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The Effect of Optimism on Financial Help Seeking

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“The Effect of Optimism on Financial Help Seeking”

Abstract

The study examines the effect of optimism on financial help-seeking behavior. 110 respondents completed a survey that measured their level of optimism/pessimism. They completed an investment task, in which they could use costly financial help. Financial help took the form of additional information of the stocks. We use two different measures of optimism: one relating to the best return on risky assets and the other relating to the worst return. Using logistic regression, we find no significant effect of optimism on help-seeking. We find, instead, evidence for the effect of gender, age and education. Besides insignificance, we find that controlling for other variables, there is positive relationship between optimism about the worst return and help-seeking, while this relationship is negative for optimism about the best return.

Keywords

Optimism, Financial help-seeking, Financial advice, Investment task

1. Introduction

Information has become the fuel that drives the engine that is our economy. With more and more of it becoming accessible, it can become a daunting task to choose which type to trust to bring you the furthest along to your goal. This is especially true in the financial sector, which moves at the whims of millions of investors possessing excess cash.

This subjectivity gave birth to a market to help facilitate these individuals in reaching their desired return, the market of financial advisors. This development is with good reason, as research from Koewn (1998) shows that seeking financial help has a positive effect on financial outcomes. However, for this to hold true the individual needs to receive this advice for at least 4 years before this effect becomes significantly positive compared to someone without financial advice (Montmarquette & Viennot-Briot, 2015).

For every individual that does not have significant prior financial knowledge or experience, there is an increased risk to lose money or miss out on a higher number of profits (Koewn, 1998). It is the goal of this paper to go deeper and build upon the knowledge on financial-help-seeking behavior. In the literature precursory work has already been done, the process of seeking help specifically in a financial context has already been defined by Grable & Joo (2001). Furthermore, there is plenty available about the decision-making process, in part thanks to previous research by Kunda (1990) as well as Epley & Gilovich (2016).

Financial advisors help through diversification, as well as emotional value given through safety and clarity, giving confidence to the individual receiving help (Marsden & Zick, 2011; Allie, West & Willows, 2016; Pagliaro & Utkus, 2019; Letkiewicz et al, 2015). What financial advisors fail to do is improve the risk-adjusted portfolio returns, as these are not significantly higher for individuals that receive financial advice, compared to those who do not receive this advice (Marsden & Zick, 2011; Foerster et al, 2014; Allie, West & Willows, 2016).

Despite the merits of professional help, many forgo financial advice. This can result in biased choices made by the decision maker, such as chasing returns based off historical data, which is proven to be inefficient, yet individuals still do this (Clark-Murphy, Gerrans & Speelman, 2009; Haghani & Mcbride, 2016; Baquero & Verbeek, 2015). Potential reasons for this decision may be

that there is limited trust in advisors or that help is too costly (Lachance & Tang, 2012). However, a different approach will be taken in this research, namely the role of optimism will be examined on the individuals' willingness to accept and/or seek financial advice.

Optimism has been of interest in the scholarly world. Prior research points to the link between optimism and help seeking mechanisms in health-related sectors (Spendelow & Jose, 2010; Hirsch, Conner & Duberstein, 2007). Furthermore, there has been plenty of research on how optimism affects behaviour in the financial market (Gakhar, 2019; Concetto & Ravazzolo, 2019; Bracha & Brown, 2012), however how this optimism affects the search for help in their financial endeavours has not been sufficiently touched upon.

Knowing what impact optimism has on seeking financial advice, can help in convincing those who are vulnerable to financial deception to seek help before investing. Answering this question can also help us understand why people forego help even when their financial position is in jeopardy. This needs not only be in the stock market, if one understands what drives an individual to seek financial help, it will be possible to better encourage those who need help to seek it, preventing the societal costs of people in financial ruin.

We summarise the study's research question below:

"How does optimism about outcomes on the financial market, influence investors' willingness to seek professional help with regards to their financial decision-making?"

2. Theoretical Framework

The relationship between optimism and financial help seeking has not yet been sufficiently touched upon within the literature. There have been links between optimism and financial behaviour but lacking the link to the mechanisms of help-seeking in this context (Jureviciene & Jermakova, 2012). In this theoretical framework we will go over the mechanisms behind financial advice seeking as well as optimism. We will then link these two together and find determinants that strengthen or weaken this relationship. Our research question is as follows:

"How does optimism about outcomes on the financial market, influence investors' willingness to seek professional help with regards to their financial decision-making?"

For financial advice we use the framework of Grable & Joo (2001), who summarize the help-seeking cycle specifically for a financial context. We go through all the steps from the framework from the initial exhibition of a financial behaviour to the more influential steps such as choosing to get financial help as well as the choice between possible alternatives. Here we unravel the determinants of seeking for financial help ranging from financial awareness and efficacy to income, but also, a step further in the process of making a choice between alternatives which mainly is driven by trust and costs (Lachance & Tang, 2012). According to Jureviciene & Jernakova (2012) optimism is a variable that significantly influences the decision-making process within the investing context however in the literature there lacks a link to financial advice.

In the literature regarding optimism, we find an overestimation of positive events and an underestimation of negative events, which leads to an inaccurate estimate of the risk of an asset for example (Sharot, 2011). Because of this difference in information, we believe that there is a difference in the behaviour towards seeking help as well. Our main hypothesis uses the overestimation of positive events as a sufficient outcome for the optimistic individual, in turn not feeling the need to seek financial help, which is summarized here:

Optimistic (pessimistic) people will be less likely (more likely) to seek financial help, compared to pessimistic (optimistic) people.

2.1. Financial advice-seeking

In order to understand help-seeking in a financial context, it is important to know first why people seek help in the first place. It sounds logical, but there needs to be a "problem" in order for people to seek help (Lee, 1997). Lee (1997) finds that people tend to stay away from seeking or accepting help, because it implies that the individual has a certain level of incompetence and is therefore dependent on other people to solve their "problems". Because of this, individuals might not even accept that they are facing problems in the first place. Rhi et al (1995) see help-seeking as a "process of successive decisions", which are influenced by a set of knowledge, attitudes and other socioeconomic variables. This definition finds a basis in the research created by Suchman (1966), who defines the process of seeking help as follows: Symptom evaluation → Symptom cause → Decision to make treatment or not → Choice of treatment.

