 (0%)		0 (0%)		0 (0%)	
Gender						
Male	49 (46.7%)		36 (37.9%)		85 (42.5%)	
Female	56 (53.3%)		56 (58.9%)		112 (56%)	
Non binary	0 (0%)		1 (1.1%)		1 (0.5%)	
Prefer not to say	0 (0%)		2 (2.1%)		2 (1%)	
Degree						
Bachelor	100 (95.2%)		90 (94.7%)		190 (95%)	
Honors	5 (4.8%)		5 (5.3%)		10 (5%)	

Studies paid by			
Scholarship	18 (17.1%)	12 (12.6%)	30 (15%)
Parents	34 (32.4%)	31 (32.6%)	65 (32.5%)
Myself	3 (2.9%)	5 (5.3%)	8 (4%)
Financial aid	48 (45.7%)	40 (42.1%)	88 (44%)
Other	2 (1.9%)	7 (7.4%)	9 (4.5%)
Employment			
Full time	1 (1.0%)	4 (4.2%)	5 (2.5%)
Part time	14 (13.3%)	12 (12.6%)	26 (13%)
Not employed	90 (85.7%)	79 (83.2%)	169 (84.5%)
Income			
< 75.000	33 (31.4%)	30 (31.6%)	63 (31.5%)
75.000-110.000	11 (10.5%)	9 (9.5%)	20 (10%)
110.000-150.000	7 (6.7%)	7 (7.4%)	14 (7%)
150.000-190.000	6 (5.7%)	10 (10.5%)	16 (8.0%)
190.000-225.000	11 (10.5%)	6 (6.3%)	17 (8.5%)
> 225.000	37 (35.2%)	33 (34.7%)	70 (35.0%)
Financial dependence			
Yes	93 (88.6%)	85 (89.5%)	178 (89.0%)
No	12 (11.4%)	10 (10.5%)	22 (11.0%)
Allowance			
Yes	62 (59.0%)	52 (54.7%)	114 (57.0%)
No	43 (41.0%)	43 (45.3%)	86 (43.0%)
Living expenses			
< 6.500	75 (71.4%)	62 (65.3%)	137 (68.5%)
6.500-10.000	22 (21.0%)	20 (21.1%)	42 (21.0%)
10.000-13.000	4 (3.8%)	7 (7.4%)	11 (5.5%)
13.000-16.000	2 (1.9%)	3 (3.2%)	5 (2.5%)
> 16.000	2 (1.9%)	3 (3.2%)	5 (2.5%)
Saving			
Yes	57 (54.3%)	50 (52.6%)	107 (53.5%)
No	48 (45.7%)	45 (47.4%)	93 (46.5%)
Credit			
Yes	19 (18.1%)	20 (21.1%)	39 (19.5%)
No	86 (81.9%)	75 (78.9%)	161 (80.5%)

The summary statistics in terms of the means and standard deviations of all the involved variables for the two conditions and the total sample are presented in Table 5. A distinction was made between participants that answered the manipulation check correct or wrong.

Table 5

Descriptive Statistics for Framing Effects, Financial Literacy, Financial Anxiety and TEI for the Simple Condition and Complex Condition with Wrong and Correct Responses in the Manipulation Check

Manipulation check	Simple Condition (N=105)		Complex Condition (N=95)		Overall (N=200)	
	Wrong (N=37)	Correct (N=68)	Wrong (N=30)	Correct (N=65)	Wrong (N=67)	Correct (N=133)
Variables						
Info_easy						
Mean (SD)	1.68 (0.530)	1.68 (0.531)	2.03 (0.320)	2.02 (0.545)	1.84 (0.480)	1.84 (0.562)
Info_clear						
Mean (SD)	6.68 (1.65)	6.91 (1.63)	5.63 (1.45)	5.52 (1.93)	6.21 (1.64)	6.23 (1.91)
Info_explain						
Mean (SD)	7.89 (1.90)	7.90 (1.96)	6.53 (2.29)	6.29 (2.41)	7.28 (2.17)	7.11 (2.33)
Choice						
Mean (SD)	0.622 (0.492)	0.426 (0.498)	0.567 (0.504)	0.569 (0.499)	0.597 (0.494)	0.496 (0.502)
Rate_fin_know						
Mean (SD)	3.49 (0.932)	3.57 (1.03)	3.50 (0.938)	3.48 (0.793)	3.49 (0.927)	3.53 (0.918)
Financial literacy						
Mean (SD)	6.19 (1.10)	6.16 (1.02)	6.20 (1.13)	5.97 (1.12)	6.19 (1.10)	6.07 (1.07)
Financial anxiety						
Mean (SD)	2.23 (0.705)	2.18 (0.672)	2.21 (0.748)	2.14 (0.587)	2.22 (0.719)	2.16 (0.630)
Trait EI						
Mean (SD)	4.63 (0.721)	4.71 (0.795)	4.39 (0.933)	4.76 (0.811)	4.53 (0.825)	4.73 (0.800)

From Table 5, it can be noted that from the total sample (N=200), the majority of participants (N=133) with a further division of Simple condition (N=68) and Complex condition

(N= 65) answered correctly on the manipulation check. In regards to ***Choice***, more participants

from the total sample (N=200) that answered wrong on the manipulation check (N=67), chose to

open a bank account (M=0.597, SD= 0.494) compared to the participants that answered

correctly on the manipulation check (M=0.496, SD=0.502). A further distinction can be made

between the Simple Condition/Wrong (M= 0.622, SD=0.492) and Simple Condition/Correct

((M=0.426; SD=0.498).

The ***financial literacy level*** , for the total sample (N=200) showed a mean (M=6.19,

SD=1.10) among the participants that responded wrong on the manipulation check, which was

higher than the participants that answered correctly on the check (M=6.07, SD=1.07).

Comparing the two conditions, participants in the Complex Condition/Wrong had a higher mean

(M=6.20, SD=1.13) than participants in the Complex Condition that answered correctly

(M=5.97, SD=1.12). The maximum score of financial literacy is 8, which suggests that the

financial literacy level of the majority of participants falls in the moderate to high range. This

coincides with the subjective average scores of financial literacy among the participants

(M= 3.49, SD=0.927 to M= 3.53, SD=0.918) indicating that the majority of participants

self-reported a rate of financial knowledge in the mid-range.

The ***financial anxiety level*** in the total sample (N=200) ranged between (M=2.22 ,

SD=0.719) among participants that responded wrong in the manipulation check compared to the

participants that answered correctly (M= 2.16, SD= 0.630). With a minimum and maximum

score of 1 to 4 on the FAS, with 1 indicating the least possible financial anxiety and 4 the

highest. Additionally, the means in the two conditions for participants that responded wrong on

manipulation check were higher in the Simple Condition (M=2.23, SD=0.705) and Complex

Condition (M=2.21, SD=0.748) compared to participants who answered correctly (Simple Condition, M=2.18, SD=0.672) and Complex Condition (M=2.14, SD= 0.587).

In *Trait Emotional Intelligence (TEI)*, the scores of TEI was higher among participants in the Complex Condition/Correct (M=4.76; SD=0.811) and Simple Condition/Correct (M=4.71; SD= 0.795) than compared to participants in the Simple Condition/Wrong (M=4.63; SD=0.721) and the lowest for the participants in the Complex Condition/Wrong (M=4.39; SD=0.933). These results suggest that the TEI scores were higher for those participants that answered correctly on the manipulation check in both conditions.

4.1.2   Reliability

In order to assess the internal consistency of the self-report measurements namely the Financial Anxiety Scale (FAS) and the Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF), the Cronbach's alpha coefficient (α) were calculated. This is an important step in research to add validity and accuracy to the interpretation of results obtained (Tavakol & Dennick, 2011). The computed coefficients for the FAS was   α= 0.794 and for the TEIQue-Short Form α= 0.876. According to Lance et al. (2006), coefficients of 0.7 and above are acceptable in the social sciences. Therefore, the measuring scales in this study provide sufficient reliability and subsequently all the variables were used in the statistical analysis.

4.2   Inferential statistics

4.2.1   Effect of manipulation condition

An independent sample t-test was conducted to establish whether the means of the groups assigned to the two conditions (Simple and Complex) were different in respect of the Information (Easy, Clear, Explain). The results are presented in Table 6 and shows that there are

significant differences in the means between Simple condition, Info_clear (M = 6.83) and

Info_explain (M= 7.90) and the Complex condition (Info_clear, M= 5.56) and (Info_explain, M= 6.37). This demonstrates that in the Simple condition, participants found the financial

information on the bank account to be more clear and reported a willingness to explain it to

another person compared to the participants in the Complex condition. It is important to note that

for Info_easy a number closer to 1 (= Extremely easy), whereas a number closer to 3 (= Extremely difficult). Therefore, there was only a small difference between the two conditions,

with the participants in the Simple condition finding the information easier (Info_easy, M= 1.68)

in contrast with the Complex condition (M= 2.02).

Table 6

Independent Sample T-test Comparing Framing Conditions with Info_Easy, Info_Clear and Info_Explain

Variables	Simple Framing condition (N= 105)	Complex Framing condition (N= 95)				95% Confidence level	
	Mean	*Mean*	*df*	*t*	*p-value*	Lower	Upper
Info_easy	1.68	2.02	198	5	0.000003	0.203	0.487
Info_clear	6.83	5.56	198	-5	0.0000004	-1.747	-0.794
Info_explain	7.9	6.37	198	-5	0.000001	-2.126	-0.928

4.2.2   Correlations

4.2.2.1 Correlations between framing effects, financial literacy, financial anxiety and

trait Emotional intelligence (EI)

The correlations between the independent and dependent variables were calculated with

Pearson's product moment correlation coefficients (r) and displayed in Tables 7, 8 and 9. The

statistically significant coefficients were investigated in terms of practical significance of the

coefficients. With regards to the strength of the correlations, the guidelines of Evans (1996)

suggests the absolute value of (r) ranging from, .00-.19 "very weak" effect, .20-.39 "weak",

.40-.59 "moderate", 60-.79 "strong" to 80-1.0 "very strong".

Table 7

***Pearson's Correlation Coefficients for Comparisons among the Independent and
Dependent Variables in the Two Randomized Conditions (Simple and Complex)
for the Total Sample (N=200)***

	Choice	Info_easy	Info_clear	Info_explain	TEI	FAS	FL
Choice	-	-0.04	0.01	0.12	0.04	0.12	-0.02
Info_easy	-0.04	-	-0.57***	-0.42***	-0.22**	0.05	-0.09
Info_clear	0.01	-0.57***	-	0.58***	0.17*	-0.03	0.19**
Info_explain	0.12	-0.42***	0.58***	-	0.21 **	-0.08	0.19**
TEI	0.04	-0.22**	0.17*	0.21**	-	-0.55***	0.23***
FAS	0.12	0.05	-0.03	-0.08	-0.55***	-	-0.14
FL	-0.02	-0.09	0.19**	0.19**	0.23***	-0.14	-

* p ≤ 0.05   ** p ≤ 0.01   *** p ≤ 0.001

TEI = Trait Emotional Intelligence, FAS = Financial Anxiety Scale, FL= Financial Literacy

From Table 7, it is evident that there is no correlation between Choice and the other

variables (Info_easy, Info_clear, Info_explain, TEI, FAS and FL) in the total sample. Info_easy

shows a marked negative correlation with Info_clear (r= -0.57; p ≤ 0.001), Info_explain (r= -0.42; p ≤ 0.001) and TEI (r= -0.22; p ≤ 0.01) for the total group. It is important to note that during analyses, the responses on Info_easy were recoded and thereby showed response options in the opposite direction as compared to Info_clear and Info_explain. For instance, low values means easier, while for the other variables high values means it was clearer or that people were more willing to explain. Therefore, these correlations indicate that when the information was reported as easier, clearer and higher willingness to explain to others participants, higher levels of TEI were reported by the participants.

Both Info_clear and Info_explain have significant positive correlations with TEI (r = 0.17; p ≤ 0.05; r = .21; p ≤ 0.01) and FL (r = 0.19; p ≤ 0.01; r= 0.19; p ≤ 0.01). These positive correlations suggest that the higher the participants scored on Info_clear and Info_explain the higher the scores tend to be on trait EI and financial literacy. Additionally, there is a significant positive correlation between trait EI and FL (r = 0.23; p ≤ 0.001). This suggests that participants with high scores on the trait EI also reported higher scores on financial literacy.

With reference to financial anxiety, results show that there is a significant negative correlation with trait EI (r = -0.55; p ≤ 0.001). Therefore, participants that experience higher financial anxiety achieved lower scores on trait EI.

Table 8 shows the correlations coefficients among the variables for the participants in the Simple condition. Info_easy has significant negative correlations with Info_clear (r = -0.60; p ≤ 0.001), Info_explain (r = -0.36; p ≤ 0.001) and trait EI (r = -0.23; p ≤ 0.05). Furthermore, there is a marked positive correlation between Info_clear and Info_explain on the 0.1% significance level (r= 0.49). This means that participants that reported the information were more clear, their

responses on willingness to explain the information was also high. Info_explain shows a marked

positive correlation with trait EI ($r = 0.24$; $p \leq 0.05$), indicating that participants with higher trait

EI scored higher on willingness to explain information to others. As seen in the results of the

total sample, Trait EI shows a significant negative correlation with financial anxiety ($r = -0.70$; p

≤ 0.001) and a marked positive correlation with financial literacy ($r = 0.21$; $p \leq 0.05$).

As for the possible relationship between financial anxiety and financial literacy, there is

evidence of a negative correlation ($r = -0.28$; $p \leq 0.01$). This indicates that the higher participants

scored on financial anxiety the lower their scores were on financial literacy.

Table 8

Pearson's Correlation Coefficients for Comparisons among the Independent and Dependent Variables in the Simple Condition (N=105)

	Choice	Info_easy	Info_clear	Info_explain	TEI	FAS	FL
Choice	-	-0.04	0.07	0.13	0.06	0.03	0.08
Info_easy	-0.04	-	-0.60***	-0.36***	-0.23*	0.16	-0.06
Info_clear	0.07	-0.60***	-	0.49***	0.19	-0.06	0.15
Info_explain	0.13	-0.36***	0.49***	-	0.24*	-0.15	0.19
TEI	0.06	-0.23*	0.19	0.24*	-	-0.70***	0.21*
FAS	0.03	0.16	-0.06	-0.15	-0.70***	-	-0.28**
FL	0.08	-0.06	0.15	0.19	0.21*	-0.28**	-

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

TEI = Trait Emotional Intelligence, FAS = Financial Anxiety Scale, FL= Financial Literacy

In Table 9, the results are shown for Pearson's correlation coefficients for the participants

in the Complex condition. Showing no correlations in the total sample or simple condition,

Choice seems to have a marked positive correlation ($r=0.24$) with financial anxiety on the 5%

significance level ($p \leq 0.05$) in the Complex condition. This means that participants that

indicated yes in opening a bank account, tend to score higher on financial anxiety.

Similar as in the Total sample and Simple condition, Info_easy displays negative

correlations with Info_clear (r = -0.43; $p \leq 0.01$), Info_explain (r = -0.35; $p \leq 0.01$) and TEI (r =

-0.22; $p \leq 0.05$). Info_clear reveals significant positive correlations with Info_explain (r= 0.56;

$p \leq 0.001$) and FL (r= 0.21; $p \leq 0.05$). Lastly, participants with higher trait EI reported low

financial anxiety levels (r= -0.39; $p \leq 0.001$) and scored higher on financial literacy (r= 0.26 $p \leq$

0.05).