The framework from Suchman (1966) is the foundation used the research by Grable & Joo (2001), who have taken this framework and implemented it in a financial context. It is close to the original framework from Suchman, however added one preliminary step, which is the "exhibition of a personal financial behaviour". Important to note is when they talk about a financial behaviour, in this research we are looking at financial behaviours that are negatively impacting the individual, in an investment context, not just general financial behaviour. The 5 steps from the Grable & Joo (2001) research will be shown below and discussed further as the main basis of the help seeking process, specifically in a financial context:

1. *Exhibition of a personal financial behaviour*
2. *Evaluation of the financial behaviour*
3. *Identification of cause financial behaviour*
4. *Decision to seek help*
5. *A choice between help alternatives*

Starting at the *exhibition of a personal financial behaviour*, with specific interest to financial behaviours that negatively influence the individual. Many people are poorly educated about financial topics and therefore make irrational decisions, which leads to the exhibition of poor financial behaviour (De Meza, Irlenbusch & Reyniers, 2008). In Australian research regarding financial literacy, they discovered three main considerations that could lead to poor financial

behaviour as consumers tend to look over key topics regarding investment decision-making, which were: risk-return and regarding diversification, over-optimism about return and price insensitivity (Capuano & Ramsay, 2011).

One example of such poor financial behaviour is posed by Clark-Murphy, Gerrans & Speelman (2009), which is the phenomenon of return chasing, this entails that individuals predict the future returns by taking the past returns as main explanatory factor. Individuals that decide to chase returns, compared to "momentum investors", "trend followers" or a 50% split between stocks and t-bills, return chasers have a lower return also with higher losses (Haghani & Mcbride, 2016). The inefficiency from return chasing compared to rational models used for historical data is further confirmed by Baquero & Verbeek (2015).

This idea is basically a heuristic that individuals use to make the complex task of investing, more understandable for themselves, however is, on average, not efficient. The idea of these heuristics find a basis in the research of Tversky and Kahneman (1974). More specifically they presented evidence that individuals are generally not good at estimating the likelihood of certain events to take place. This goes both ways, both in estimating the likelihood of their investments to succeed as well as losing money on their investments.

Moving on to the *evaluation of the financial behaviour*, which relates to an individual's self-assessment, however people may overestimate their knowledge about financial concepts (Bazley, Bonaparte & Korniotis, 2021). They also find that the people that are aware of their lack of knowledge, opt out of participating in the stock market. Another factor that is negatively related to financial self-awareness is income, this means richer people tend to be less self-aware which also affects the evaluation of the potential problem (Bazley, Bonaparte & Korniotis, 2021). From this we conclude that people with less/unstable income are more self-aware than richer people, ceteris paribus, which is important to note in the process for evaluating the problem.

The identification of the cause of the financial behaviour could prove to be quite difficult, relating back to the lack of self-awareness as well as the overestimation of certain knowledge. Jureviciene & Jermakova (2012) study the effects of different behaviours that influence their decision-making

in this context. The basic behavioural factors that can cause a certain financial behaviour, they discuss are:

- **Fear** of losing money.
- Falling in **love** with certain shares that has earned them money, kind of like sentimental value.
- **Greed** which relates to large quantities of potentially risky stocks that are heavily priced.
- **Optimistic** people tend to believe the outcome will be alright, which could lead to entry without a sound logical basis.
- People with less financial knowledge tend to show **herd instinct**, which is following people who seem to know more about the topics.
- **Tendency of focusing on recent experiences**, which is recency bias.
- Tendency to show **overconfidence** in their own knowledge.

If we take the example mentioned earlier from return chasing, we can identify what specific mechanisms influence individuals to get into biased behaviour. From the different behaviours posed by Jureviciene & Jermakova (2012), that have an influence on return chasing are greed, optimism, and the tendency to focus on recent experiences. If the individual is aware of these dimensions, they could be able to identify the cause of why they are making certain errors in their decision making. If they are not able to identify such a cause, they might benefit from financial help, which is the next step within this framework.

After the individuals have recognised their problem and evaluated it, the most critical point in the process is *the decision to look for help or not* (Grable & Joo, 1999). After having successfully evaluated and identified the behaviour exhibited, the two most important factors are trust and costs trust and costs (Lachance & Tang, 2012). In a survey conducted in America almost half the respondents stated they did not know which sources to trust when it comes to financial advice, with 40% thinking financial advice is too expensive (Burke & Hung, 2015).

The first factor we address is *trust*, which is context-based, when speaking about trust it is not a general measure of trust, but trust within a financial context. The definition of trust in this financial context depends on whether the individual believes that the financial advisor will not "cheat" on

the promised behaviours (Guiso, 2012). This means that if the advisor deviates from the wishes of the consumer, trust will decrease in the advisor.

In the analysis of Lachance & Tang (2012), the 5 most significant variables related to trust were: Age, willingness to take risk in investment context, receiving any kind of financial advice, satisfaction financially and financial literacy. The most significant variable in this regression analysis was the willingness to take risk, here they find similar implications to the research of Hanna (2011), which is people that are less willing to take risk, are less likely to use financial planners. The relationship between willingness to take risk and trust is positive, meaning that risk-seekers are on average more trusting in financial advisors. It has also been shown that individuals with a higher general level of trust, tend to hold more stocks and participate more in the stock market (Burke & Hung, 2015). This relates to the more optimistic view of the people with a higher level of trust in general and therefore in the financial market, as they are participating more in buying stocks. The individuals with a lower degree of trust, tend to buy lower risk assets and participate less in the stock market (Burke & Hung, 2015), revealing their general optimism about the outcomes of the financial market.

In figure 1 we see the OLS estimator from Burke & Hung (2015), where the binary dependent variable takes the value of 1 when the advisor has been paid for. They use trust as the main explanatory variable, while controlling for individual characteristics in vector X_i. Financial trust had a positive effect on seeking financial help, which was statistically significant at the 5% level across all three measures of financial advice, ranging from retirement decisions to advising and planning help. This shows us trust is indeed a significant variable in explaining whether an individual would want to take financial advice and we would like to control for this in our model, which leads us to our first hypothesis:

$$Y_i = \alpha + \beta\, trust_i + X_i'\delta + \varepsilon \quad (1)$$

Figure 1: OLS estimator of trust on financial advice

H1: More generally trusting people are more likely to seek financial help, compared to less trusting people.

The other factor that is related to whether an individual chooses for a financial advisor are the *costs* of acquiring the financial advice/advisor. This has a relation to socio-economic factors, for

example like income, if the individuals do not have the money available to get financial help, they can and therefore will not get it (Tang & Lachance, 2012). In Canadian research on, amongst other things, the costs of financial help, they show that on average the fees are 2.5%, which even some of the best investors fail to cover these fees and make a decent profitable return (Foerster et al, 2014).

Especially with the compensation structures of financial advisors, it is possible that through non-aligning ideals, it becomes more costly for the consumer, as the advisor could maximize their own commissions (Linnainmaa et al, 2015). Hackenthal & Inderst (2012) see the costs, but mostly the structure of how the advisor gets paid, as one of the biggest problems. Through a more transparent payment structure, the advisor can give unbiased advice and this way the consumer exclusively pays for the advice given (Hackenthal & Inderst, 2012).

In the literature, a third reason besides trust and costs arise on financial help seeking, which is risk attitudes. What we see is that more risk-averse people tend to seek for help more (Bluethgen et al, 2008), which feels both not logical as well as logical. It does not feel logical at first glance because the risk-averse people tend to go for stocks with less risk and therefore less return than those who go for risky assets (Bluetghen et al, 2008), this way with an additional cost to an already lower return, it feels counter-intuitive. On the other hand, it does feel logical as people who are risk-averse, want to carry as little risk as possible and through professional financial advice, get help with diversification (Marsden & Zick, 2011; Allie, West & Willows, 2016). Because of this ambiguity we would like to test the hypothesis of this relationship between risk and help-seeking, this leads to:

H2: Risk-seeking people are less likely to seek financial help, compared to risk-averse people.

The final step of the framework is the *choice of the treatment*. In this case, the individuals can choose to find help from people close to them, such as friends or colleagues. However, the most important distinction is those individuals who look for professional financial help, this has been addressed by Grable and Joo (2001). They find the groups of people who are more inclined to look for financial help: individuals with more income, better financial behaviours, a more positive mental outlook, a higher risk tolerance and women (Grable & Joo, 2001). This is contrasting the research from Bazley, Bonaparte and Korniotis (2021), in which they state that people with more

income tend to be less self-aware about their financial problems, in turn not entering the help-seeking process in general. In the end we still see more people with high income that get financial help, which has to do with simply having the means as well as the opportunity costs of time, which is higher for high income individuals compared to low-income individuals (Kramer, 2016).

When the individuals cannot meet their goals, or worse, are experiencing structural losses, losing them money in the long run it becomes a problem to them, in this thesis we are looking at financial help being the solution to this problem, however this does hinge on the idea that financial help provides sufficient value. There are three different components that constitute the value of financial advice: portfolio value, financial value and emotional value (Pagliaro & Utkus, 2019).

Marsden & Zick (2011) state that the financial advisors help with goal setting and what is needed to get there, as well as with diversification purposes. Allie, West & Willows (2016) further confirm this by stating that the financial advisors help the individuals by keeping their biases in check and therefore overall helping them with decision-making and diversification. Furthermore, by going to a financial advisor, the consumer foregoes the costs of information and could lower the transaction costs (Westermann et al, 2020). However, the risk-adjusted portfolio returns are not significantly higher for individuals with a financial advisor, compared to individuals not using a financial advisor (Marsden & Zick, 2011; Foerster et al, 2014; Allie, West & Willows, 2016). This can change with the length of receiving the advice, which also has an impact on the value and can be seen to have a significant effect after 4 years, compared to a non-advised individual (Montmarquette & Viennot-Briot, 2015).

Besides the actual portfolio and financial help, there also is the emotional value (Pagliaro & Utkus, 2019) which Marsden & Zick (2011) argue to be an undervalued topic in the research field as subjective well-being is an important factor not widely regarded. The help received gives a certain amount of safety and clarity regarding these financial topics that otherwise would have been difficult to obtain without a financial advisor, due to time constraints. This view is further solidified by the research of Letkiewicz et al (2015), where financial planning improves the subjective well-being through the explanation and help in decision-making regarding complex financial circumstances.

This is closely related to *self-efficacy*, which is the belief that an individual can take care of their own financial circumstances (Letkiewicz et al, 2015). They also show that self-efficacy is connected to the mechanism of financial help-seeking. If there is a high amount of self-efficacy, they believe they are better at handling their financial affairs and are more likely to realise in which aspects they need might help, compared to individuals who have a lower self-efficacy. This gets further proven in a research paper regarding college students, where they take financial self-efficacy as well as financial stress and seek the effect on financial help seeking (Li et al, 2014). They found a positive effect of both financial stress and self-efficacy on financial help seeking mechanisms.

In the literature a factor that lacks a certain link to the decision-making process to look for financial help is **optimism**. Jureviciene & Jermakova (2012), have showed the link between optimism and certain financial behaviour, however not looking at the link what kind of effect optimism has on seeking financial help, which are different steps in the framework from Grable & Joo (2001). Kramer (2016) also looks at the effect of overconfidence related to help-seeking and finds this is a negative effect. Optimism will be the other main topic discussed within the literature review as we suspect that more optimistic people seek financial advice less because they tend to be more positive about the outcome, similar to the overconfident people from Kramer (2016). We believe because of the optimism about the outcome, for the individuals, it feels like they do not need the help, which leads us to our main hypothesis:

H_{main}: Optimistic (pessimistic) people will be less likely (more likely) to seek financial help, compared to pessimistic (optimistic) people.

2.2 Optimism

Before diving further into the relationship between optimism and the individuals' willingness to seek and/or accept financial advice, there needs to be a clear definition of what "optimism" entails. The definition created by Carver, Scheier and Segerstrom (2010) goes: *"Optimism is an individual difference variable that reflects the extent to which people hold generalized favorable expectancies for their future"*. This means that an individual who is considered optimistic, compared to an individual who is not, will see a brighter future with more desirable outcomes.