Table 9

Pearson's Correlation Coefficients for Comparisons among the Independent and Dependent Variables in the Complex Condition (N=95)

	Choice	Info_easy	Info_clear	Info_explain	TEI	FAS	FL
Choice	-	-0.09	0.01	0.17	0.03	0.24*	-0.12
Info_easy	-0.09	-	-0.43***	-0.35***	-0.22*	-0.06	-0.1
Info_clear	0.01	-0.43***	-	0.56***	0.16	-0.01	0.21*
Info_explain	0.17	-0.35***	0.56***	-	0.19	-0.05	0.17
TEI	0.03	-0.22*	0.16	0.19	-	-0.39***	0.26*
FAS	0.24*	-0.06	-0.01	-0.05	-0.39***	-	0.02
FL	-0.12	-0.1	0.21*	0.17	0.26*	0.02	-

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

TEI = Trait Emotional Intelligence, FAS = Financial Anxiety Scale, FL= Financial Literacy

4.2.3   Multivariate Analysis of Variance (MANOVA)

The key aim of multivariate analysis of variance (MANOVA) is to determine whether multiple levels of independent variables on their own or in combination with one another have an effect on the dependent variables (Howell, 2017). For this, the Pillai's trace, which is a test statistic produced by a MANOVA, was used. This statistical test is considered robust to use (Howell, 2017). The output provides a Pillai's trace value, associated F-statistic and a p-value. In general, small p-values (below .05) mean that Pillai's returned a statistically significant result.

In Table 10 the main effects are presented for Conditions, Info_clear, Info_explain and FL and in Table 11 for Conditions and TEI. In Table 10, Conditions show a F statistic (F=17.86) and a corresponding p-value ($p \leq 0.001$). Financial Literacy (FL) reports a Pillai's Trace = 0.0421, F=4.28, $p \leq 0.05$. A significant effect of Conditions (Complex) and Info_clear on FL was found. The results further indicate that Conditions had no significant interaction with FL.

Table 10

Multivariate Pillai's Trace Test for Conditions, Info_Clear, Info_Explain and Financial Literacy (FL)

Variables	Pillai's Trace value	F- statistic	Df1	Df2	P value (>F)
Conditions	0.1548	17.86	2	195	0.000000075***
FL	0.0421	4.28	2	195	0.015*
Cond:FL	0.001	0.09	2	195	0.91
Residuals	196				
Significant codes 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

Table 11

Multivariate Pillai's Trace Test for Conditions and Trait Emotional Intelligence (TEI)

Variables	Pillai's Trace value	F- statistic	Df1	Df2	P value (>F)
Conditions	0.1557	17.98	2	195	0.000000068***
TEI	0.0508	5.22	2	195	0.0062**
Cond: TEI	0.0004	0.04	2	195	0.9594
Residuals	196				
Significant codes 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

Table 11 shows that Conditions has a F- statistic (F=17.98) and corresponding p-value ($p \leq 0.001$). In TEI a Pillai's Trace = 0.0508, F=5.22, $p \leq 0.01$ was obtained. This suggests that there was no statistically significant effect of Conditions on TEI. The results further indicate that Conditions had no interaction with TEI.

4.2.4 How easy was the information

4.2.4.1 Chi-square analysis

In the framing condition the information easy item consisted of three responses on a Likert scale namely (1 = Extremely easy to 3= Extremely difficult). This item was recoded as a categorical variable (0=Not easy, 1=Easy). This was undertaken in order to ascertain if the two categorical variables of Info-easy (Not easy/Easy) and type of condition (Simple/Complex) have a significant correlation through a Pearson's Chi-squared test. The chi-squared value of 16.9 and p value of 0.0000385 ($p \leq 0.05$), shows that the two variables are dependent on each other. More specifically, in the Simple condition, 65% participants found the information easy as compared to 90% participants that found it difficult in the Complex condition.

4.2.5   *Choice*

4.2.5.1   *Chi-square analysis*

In order to determine if the two categorical variables of Choice (Yes/No) and type of condition (Simple/Complex) have a significant correlation, a Pearson's Chi-squared test was performed. A chi-squared value of 1.07 and p=0.3 was obtained. Since the p-value (0.3) is more than the significance level of 0.05, it suggests that the two variables are independent of each other.

4.2.5.2   *Logistic regression*

Logistic regression was applied to determine if Condition (Simple/Complex), Information (Info-clear, Info_explain), Financial literacy and Trait Emotional Intelligence predicted Choice as a dependent categorical variable (Yes/No). No significant results were yielded between Condition (Simple/Complex), Financial literacy, Trait Emotional Intelligence and Choice. In Table 12, the logistic regression for Conditions, Info_clear, Info_explain and Choice are presented.

Table 12

Logistic Regression for Conditions, Info_Clear, Info_Explain and Choice

Coefficients	Estimate	Standard error	z-value	P value (>z)
(Intercept)	-0.4583	0.5579	-0.82	0.411
CondSimple	-0.4846	0.3148	-1.54	0.124
Info_clear	-0.0682	0.1003	-0.68	0.496
Info_explain	0.1758	0.0812	2.16	0.031 *
Significant codes 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1				

4.3   Mediation analysis

Mediation analysis was undertaken to determine if Info_explain was a mediator variable between Conditions (independent variable) and Choice (categorical dependent variable) as well as Financial anxiety (dependent variable). Prior to introducing the mediator variable, it is important to establish if a correlation exists between the set independent and dependent variable(s) (Baron and Kenny, 1986) The main results are presented in Table 13.

Results show that Conditions had an indirect effect on willingness to explain (Info-explain). Additionally, Choice was predicted by the willingness to explain information (Info_explain). This is an interesting result, suggesting that the willingness to explain information to others played a mediating role between Conditions and Choice to open a bank account (see Figure 3). Thus, participants that were willing to explain the information to others were more likely to choose to open a bank account. Furthermore, conditions did not predict financial anxiety but Info_explain was found to have an effect on financial anxiety.

Table 13

Mediation Regression Results for the Effect of Info_Explain between Condition, Choice and Financial Anxiety

| Regressions		Estimate	Standard error	z-value	P value (>z)
Choice ~					
Cond	(c1)	-0.136	0.073	-1.858	0.063
Info_explain	(b1)	0.039	0.016	2.407	0.016
FAS	(b2)	0.106	0.052	2.017	0.044
Info_explain ~					
Cond	(a1)	1.527	0.302	5.05	<0.001
Variances		**Estimate**	**Standard error**	**z-value**	**P value (>z)**
.Choice		0.237	0.024	10	<0.001
.Info_explain		4.56	0.456	10	<0.001
R- squared		**Estimate**			
Choice		0.052			
Info_explain		0.113			
Defined parameters		**Estimate**	**Standard error**	**z-value**	**P value (>z)**
Indirect1		0.059	0.027	2.173	0.03
Total		-0.077	0.07	-1.098	0.272
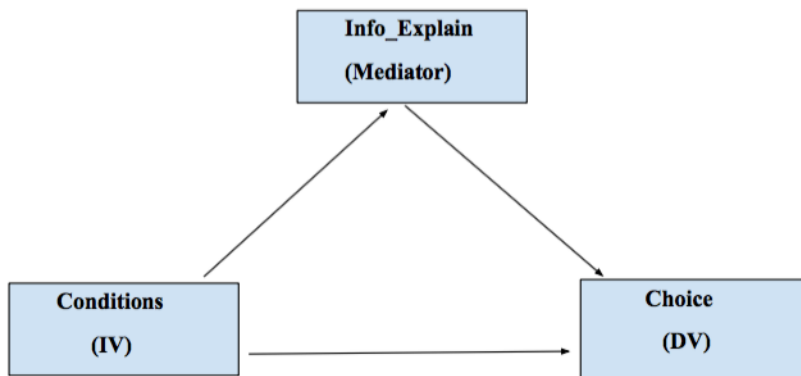
Figure 3. The Mediating Effect of Info_Explain between Conditions and Choice

4.4   Multiple linear regression analysis

4.4.1   Regression models between sociodemographic variables, framing effects (FE), financial literacy (FL) , financial anxiety (FA) and trait Emotional Intelligence (EI)

To investigate if sociodemographic differences existed among the participants in respect to framing effects (i.e Condition, Info_clear, Info_explain, Choice), a correlational and regression analysis were conducted. Results showed no statistically significant correlations or interactions between any of the sociodemographic factors and FE.