This difference between individuals, also creates a difference between mindsets and therefore their decision-making processes (Carver, Scheier & Segerstrom, 2010). They also found that generally for optimists there is a lower level of avoidance of negative outcomes, which in turn leads to more experiences. This is also correlated with success in educational institutions as well as a higher level of income.

The difference in decision-making process, as shown, is beneficial for the optimists to some degree. However, if the individuals start to overestimate the favourable events and underestimate the unfavourable events, this leads to a bias called the optimism bias (Sharot, 2011). Sharot shows that this bias leads to underestimating the likelihood and/or effect of negative events. This in turn could lead to consequences, when not accurately assessing the likelihood or risk of an event, especially in the financial world.

Sharot (2011) claims that an estimated 80% of the population will encounter such bias in their decision-making processes, which is explained by the degree of updating information when faced with reality after their original estimation of the situation. When faced with positive information, people are more likely to update their estimates according to this, as opposed to negative information regarding the future outcomes. Puri & Robinson (2005) find that net worth, age, and the self-employment status are significant explanatory variables for optimism. This leads us to believe there are underlying factors to optimism such as, but not limited to, demographic variables, experience and confidence.

In the financial market, optimism is revealed by the general market sentiment, which in recent years has gain some traction within financial research, because a certain type of investors seems to be swayed more by the sentiment, than the fundamental value of a stock (Concetto & Ravazzolo, 2019). Concetto and Ravazzolo call this type of investor *irrational traders*.

Although, irrational traders are investors that seem to be swayed more by positive information, which is similar to the optimistic people. This does not mean that optimistic people are by definition irrational traders, however their personal sentiment could be a disadvantage in this context. Bracha and Brown (2012) introduce a strategic model called “Affective Decision Making”. This splits the decision-making process into the “rational” and “emotional” process,

which also have an interactive effect with each other. The rational process tries to maximize return and minimize risk, with the emotional process providing an assessment of the risk perception (Bracha & Brown, 2012).

Optimism also has an effect on portfolio choice, compared to non-optimists they are more likely to own individual stocks, as opposed to pre-determined funds by large organisations (Puri & Robinson, 2005). The findings are that there is not a significant effect for a total higher percentage of stocks in their total portfolio of financial assets, however within the stock portfolio there is a preference for individual stocks. Risk tolerance and net worth have been controlled for and do not change these findings.

In behavioural economics, the assumption that investors are completely rational and maximize expected utility is alleviated and replaced by the idea that biases influence the decision-making processes of these individuals.

This idea, specifically for investments, was tested by Gakhar (2019), researching the different individual characteristics and the effect on their investment behaviour. It shows that more optimistic people tend to be seen as more aggressive, confident, and flexible, overall being bigger risk-takers (Gakhar, 2019). This is followed by a definition of an optimistic investor by Kim & Nofsinger (2007): *An individual who tends to do less critical analysis while making stock decisions and ignoring negative information about their stocks*.

The optimism from this investor, can be explained by research from Kunda (1990), in where he explains the difference between the goal to be accurate and the goal to reach a desired outcome or direction. The investor strives more towards directional goals as they tend to ignore negative information and have a general favourable expectancy towards the outcome (Carver, Scheier & Segerstrom, 2010). This is closely related to confirmation bias which is a bias that when searching for evidence to test something, there is bigger importance given to the evidence that confirms the belief, as opposed to the evidence that poses a counterargument to the belief (Jones & Sugden, 2001).

The individuals that strive towards accuracy goals would strive towards not ignoring any information as this hinders the goal to be as accurate as possible, leading to a lesser degree of

confirmation bias (Jones & Sugden, 2001). With a stronger accuracy goal, there is less 'wishful thinking' or desirability bias, which gets inflated with a directional goal (Krizan & Windschitl, 2009). Overall, this shows optimistic people tend to gravitate more towards directional goals, than accuracy goals, which finds a basis in different strategies that are chosen in both gathering and evaluating information (Epley & Gilovich, 2016).

The different strategies that are chosen to gather and evaluate information impacts the perception of risk through heuristics that simplify, which introduces bias to revise for the information that introduces uncertainty (Costa-Font, Mossialos & Rudisill, 2009). One of these biases is the beforementioned optimism bias, which leads to a systematic underestimation of risks regarding the individual. Costa-Font et al (2009), relate this to the health sector, where we see that the optimism bias comes into play more when the individual considers a risk to not be attributable to them as much as to others, which leads to underestimating the negative effects.

Furthermore, they show that optimism bias is more likely to occur to individuals with little experience and knowledge as well as when the situation of a negative outcome has a lower probability (Costa-Font et al, 2009). However, the individual themselves create this perception of risk, diminishing the accuracy of knowing when this situation occurs while increasing the optimism bias. With increasing levels of optimism, so does the level of risky decision-making, as they tend to underestimate the negatives and overestimate the positives (Zhang et al, 2020; O'Donoghue & Somerville, 2018). This leads to our second hypothesis:

H3: Optimistic (pessimistic) people are expected to invest more of their endowment on the risky asset (more) compared to pessimistic (optimistic) people.

In an advice-seeking scenario, such as this paper intends to do, there is not just an effect of optimism from the advice-seeker, but also an effect of optimism in the advice-giver which ultimately affects the help-seeking acceptance mechanisms, especially in the final step of the Grable & Joo (2001) framework, relating to the choice between alternatives.

There is a trade-off between confidence and optimism. More confident advice-givers will be seen as more knowledgeable, which relates to a higher perceived level of trust, however people do not like to be told news that could have a negative impact on them (Stavrova & Evans, 2019). This

poses an issue related to consistency in making the theoretically correct choices, due to the expert giving out the advice. In this scenario they tend to underestimate the bias of the recipient in wanting to hear positive outcomes and if they do choose for the consistency of their forecasts, this could lead to a decrease in the trust-levels, because of the related negative outcomes.

I summarise my hypotheses below:

Main hypothesis: **Optimistic (pessimistic) people will be less likely (more likely) to seek financial help, compared to pessimistic (optimistic) people.**

From the literature we have come up with additional hypothesis:

1. More generally trusting people are more likely to seek financial help.
2. Risk-seeking people are less likely to seek financial help, compared to risk averse people.
3. Optimistic (pessimistic) people are expected to invest more of their endowment on the risky asset (more) compared to pessimistic (optimistic) people.

3. Methodology

To study the relationship between optimism and financial help seeking, an online survey was conducted through Qualtrics.com. In the survey a financial investment task is the central piece, where an option of financial help is given, we then compare the outcomes of this task between optimistic and pessimistic people. We control for variables we believe to be relevant to this study next to the main research objective, which we draw from the previous literature. Prior to implementing the survey, the ethical questionnaire was completed. The study was deemed to adhere to ethical standards, as there was no participation of people below the age of 18 or any misinformation spread about the survey. Furthermore, participants were given a point of contact in case of any questions or concerns about the survey.

3.1. Experimental Design

As mentioned before, we study the effect of optimism on the individual's willingness to seek financial help, through an online survey. This survey entails an investment task, in which participants can receive 'financial' help, should they choose it. This financial help will be essentially the explanation of the rather difficult financial information, which could be helpful to, amongst others, individuals that feel insecure about their knowledge on financial topics. This approach is similar to the design of Rose (2023), where the advice-giver can help the help-seeker with making sense of the information overload.

Before this investment task is done, it is important to elicit whether the respondent is generally optimistic about outcomes. We take an a-priori approach to optimism. Because of the nature of the survey, we do not have a randomization process as we do not have different treatments we want to test, but rather a general effect of optimism on financial help-seeking.

The survey procedure is summarized in Table 1. In Section I, participants are given an introduction about the survey, whereafter participants are shown two assets and they state the expected return on the second asset (Step 1). This is done to elicit their optimism levels. In section II the respondents are asked to complete an investment task (Step 2). An endowment of 1000 euro's will be given to each participant. Then the respondents will be given 2 options to invest in, a risky asset

and a risk-free asset, similar to the design of Rose (2023). The respondents are free to choose the allocation between these assets, the risk-free asset has a return of 1.7% each month, and the risky asset has a return of 3.2% each month with a volatility of 12.9%, just like in the design of Rose (2023).

Table 1 - Summary of survey structure

Section I	Step 1 Instructions	Informed consent and general instructions
	Step 2. Elicitation optimism/pessimism	Participants are asked about the expected return from the investment task
Section II	Step 3. Financial advice decision	Participants make choice whether to receive financial advice or not.
	Step 4. Investment decision	Participants decide how to allocate their endowment
Section III	Step 5. Demographics and controls	Questions regarding subjects' age, gender, highest level of education, income, financial literacy, trust, and risk attitude.

The questions of the survey can be found in appendix A. In section 1, after giving a short introduction text, we elicit the respondent's optimism levels (Step 2). Participants are asked to state their expected return on the investment task, this is done directly in the form of questions such as: *"If you invest in asset B, in 1 month, what do you expect the LOWEST return of your investment to be (in percentages)?"* and *"If you invest in asset B, in 1 month, what do you expect the HIGHEST return of your investment to be (in percentages)?"*. The expected return of the investment decision can be calculated using the asset returns and volatility. Any answer that deviates from the expected return shows individuals' optimism and pessimism levels. This way we can compare the expected return to the expected value given by the respondent. Participants with a higher (lower) expected value compared to the expected return, are said to be optimistic (pessimistic). The expected return will be chosen as our reference point, in which we will see the how much the respondent thinks the variance matters as they answer their best and worst possible outcomes of the stock with the variance (Rocciolo, Gheno & Brooks, 2019). The variance has an

effect on the outcome, in which we can see both for the highest and lowest value, whether this variance has a positive effect compared to the expected return or a negative effect, in turn revealing their levels of optimism/pessimism.

In section 2, participants get an option to receive financial advice. Before the investment decision has been made, the respondents are given the option to spend 10% of their endowment on a financial advisor (step 3). Individuals who decided to do so received extensive explanations on the expected return of stock B. This is meant to represent financial advice-giving like in the real world, where the advisor has more knowledge and can better interpret the overload of information, than the investor (Rose, 2023). In this research design, the ideas of Gennaioli et al (2015) are incorporated as they state that the delegations of the investments happen because of this lack of knowledge and the anxiety that comes with making a choice. Because this is not the exact same research design and the investors do not get to pick and match their advisors, there is no delegation, however we do solve the issue of knowledge and interpretation in the financial advice-giving setting.

After the investment task, in Section III, participants are asked a series of control and demographic constraints (Step 5). Control variables include general trust, risk attitudes and financial literacy. General trust is measured using the questions in appendix A and financial literacy can be found in appendix B and is measured using financial literacy questions (Lusardi, 2006; Lusardi & Mitchell, 2009). The respondents risk attitudes and risk bearing capacity is measured by one question from Dohmen et al (2011), asking the respondents their subjective risk bearing capacity and attitudes, specifically in financial situations. This question is on a Likert scale from 1-7:

1. How do you see yourself: Are you generally a person who is fully prepared to take risks, regarding **FINANCIAL MATTERS**, or do you try to avoid taking risks?

3.2. Sample

The respondents were mainly recruited through social media platforms such as Instagram, Facebook and Discord as well as through sharing the link in various WhatsApp groups. This reached mostly friends and family but also people close to them, meaning a further outreach than just our personal circle. There were no specific rules as to who was eligible to participate in the

survey, however we did target mostly students or individuals with higher education as participants to minimize noise. We do this because studies show that hypothetical choice (a) usually results in noisier data (Camerer & Hogarth 1999, Hertwig & Ortmann 2001) and (b) does not work well for non-academic subjects (Dimmock et al., 2015).

The total number of respondents is 131, with 119 respondents filling in the entirety of the survey. 11 respondents quit after the investment task, but still provided somewhat useful information, even without the other answers for the controls. We had to remove around 250 respondents, who did not fill in anything or quit after filling in 1 number. More about this will be talked about in the discussion, but after talking to some respondents that had filled in the survey, we got similar feedback from people, which was the difficulty level being too high, making this relatively high number of removed respondents, compared to the current number of respondents, a bit clearer.