Further analysis, exploring the logistic regression between Gender X FE X FL, indicated a strong interaction between Gender X Choice X FL (See Table 14). This was largely observed among the male participants. A two sample t-test was also done which indicated that males have a higher financial literacy (M=6.44) compared to the females (M=5.84) with a 0.60 difference. Furthermore, males were more likely to choose to open the bank account (Choice). Males with high FL were more likely to say No to opening a bank account compared to males with low FL that responded YES to opening an account. The same was observed among females. For example, females with high FL responded No and females with low FL responded Yes to open the account. To better understand the effect of gender in this interaction, separate regression lines for the female and male participants were calculated by method of a simple slope analysis. It is illustrated in Figure 4.

Table 14

Logistic Regressions for Gender, Framing Effects and Financial Literacy

Coefficients	Estimate	Std. Error	z-value	Pr(>|z|)
Intercept	6.4038	3.5349	1.81	0.07.
CondSimple	-0.5909	0.3254	-1.82	0.069
Info_clear	-0.1883	0.5923	-0.32	0.751
FL	-1.1859	0.5921	-2	0.045*
Info_explain	-0.2767	0.4615	-0.6	0.549
Gender_fFemale	-3.965	1.9225	-2.06	0.039*
Info_clear:FL	0.024	0.0989	0.24	0.808
FL:Info_explain	0.081	0.0798	1.02	0.31
FL: Gender_fFemale	0.6523	0.3095	2.11	0.035*

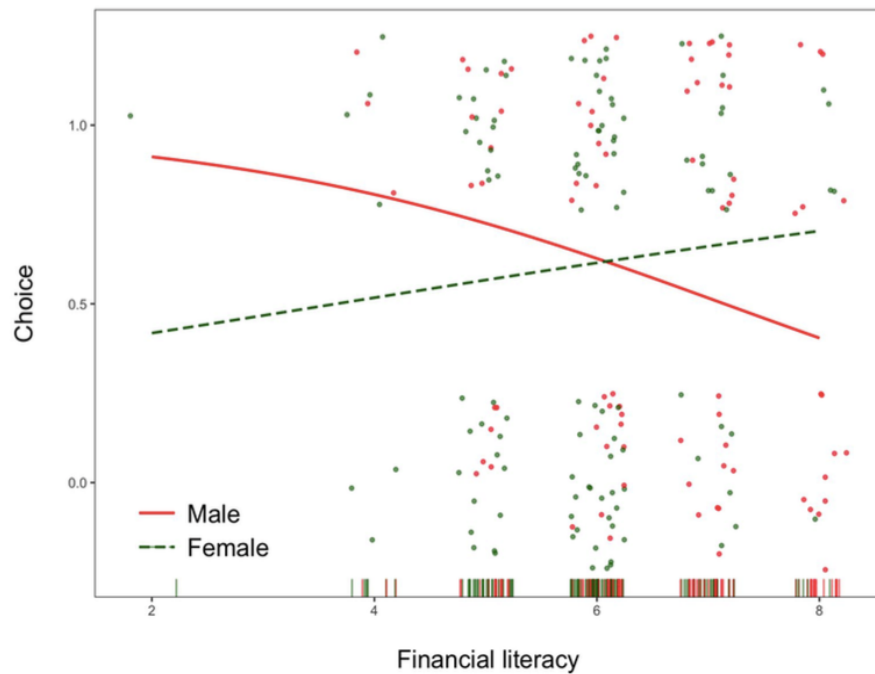Significant codes 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Figure 4. Regression Lines between Males and Females, Choice and Financial Literacy

Table 15 shows the logistic regressions between Gender X FE X Financial anxiety. Results indicated strong interactions between Gender X Info_clear X Choice X FA. This was largely observed among the male participants. Slope analysis between Clarity of information and Choice as well as Willingness to explain information and Choice are illustrated in Figures 5 and 6. In Figure 7, regression lines between gender, choice and financial anxiety are presented. Results show that males with high FA made the choice of opening the bank account more than compared to the males with low FA. Additionally, if the information was indicated as more clear, the male participants with high FA made the choice to open the account. The willingness to explain the information to someone else (Info_explain) had a significant correlation with low FA and had an effect on the choice of opening the account.

Table 15

Logistic Regressions for Gender, Framing Effects and Financial Anxiety

Coefficients	Estimate	Std. Error	z-value	Pr(>|z|)
Intercept	-1.699	2.4	-0.71	0.479
CondSimple	-0.564	0.328	-1.72	0.086 .
Info_clear	-0.954	0.415	-2.3	0.021 *
FAS	0.409	1.05	0.39	0.697
Info_explain	0.806	0.338	2.39	0.017*
Gender_fFemale	2.413	1.147	2.1	0.036*
Info_clear:FAS	0.401	0.178	2.25	0.024*
FAS:Info_explain	-0.262	0.141	-1.86	0.064 .
FAS: Gender_fFemale	-1.078	0.505	-2.14	0.033 *

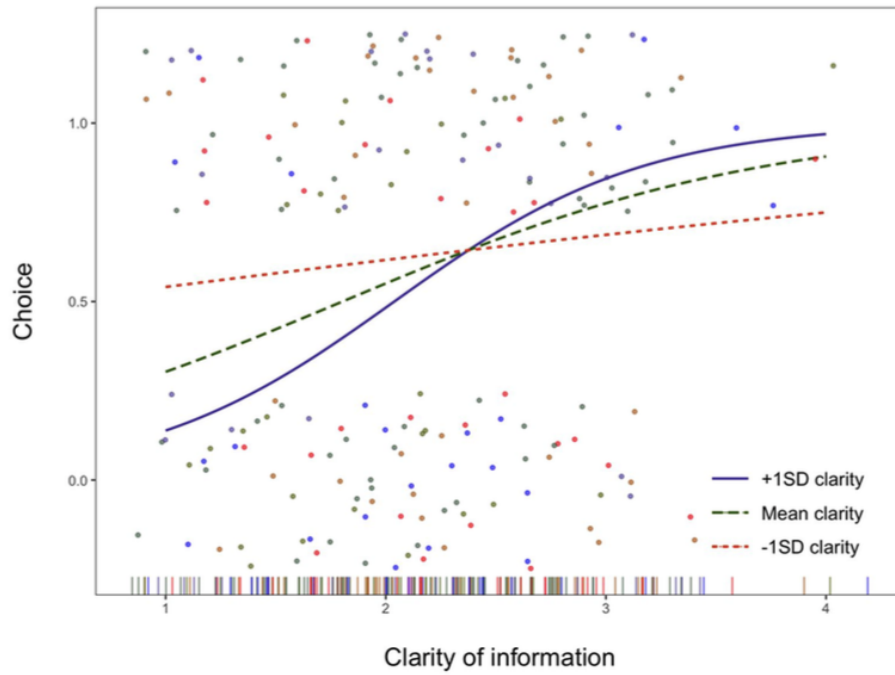Significant codes 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

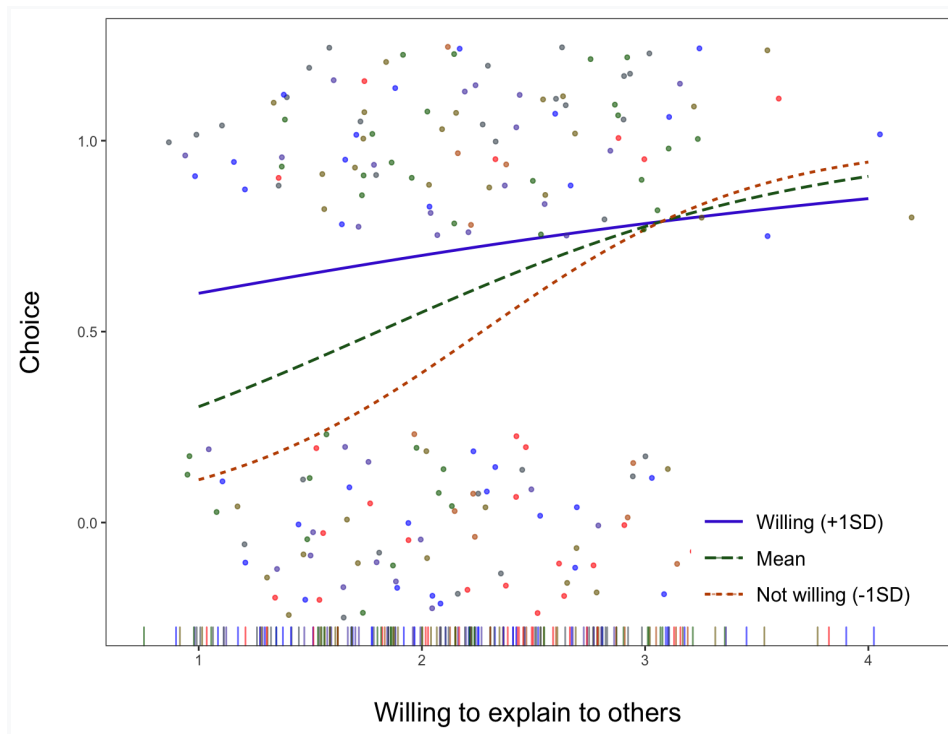*Figure 5.* Regression Lines between Clarity of Information and Choice

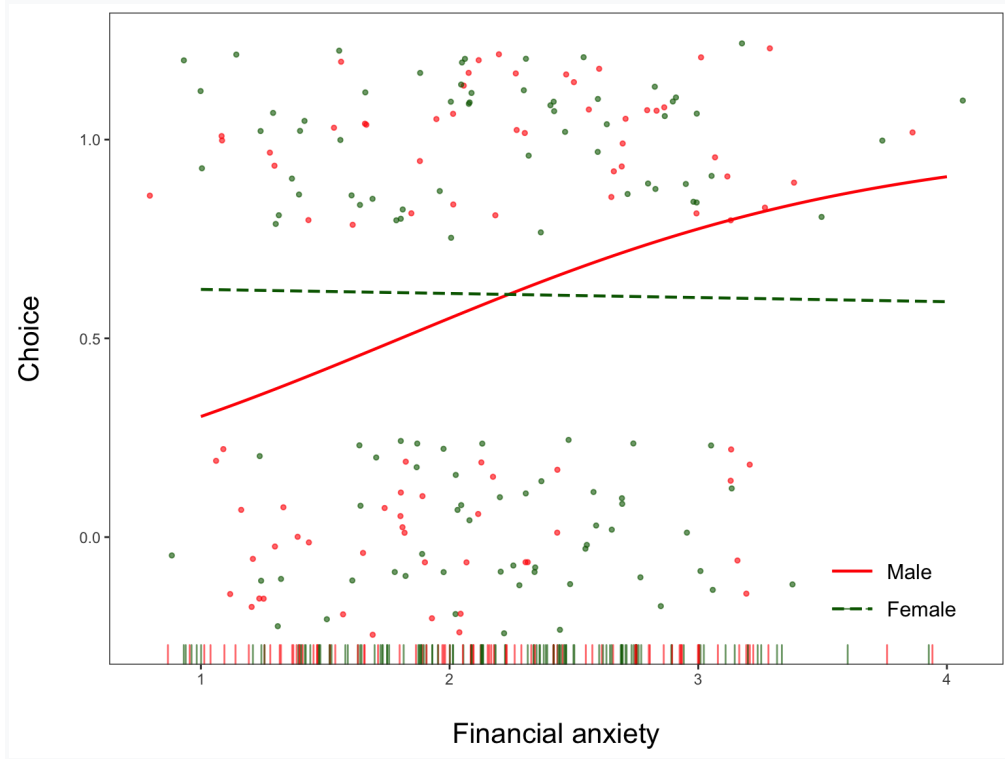*Figure 6.* Regression lines between Willingness to explain information and Choice

Figure 7. Regression Lines between Gender, Choice and Financial Anxiety

In Table 16 the logistic regressions between Gender X FE X TEI are illustrated. Results indicated strong interactions between Gender X Choice X TEI with more of a significance among the female participants.

Table 16

Logistic Regressions for Gender, Framing Effects and Trait Emotional Intelligence

Coefficients	Estimate	Std. Error	z-value	Pr(>|z|)
Intercept	-3.5742	3.68487	-0.97	0.3321
CondSimple	-0.53981	0.32659	-1.65	0.0984 .
Info_clear	0.84959	0.62206	1.37	0.172
TEI	0.64876	0.79839	0.81	0.4165
Info_explain	0.16446	0.46346	0.35	0.7227
Gender_fFemale	-4.94159	1.89649	-2.61	0.0092 **
Info_clear: TEI	-0.1914	0.13449	-1.42	0.1547
TEI:Info_explain	0.00439	0.10283	0.04	0.966
TEI Gender_fFemale	1.05942	0.39693	2.67	0.0076**

Significant codes 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

The slope analysis is shown in Figure 8. The regression lines can be seen to have an opposite direction for females as compared to males. This demonstrates that female participants with high trait EI were more likely to open a bank account, whereas males with low trait EI responded more to say yes in opening the account.
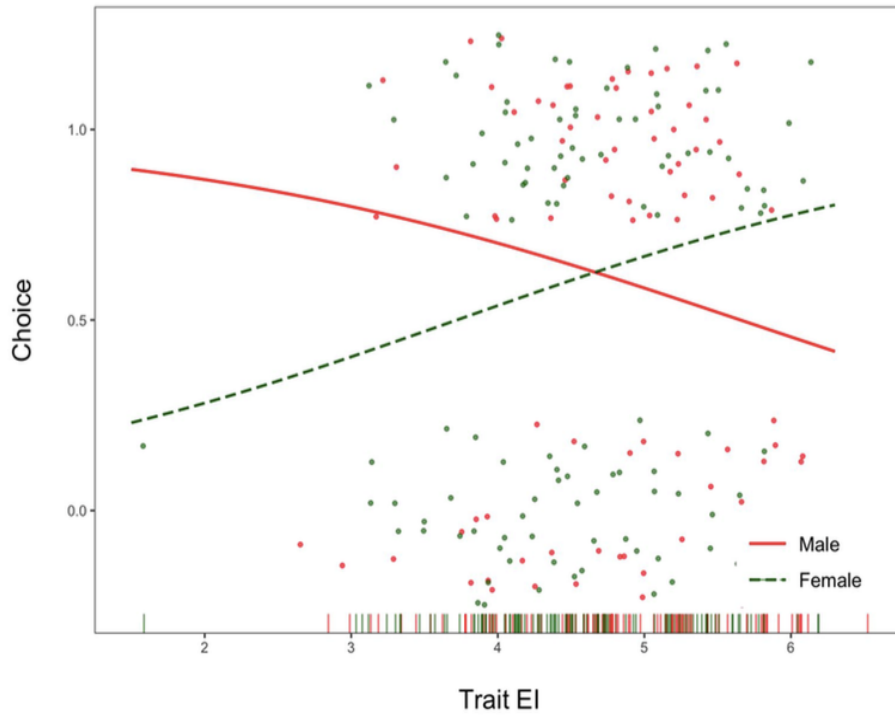
Figure 8. Regression Lines between Gender, Choice and Trait Emotional Intelligence

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter will give emphasis to a discussion based on the main findings, followed by the limitations of the study, and recommendations for future research. Finally, the concluding remarks will be presented.