The full table of demographic information can be seen in appendix C. We see from this that the youngest person is 18 and the oldest 75 years old, with an average of 34. Most of our sample is male, with 63.7% of the total sample. In our categorical variables we see most of the sample has a university degree as their highest educational level and the average annual income lies around 30.000 euro's.

3.3. Incentives

The online survey was advertised to be about 5-10 minutes and the average time of completion, while only looking at full completions, was almost 11 minutes. For this we chose to not implement any incentives. A pre-paid incentive would have been beneficial to the response rate of the survey (Singer & Ye, 2013) however we did not have the available funds to pay the respondents.

The other alternative would have been to do post-paid incentives, which compared to not having any incentives does not have a significant effect on the response rate (Bosnjak & Tuten, 2003). As there is no improvement of the quality of the respondents, nor is there a significant effect on the response rate itself, as well as due to insufficient funds, we did not use an incentive for this survey and we understand the effects on the response rate that follow.

3.4. Analysis

3.4.1. Optimism

Optimism is the main independent variable of the study. We asked the respondents 2 different questions before doing the investment task, regarding the lowest expected return and the highest expected return of the risky asset. To elicit whether someone is optimistic, we compare the expected value the respondent answered to the expected return regarding theory. This means that for the highest expected return, if the answered expected value is higher than 16.1 (which is 3.2+12.9), we will consider this person optimistic and if it is lower, we consider them pessimistic. For the lowest expected return, we again compare the measures and if the answered expected value is lower than -9.7 (which is 3.2-12.9), we consider this person pessimistic, if it is higher we consider them to be optimistic. If a respondent answered the exact expected return, we consider them to be neither optimistic or pessimistic and therefore they will be considered neutral.

For the score of optimism, we normalized the values to be between -1 and 1, so we can more easily consider whether someone is optimistic (>0), neutral (0) or pessimistic (<0). We did this with the following formula: $\frac{\mathbf{2}(\boldsymbol{X}-\boldsymbol{min})}{\boldsymbol{max}-\boldsymbol{min}} - \mathbf{1}$.

3.4.2. Willingness to seek financial advice.

Individuals' willingness to seek financial advice is reflected in a binary variable, representing the question whether the respondents want financial advice or not. For those that choose financial advice, the variable will have a value of 1, and for those that forgo financial advice, it will have a value of 0.

3.4.3. Control variables

Individuals will have a score between 1 and 7 for the general trust questionnaire. The higher their score, the more their general trust. Individuals will also have a score between 0 and 5 using financial literacy questions, eliciting their financial literacy, with 5 being the most financial literate. Finally, on a Likert scale from 1 to 7 we elicit the self-assessed risk attitude of the respondents regarding financial matters, with 7 being the most risk-seeking.

3.4.4. The relationship between optimism and financial advice-seeking

To find the relationship between willingness to seek financial advice and optimism, a logit regression is conducted.

$$Finad_i = \beta_0 + \beta_1 O_i + \delta X_i + \epsilon_i$$

$Finad_i$ reflects individuals' willingness to accept financial advice. O_i reflects their optimism. X_i is a vector of control and demographic variables. ϵ_i is the error term.

4. Results

4.1. Description of data

As mentioned in the methodology section, we started with 131 respondents. 20 respondents got dropped because of completely unrealistic answers in the first 2 questions, which help us determine whether someone is optimistic, and therefore not useful to analyse. In appendix E we see that further down the line we lose 10 more respondents in total that did not finish the full survey as we see 101 being the lowest number of respondents, as this is the last question. Note that the numbers 56 and 48 in appendix E are not the lowest number as these were split into two categories, which are the people that did take financial advice and the people who did not. To give an idea of the sample, our average respondent is a 34-year-old male who graduated university with at least a bachelor's degree and has an annual income of 20,001-30,000.

4.2. Optimism as a determinant of financial-help seeking

This section concerns our regression, as well as the testing of the additional hypotheses. We start with the main objective of this research which is the role of optimism as a determinant of financial help-seeking. We have two different measures of optimism we are working with here, which is the optimism regarding the low expectation and the optimism regarding the high expectation. We also run three different regressions for both of these measures: one with just the optimism measure (1), one with the optimism measure as well as demographic variables, but not the control variables (2), and one with all of the variables (3).

We first take a look at the optimism measure of low expectations. We see a positive effect for models 2 and 3, but a negative effect for model 1. Here we see that optimism does not have a signficiant effect on financial help-seeking in either of the models. However we do see a few variables that do have a significant effect on financial help-seeking. These are *gender, age* and three categories of *education. Our results indicate* that only demographic variables have any explaining power on whether they seek financial help or not.

Table 2 - Regression lowest return

VARIABLES – Lowest return expectations	(1) Model 1	(2) Model 2	(3) Model 3
Normalized optimism about lowest return	-0.546	0.415	0.161
	(0.918)	(1.280)	(1.356)
Gender (male=1) = 1		-2.046***	-2.041***
		(0.605)	(0.631)
Age		-0.0411**	-0.0446*
		(0.0209)	(0.0229)
Income = 2, 10,001-20,000		-0.568	-0.114
		(0.955)	(0.996)
Income = 3, 20,001-30,000		-0.602	-0.502
		(0.850)	(0.877)
Income = 4, 30,001-40,000		0.943	1.233
		(0.830)	(0.878)
Income = 5, 40,001-50,000		0.516	0.642
		(1.008)	(1.048)
Income = 6, Higher than 50,000		1.083	1.301
		(0.911)	(0.994)
Income = 7, Prefer not to say		0.406	0.504
		(0.837)	(0.866)
Highest education level = 2, MBO		0.261	0.255
		(1.342)	(1.397)
Highest education level = 3, Technical University / HBO		-2.356**	-2.526**
		(1.154)	(1.180)
Highest education level = 4, University - Bachelor		-1.759***	-1.852***
		(0.680)	(0.715)
Highest education level = 5, University - Masters		-2.828***	-3.012***
		(0.768)	(0.807)
Risk tolerance			0.0416
			(0.165)
Financial literacy score			-0.149
			(0.284)
General Trust level			0.0408
			(0.221)
Constant	-0.0471	3.783***	4.138**
	(0.232)	(1.066)	(1.945)
Observations	111	102	100
Demographics	NO	YES	YES
Controls	NO	NO	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We also run the same three regressions but with our optimism measure for high expectations. Here, we see a strictly negative effect of optimism on seeking financial help. However we see the same general results as with our other measure of optimism. Only *gender*, *age* and three categories of *education* have a significant effect on seeking financial help.

Table 3 - Regression highest return expectations

VARIABLES – Highest return expectations	(1) Model 1	(2) Model 2	(3) Model 3
Normalized optimism about highest return	-0.791	-0.614	-0.712
	(0.697)	(0.841)	(0.848)
Gender (male=1) = 1		-2.060***	-2.046***
		(0.608)	(0.634)
Age		-0.0392*	-0.0448*
		(0.0201)	(0.0229)
Income = 2, 10,001-20,000		-0.487	-0.0531
		(0.946)	(0.991)
Income = 3, 20,001-30,000		-0.489	-0.396
		(0.833)	(0.857)
Income = 4, 30,001-40,000		1.019	1.342
		(0.837)	(0.888)
Income = 5, 40,001-50,000		0.531	0.639
		(1.007)	(1.047)
Income = 6, Higher than 50,000		1.239	1.488
		(0.920)	(0.993)
Income = 7, Prefer not to say		0.438	0.534
		(0.838)	(0.865)
Highest education level = 2, MBO		0.393	0.384
		(1.359)	(1.417)
Highest education level = 3, Technical University / HBO		-2.403**	-2.597**
		(1.152)	(1.183)
Highest education level = 4, University - Bachelor		-1.705**	-1.813**
		(0.675)	(0.714)
Highest education level = 5, University - Masters		-2.842***	-3.054***
		(0.771)	(0.817)
Risk tolerance			0.0371
			(0.165)
Financial literacy score			-0.191
			(0.280)
General Trust level			0.0470
			(0.220)
Constant	-0.714	3.258***	3.710*
	(0.558)	(1.231)	(2.025)
Observations	111	102	100
Demographics	NO	YES	YES
Controls	NO	NO	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

From these 2 tables we see that when we just run optimism on financial help-seeking, for both measures there is a negative effect of optimism on financial help-seeking. For the optimism measure of low expectations we see when we add control and demographic variables that this becomes positive, meaning that being optimistic about the low expectation increases the

probability to seek for finanical help. The opposite holds true for the optimism measure of high expectations. This is strictly negative as hypothesized, meaning that when an individual is optimistic about high expectations, the probability to seek financial help decreases. However we cannot draw any conclusions as the measure for optimism is insignificant across all 6 models.

We have three additional hypothesis, which we drew from literature, that we are also testing here. The first of these three being whether: *(1) generally trusting people accept more financial advice.* We can see in both regressions that trust has a positive effect on seeking financial help. However since in neither of the regressions trust has a signifcant effect, we cannot conclude anything about this hypothesis.

The second hypothesis we test is: *(2) Risk seeking people are less likely to seek financial help.* Again we look at the regressions to see what the effect of the risk tolerance is on seeking financial help. We see in both regressions that this has a positive effect on seeking financial help, which is the opposite of what we hypothesized. However we cannot draw conclusions because the variables are both not statistically significant.

The final additional hypothesis we test is: *(3) Optimistic people invest more in the risky asset*. From the boxplots shown in section 4.3, we believe the distributions of asset B trend the same way how we hypothesized it. To test this we use the wilcoxon rank sum test as we compare both optimistic and pessimistic people with each other as well as with neutral people. For both measures the scores have been summarized in a table with corresponding p-values. We see here that there are no significant differences in the allocations of the risky asset between any of the categories, although for high expectations optimism is close to being significant compared to both pessimistic and neutral people. From this we reject our hypothesis that optimistic people invest more in the risky asset as the effect is statistically insignificant at the 10% level, ceteris paribus.

4.3 Financial help-seeking

Within this section, we will take a deeper look at the differences between the group that decided to take financial advice and the group that decided to not take financial advice. Specifically, the variables trust and risk attitude, as these were hypothesized. The differences in demographical variables can be found in appendix F.

The first of our control variables is the average trust in which we compare the groups. The distribution between respondents that chose financial advice and those that did not choose financial advice, seems to be rather similar across average trust levels. The p-value is 0.885, from which we conclude that there is not a significant difference in financial help-seeking across average trust levels at the 10% level, ceteris paribus.

Table 4 – General trust between financial advice choice

Tabulation of Financial advice / General trust

Financial advice	Average trust							
	1	2	3	4	5	6	7	Total
0	**1**	**7**	**12**	**16**	**13**	**5**	**1**	**55**
	1.82	12.73	21.82	29.09	23.64	9.09	1.82	100.00
	50.00	77.78	50.00	51.61	52.00	55.56	50.00	53.92
1	**1**	**2**	**12**	**15**	**12**	**4**	**1**	**47**
	2.13	4.26	25.53	31.91	25.53	8.51	2.13	100.00
	50.00	22.22	50.00	48.39	48.00	44.44	50.00	46.08
Total	**2**	**9**	**24**	**31**	**25**	**9**	**2**	**102**
	1.96	8.82	23.53	30.39	24.51	8.82	1.96	100.00
	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 5 – Risk tolerance between financial advice choice

Tabulation of Financial advice / Risk tolerance

Financial advice	Risk tolerance							
	1	2	3	4	5	6	7	Total
0	**5**	**17**	**10**	**8**	**9**	**4**	**1**	**54**
	9.26	31.48	18.52	14.81	16.67	7.41	1.85	100.00
	45.45	62.96	55.56	47.06	50.00	57.14	33.33	53.47
1	**6**	**10**	**8**	**9**	**9**	**3**	**2**	**47**
	12.77	21.28	17.02	19.15	19.15	6.38	4.26	100.00
	54.55	37.04	44.44	52.94	50.00	42.86	66.67	46.53
Total	**11**	**27**	**18**	**17**	**18**	**7**	**3**	**101**
	10.89	26.73	17.82	16.83	17.82	6.93	2.97	100.00
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

From the table we see a pretty even distribution for the risk tolerance, except for the outlier of the individuals that scored 2, as they had more individuals choosing to not take financial advice. The p-value is 0.627, from this we conclude that there is not a significant difference in financial help-seeking across risk tolerance scores at the 10% level, ceteris paribus. So for both trust level and risk tolerance we cannot find a significant behaviour in the financial help seeking behaviour of individuals.