5.1   Discussion

The primary objective of this study was to determine whether trait EI played a role in the relationship between framing effects, financial anxiety and financial literacy. Another objective was to explore the demographic variables and possible effects or interaction with the independent- and dependent variables.   Results showed that the measuring scales used in this study provided sufficient reliability with coefficients all being above the 0.7 cut-off for social sciences (Lance et al., 2006).

The total sample of participants consisted of 200 Economics and Finance undergraduate students (Males N=85, Females N=112) from the Department of Economics and Finance at the University of Free State, South Africa. The total sample was further divided with regards to the experimental conditions, i.e. Simple condition (N=105) and Complex condition (N=95). From the descriptive statistics, the following observations stood out. The ages of the students ranged between 18-24 and their studies were mostly paid through the National Student Financial Aid Scheme (NSFAS) (44%) and by Parents (32.5%). Most of the students are unemployed (84.5%)

and financially dependent on parents for monthly allowances (89%). The distribution among the students with regards to their annual household income shows a disparity between poor-low emerging middle class income (31%) with annual income less than (<) R 75 000, and a prevalence of 35% students in the upper middle class to emerging affluent with a household income of more than (>) R 225 000. This is an expected observation as South Africa has been known to have extreme wealth inequality among the population due to remaining effects of Apartheid that ended only in 1994 (Chatterjee et al., 2020). The financial behavior of the students revealed that 53.5% manage to save every month and 80.5% of the students do not own a credit card. This finding could be explained as the majority of the students being in the finance field fell in the above average level of financial literacy. As demonstrated in the literature, financially literate individuals are better informed on the issues of credit card use, debt and savings which can improve financial decisions and behavior (Grohmann, 2018; Singh, 2014; Van Rooij et al. 2012).

The independent t-test between the type and effects of the condition indicated that there were variances among the Simple and Complex conditions with participants in the Simple condition reporting that the financial information was easier, clearer with a higher willingness to explain to others. This refers to studies conducted showing that if financial information are too diverse and complex, it requires more cognitive energy to give attention and evaluate the relevant information which can alter a person's choices and behavior (Agnew & Szykman, 2005; Iyengar & Kamenica, 2010; Lewis & Messy, 2012; Rodrigues et al., 2019).

The effects of the conditions did not show a significant effect on the choice to open a bank account or not. This finding could be explained by the background of the students being in

the financial field and by proxy more known and comfortable with the financial information. In this regard, an adaptation of the manipulation conditions could reveal a different effect.

The correlational analysis showed negative correlations between financial anxiety and financial literacy, and that participants with higher trait EI reported lower financial anxiety levels and scored higher on financial literacy. These results must be carefully interpreted, although they provide similar directions as proposed in other research studies. For example, Lusardi (2019) found a relationship between high financial anxiety and low financial literacy levels, whereas Hasler et al. (2021) showed that increasing one's financial literacy through financial education alleviates financial anxiety. In respect of Trait EI and its relationship with financial anxiety and financial literacy, research has suggested that people high on trait emotional intelligence are able to deal with stress, employ more adaptive emotional regulation strategies (such as cognitive appraisal) and display a greater sense of economic self-efficacy (Bucciol et al., 2020; Engelberg & Sjoberg, 2006; Hadi, 2017; Imam et al., 2022; Zanella et al., 2022).

Moreover, the results yielded no moderation or mediation effects of trait emotional intelligence with effects of condition, choice, financial anxiety and financial literacy. This could imply that the presented financial information and choice was not emotionally charged enough to necessitate an emotional regulatory response from the participants. According to Penã-Sarrionandia et al. (2015) Trait EI as a personality dimension representing behavioral dispositions differ depending on individuals' experience and the specific situation they face. To this effect, the role of trait EI have been successfully demonstrated in other studies with a focus more on financial risk taking (Bucciol et al., 2020), investment decision making (Rubaltelli et al., 2015) and risk return relationships (Priolo et al., 2022).

An interesting result based on the mediation analysis revealed that the willingness to explain information to others, mediated the effect between type of condition and choice. This was found to be especially relevant in the Complex condition. This finding suggests that when financial information is complex, participants' ability and willingness to explain the information about the account to others predicted the likelihood to choose to open the account. There is a general consensus from proponents of dual process theory, that cognitive appraisal (Miu & Crisan, 2011) and engagement to information in a more analytical and deliberative approach (i.e. System 2) can increase effective decision making (Thomas & Millar, 2012).

Through MANOVA a significant effect of Conditions (Complex) and information clarity on financial literacy was found. This suggests that in the condition with financially complex information, clarity of information mediated financial literacy. Advocates of financial education programmes to increase financial literacy agree that it is crucial that financial information should be more clearer and understandable to encourage people to make informed financial decisions (Lewis & Messy, 2012).

Exploratory analysis reported gender effects interacted with effects of the condition, financial anxiety, financial literacy and TEI.

In regards to financial anxiety, males with higher levels of FA were more likely to say yes to open the account compared to their male peers who reported lower FA. Also, highly anxious males who found the information of the account to be clearer, were more likely to say yes to open the bank account. In contrast, males with lower levels of financial anxiety and an increased willingness to explain the information to others had an effect on the choice of opening the account. Research has indicated that financial anxiety can have an effect on financial

decisions and is mainly influenced by the type and amount of financial information a person processes (Shapiro & Burchell, 2012). To this effect, highly financially anxious individuals display more emotionally based decision making, reaction latencies in the processing of financial information and reduced tendencies to seek additional information in order to assist effective decision making (Rieger, 2020; Shapiro & Burchell, 2012; Soane et al., 2015). Outcomes of financial anxiety can range on a continuum from excessive financial avoidance (Klontz et al., 2011) to impulsive choices (Fields et al., 2014, Xia et. al., 2017).

A two sample t-test revealed that males had a higher financial literacy (M=6.44) compared to the females (M=5.84) with a 0.60 difference. This corresponds with other research demonstrating women from advanced and developing countries are lower on financial literacy due to factors such as economic inequality and type of socialization at home (Bucher-Koenen et al., 2016; Lusardi & Mitchell, 2011). The female students in the present study well represented the finance and economic field (N=112) compared to the male students (N=85), thus signifying that women are increasingly entering these sectors (von Hippel et al., 2015). Unfortunately, finance is still largely regarded as a masculine domain and stereotypical beliefs about gender and finance still exist (Tinghög et al., 2021). Furthermore, the results showed a distinction between males with high FL and low FL, where high FL males were more likely to say No to opening a bank account compared to males with low FL that made the choice to open the account. This results might related to other studies, indicating that higher financial literacy among men is positively linked with level of confidence in making financial calculations, feel more empowered to gain additional financial information and are less prone to impulsive decisions (Tahir et al., 2021; Tinghög et al., 2021).

A novel finding related to gender differences in relation to TEI and Choice with more of a significance and opposite effect evident among the female participants. Females with high TEI had a positive relationship with choice (i.e., choice to open a bank account) whereas males with low TEI made the choice to open the account. Although inconsistent findings exist among gender differences in Trait EI, Fischer et al. (2018) in a research among 455 undergraduate students found higher levels of TEI among females as compared to males and explained it in context of females having more intensive perceptions and experiences of emotions. In a study on financial decision making, Farrell et al. (2016) reported females with higher trait EI displayed more confidence and self-efficacy in making financial decisions.

5.2   Limitations and Future Recommendations

In the interpretation of the results of this study the following limitations should be considered. The participants in this study were mostly undergraduate Finance and Economic students enrolled at the University of the Free State. These undergraduate students may not be representative of undergraduate students in general. Even so, given the exploratory nature of the study, this sample provided insights that are unique. In addition, the financial behavior of undergraduate finance- and economic students might be more specific and different from those of the general student population which must be taken into account in the interpretation of the results.

The data collection was completed through an online survey which could place limits on collection and validity of data due to issues of response rate and non-respondent characteristics (Nayak & Narayan, 2019). Nonetheless, the use of an online survey in this study pertained to easy access, user-friendly, cost-effectiveness and the convenience of acquiring automated data

(Mertler & Vannatta, 2016; Nayak & Narayan, 2019).

Despite these limitations, the main goal in choosing students in South Africa was to fill a knowledge gap in research relating to their experience of financial anxiety, levels of financial knowledge and financial behavior. In addition, the lack of research in the field of trait emotional intelligence in South Africa has been highlighted. Thus, the choice of the sample of students was not borne out of convenience but was purposeful. With regards to the measurements, a common limitation for all survey studies is the bias of self-reported answers (Lavrakas, 2008). For this reason, existing assessment tools were used and the data analysis process was robust enough to absorb this.

The recommendations made on the results from this study are that research on trait emotional intelligence and financial literacy as it relates to financial decisions should be a continuous process. This is to allow further exploration of other possible dynamics that may play a role within a larger goal of establishing predictors of financial decision making and to develop financial resilience during uncertainty.

The finding of a higher level of financial literacy among this student group was interesting but expected, given that this is the field of their study. Future research comparing student groups from different fields to ascertain the level of FL will increase generalisability.

As no moderation or mediation effects between trait emotional intelligence and effects of condition, choice, financial anxiety and financial literacy were found, the effect of the condition can be altered to include more emotionally charged choices related to financial risk taking among students including aspects such as loans or investment choices to get a clearer effect of Trait EI as an emotional regulation strategy.

More research in developing countries is important in steering away from traditional research in Western, Educated, Industrialized, Rich, and Democratic countries (WEIRD). Incorporation of more studies based in Africa can shed light on the presence of other predictor variables such as gender, race and cultural influences to increase understanding of human behavior related to financial decision making processes. Finally, another potential study can make a comparison between students from developed countries and South Africa. This can provide valuable information regarding possible psychosocial variables and encourage more specialized financial education programmes that will fit the unique needs of the students.

5.3   Conclusion

A major aim of the Sustainable Development Goals (SDGs) identified by the United Nations is to end poverty and reduce wealth inequality. This is undertaken through policies and programmes that encourage and assist citizens to become more economically productive (United Nations, 2018). Unfortunately, low levels of financial literacy remain a challenge worldwide warranting attention from academic researchers in the financial decision making field. This study aimed to contribute to the field of Behavioral Economics by focusing on the role of emotions as an explanation for the diverse financial behaviors among people. Framing effects influence a person's choice based on how information is framed. Financial anxiety, includes affective states that range in frequency and intensity from worry, fear, or unease about one's personal finances, and can lead to either avoidant or impulsive financial behavior. As above, requires the effective regulation and management of emotions, Trait EI, as a cognitive-emotional skill, is proposed as a necessary resource to enable more healthy financial decision making.

Compared to other countries, South Africa continues to report the lowest financial literacy levels (OECD, 2020). This provided an unique context for research to be conducted within the Behavioral Economics field and more specifically, the student population of which socio-economic challenges are well documented (Ramavhea et al., 2017).

Overall, the study highlighted that efforts from Universities and Faculties can assist students to increase their financial knowledge or literacy levels and manage financial anxiety through investing in TEI skills training. Incorporating TEI in financial education will not only contribute to more healthy financial decisions but can extend to the holistic well-being of each student (Gilar-Corbi et al., 2018).

The gender variability observed in respect of financial anxiety, financial literacy, trait EI and choice has implications for more specialized skills training to address the unique needs that may arise among the different gender groups.

Lastly, the way information is presented does seem to matter. The effect on how financial information is perceived as easy, clear and the willingness to explain to others has on financial choices is an important finding. As such, recommendations to financial institutions are to place more emphasis on providing easy, clear and understandable information on financial terms and products in order to facilitate healthy informed financial decisions among individuals.

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Appendix 1

Online survey for South Africa

<div align="center">

INFORMED CONSENT TO CONDUCT STUDY ONLINE

</div>

Dear participant,

we propose you to join an on-line study whose purpose is to study the role of emotions in financial decision making among students.

DESCRIPTION

The questionnaire is divided into the following parts:

1. Financial information and decisions- 6 questions

2. Financial knowledge- 8 questions

3. Attitude towards money and finances - 9 questions

4. Experience of emotions- 30 questions

The time required for compilation is approximately 10 minutes.

DATA PROCESSING

All information collected in this research will be treated in compliance with the current laws of Legislative Decree 196/2003 on privacy and EU GDPR 679/2016 on the protection of personal data and art. 9 of the Deontological Code of Italian Psychologists. Your data will be analyzed anonymously and with all the criteria that guarantee maximum confidentiality, used only for the purposes of the research itself.

The research manager is Prof. Enrico Rubaltelli, belonging to the Department of Developmental Psychology and Socialization (DPSS) of the University of Padova.

The research manager undertakes to fulfill the obligations established by current legislation in terms of collection, processing and storage of sensitive data. Each participant has the right at any time to exercise the rights referred to in art. 7 of Legislative Decree 196/2003. The data, collected and processed in aggregate and anonymous form, may be included in publications and / or presented at conferences or scientific seminars.

The processing of your data will be started only with the signing of this consent.

I DECLARE:

- To be of age

- To voluntarily participate in the implementation of the research as a participant

- To be aware of the objectives and aims of this research project

- To be aware that the data obtained, in absolute anonymity, will be processed exclusively for educational and research purposes

- To be aware that it is not possible to obtain the return of the data collected once sent.

For any clarifications, it is possible to contact the researcher, Hilda du Plooy at e-mail: [hilda.duplooy@studenti.unipd.it].

Thank you so much for your valuable contribution!

By continuing to fill in the questionnaire, I agree to participate in the research.

- Yes, I agree
- No, I do not agree

- **Condition A: Simple - Savings account**

In the following section you will receive information about a financial product.

Please read ALL of the text carefully.

Please read the following information about a savings account that is available from your local bank. This product is a basic deposit account allowing you to save money and earn interest on the amount you put into your account while also having the option to withdraw it at any time. This bank offers you an interest rate of 5% which refers to the money you earn and will be paid into your account either once a year or once a month. The rate in (%) tells you how much money will be paid into your account, as a percentage of your savings. For example, if you deposit 100 euro with a 5% interest rate you will earn 5 euro per year*. For this savings account, an initial amount of deposit is required upon opening the account. Account fees will be deducted each month and a minimum balance will be maintained in your account.

Projective illustration on a 100 euro deposit: 5% interest rate = 0.05

100 euro x 0.05 = 5 euro per year (the rate is variable which means it can go up or down)

- **Condition B: Complex - Savings account**

Please read the following information about a savings account that is available from your local bank. This entry level product is a basic account allowing you full control and the ability to make deposits and withdrawals according to your unique needs. This bank offers you an interest rate of 5% which refers to the monetary charge for the privilege of borrowing your money, typically expressed as an Annual Equivalent Rate (AER)*. We offer to our clients an optimized interest return by maintaining a diversified portfolio thereby addressing risk of interest fluctuation. This product option requires an initial amount of deposit and deduction of monthly administrative fees calculated on the activity on your account. A minimum balance will have to be maintained in your account.

*Projective illustration on a 100 euro deposit: 5.0% AER/Gross p.a (variable)

AER stands for Annual Equivalent Rate and illustrates what interest rate would be if interest was paid and added each year.
The gross rate is the interest rate payable before the deduction of tax. A variable rate will go up or down.

From the above information you have read 5% interest rate means?

Choose the correct option:

☐ 5% = 0.05 and is not variable
☐ 5% = 0.05 and is variable **(correct answer)**
☐ 5% = 0.50 and fixed
☐ None of the above

How easy or difficult did you find the information?

☐ Extremely easy
☐ Neither easy or difficult
☐ Extremely difficult

How clear was the information? (From 1, not clear at all, to 9, extremely clear).

Not clear at all								Extremely clear
1	2	3	4	5	6	7	8	9

How clear was the information?

Would you be able to explain to another person what type of product the bank is offering?
(From 0, Absolutely not able, to 9, Absolutely able).

Absolutely not able 0									Absolutely able
	1	2	3	4	5	6	7	8	9

Would you open a bank account with this bank?

☐ Yes
☐ No

"How would you rate your level of financial knowledge on a scale of 1 to 5 compared with other students at your university? " (1 = Well below average, 5 = Well above average)

	Well below average 1	2	3	4	Well above average 5
Your level of financial knowledge					

Please read and answer the following questions:

1. You lend R 25 to a friend one evening and he gives you R 25 back the next day. How much interest has he paid on this loan? **(0= correct answer)**

2. Imagine that five brothers are given a gift of R1,000. If the brothers have to share the money equally, how much does each one get? **(200=correct answer)**

3. Now imagine that the brothers have to wait for one year to get their share of the R1,000 and inflation stays at 3 percent. In one year's time will they be able to buy:

☐ More with their share of the money than they could today
☐ The same amount
☐ Less than they could buy together **(correct answer)**

4. Suppose you put R100 into a no fee saving account with a guaranteed interest rate of 2% per year. You don't make any further payments into this account and you don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made?

☐ More than R 102
☐ Exactly R 102 **(correct answer)**
☐ Less than R 102
☐ Do not know

5. How much would be in the account at the end of five years, remembering there are no fees?

    ☐ More than R110   **(correct answer)**
    ☐ Exactly R 110
    ☐ Less than R 110
    ☐ Impossible to tell from the information given
    ☐ Other

Please indicate whether the following statements are **True or False**.

6. High inflation means that the cost of living is increasing rapidly. **True**/False

7. An investment with a higher than average return is likely to have a higher than average risk. **True**/False

8. It is less likely that you will lose all of your money if you save it in more than one place. **True**/False

Please read the following statements and indicate from 1= Completely untrue to 4=Completely true

1. I prefer not to think about the state of my personal finances.
2. Thinking about my personal finances can make me feel guilty.
3. I am worried about the debt I will have when I complete my university education.
4. Thinking about my personal finances can make me feel anxious.
5. I get myself into situations where I do not know where I'm going to get the money to "bail" myself out.
6. Discussing my finances can make my heart race or make me feel stressed.
7. I do not make a big enough effort to understand my finances.
8. I do not think I am doing as well as I could academically because I worry about money.
9. I find opening my bank statements unpleasant.

Please read the following statements and indicate from 1=Strongly disagree to 7=Strongly agree

1.   Expressing my emotions with words is not a problem for me.
2.   I often find it difficult to see things from another person's viewpoint.
3.   On the whole, I'm a highly motivated person.
4.   I usually find it difficult to regulate my emotions.
5.   I generally don't find life enjoyable.
6.   I can deal effectively with people.

7. I tend to change my mind frequently.
8. Many times, I can't figure out what emotion I'm feeling.
9. I feel that I have a number of good qualities.
10. I often find it difficult to stand up for my rights.
11. I'm usually able to influence the way other people feel.
12. On the whole, I have a gloomy perspective on most things.
13. Those close to me often complain that I don't treat them right.
14. I often find it difficult to adjust my life according to the circumstances.
15. On the whole, I'm able to deal with stress.
16. I often find it difficult to show my affection to those close to me.
17. I'm normally able to "get into someone's shoes" and experience their emotions.
18. I normally find it difficult to keep myself motivated.
19. I'm usually able to find ways to control my emotions when I want to.
20. On the whole, I'm pleased with my life.
21. I would describe myself as a good negotiator.
22. I tend to get involved in things I later wish I could get out of.
23. I often pause and think about my feelings.
24. I believe I'm full of personal strengths.
25. I tend to "back down" even if I know I'm right.
26. I don't seem to have any power at all over other people's feelings.
27. I generally believe that things will work out fine in my life.
28. I find it difficult to bond well even with those close to me.
29. Generally, I'm able to adapt to new environments.
30. Others admire me for being relaxed.

DEMOGRAPHIC INFORMATION

Age	18-24	25-35	36-55	56-65
Gender	Male	Female	Non-Binary/Third gender	Prefer not to say
Marital status	Single	Married	Prefer not to say	
Degree:	Bachelors	Honours	Masters	PhD

Studies paid by
- ☐ Scholarship/bursary
- ☐ Parent(s) / Guardian(s)
- ☐ Self
- ☐ National Student Financial Aid Scheme (NSFAS)
- ☐ Other

Employment   Full time   Part time

What is your parent/s' income per year (p.y) (if both parents working combine income):

- ☐ Less than R 75 000
- ☐ R 75 000 - R 110 000
- ☐ R 110 000 – R 150 000
- ☐ R 150 000 – R 190 000
- ☐ R 190 000 – R 225 000
- ☐ More than R 225 000

Are you financially dependent on your parents for expenses?   Yes   No

Do you receive a pocket allowance for discretionary expenses (i.e meals in restaurants and entertainment)?   Yes   No

What is your best estimate of your total monthly living expenses? This includes accommodation, transport, meals, entertainment)

- ☐ Less than R 6 500
- ☐ R 6 500 - R 10 000
- ☐ R 10 000 - R 13 000
- ☐ R 13 000 - R 16 000
- ☐ More than R 16 000
- ☐ More than R 225 000

Do you manage to save money every month?   Yes   No

Do you have a credit card? Yes   No

(if answered yes) How confident are you that you will pay off your credit card in the next 12 months?

|------------------------|------------------------|--------------------------|---------------------------|
Very low   Low   Neutral   High   Very high

DEBRIEFING CONSENT FORM

Principal Researcher: Hilda du Plooy (hilda.duplooy@studenti.unipd.it)

Debriefing and Consent to process data

Thank you for participating in our study. We appreciate your time and effort.

This study was actually investigating how emotional intelligence (the way people express, manage and regulate their emotions) plays a role in the relationship between framing of financial information, financial anxiety and financial literacy. In order to not bias your responses, we initially described the study purpose in general terms, but you can find more details below.

In the first part you were randomly allocated a type of experimental condition (framing of financial information that was either complex or simple) and a financial scenario evaluating your inclination towards gains and losses. After that, all the participants had to complete the same questionnaires measuring financial literacy (financial knowledge), financial anxiety (worry/concern about personal finances) and lastly, emotional intelligence (ability to express, manage and regulate emotions).

Through this study, we hope to benefit from an increased understanding of how people differ in their understanding and decision making process of financial matters and how emotions play a role. If you experienced any discomfort from the participation in this study, please contact the principal researcher. In order for us to proceed with the processing and analyzing of your data, we need your informed consent.

I consent to my data being further processed.

- Yes, I agree
- No, I do not agree