The final difference we will look at is the allocations in the investment task between people that took financial advice and those who did not take financial advice. This distribution will give us an insight for the third hypothesis, which regards the allocation of the investment task. In figure 2 and 3 we can see the difference between the distributions. For both asset A and asset B we see similar distributions between no and with advice, making us suspect there is no significant difference. We run a Mann-Whitney test and the p-value is 0.7300, this means there is no significant difference between the investment task allocations between those that received and those that did not receive financial advice at the 10% level, ceteris paribus. In the following section we further discuss the third hypothesis, regarding optimistic people and the allocations.

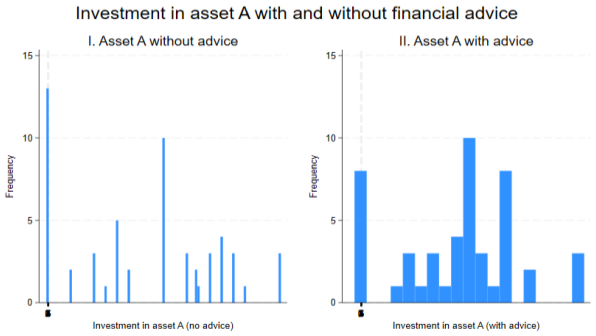

Figure 2 - Investment in asset A distribution

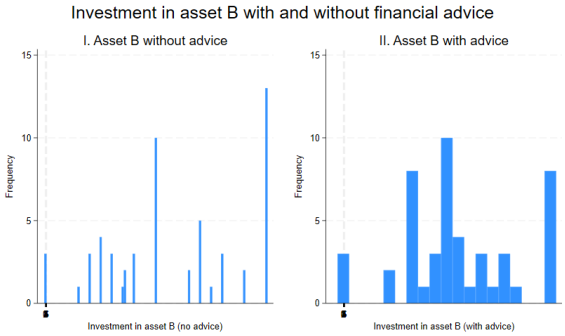

Figure 3 - Investment in asset B distribution

4.4. Optimism

The third hypothesis requires the distributions of the investment task between asset A and B, while comparing three groups (optimistic, neutral, pessimistic). Since we have two measures of optimism, we see two different boxplots for every asset in figure 4 and 5 respectively. We see that for Asset A, pessimistic people regarding low expectations allocate a larger part of their endowment to the safe asset (asset A), compared to the other 2 groups. We also see that optimistic people regarding high expectations, tend to spend less on asset A, compared to the other 2 groups. For the risky asset (asset B) we see an inverse pattern, pessimistic people on low expectations tend to allocate less to Asset B, compared to the other 2 groups and optimistic people regarding high expectations tend to allocate more to the risky asset compared to the other 2 groups. This seems to be according to what we hypothesized, namely that optimistic people tend to spend more on the risky asset.

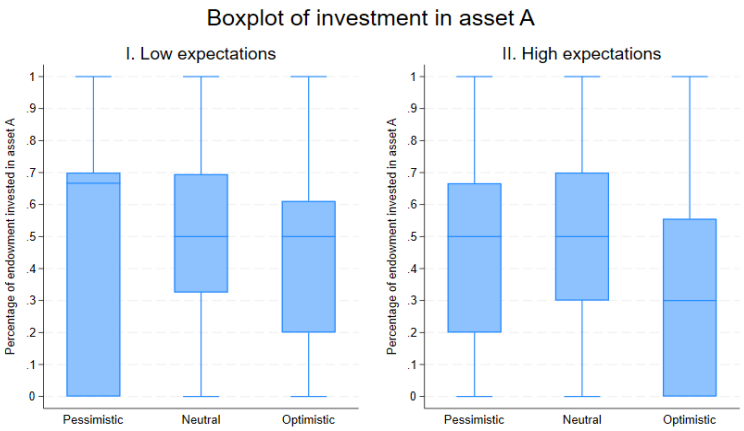

Figure 4 – Boxplot optimism within investment asset A

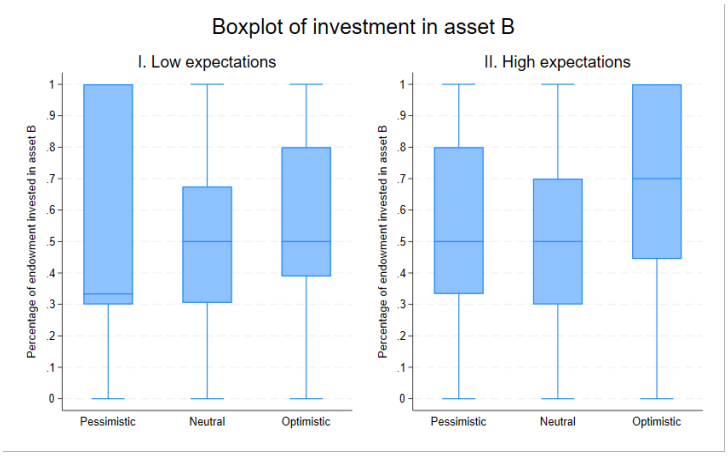

Figure 5 – Boxplot optimism within investment asset B

In appendix G, the distribution of optimism/pessimism can be seen. We also take a look at the normalized variable we made, which give us a score between -1 and 1, showing us more easily what the general sample has as their optimism/pessimism levels. Here we see people are generally more optimistic when they are considering the low expectation and generally more pessimistic when considering high expectations.

Since we have these 2 measures of optmism, one for the high expectation and one for the low expectation, we want to test whether our expectation holds of people showing differences in optimism between the high and low return questions. We run a paired t-test to see whether this difference exists and the p-value is 0.000, this means that on average people are more optimistic when estimating the lowest return on an investment compared to estimating the highest return at the 1% level, ceteris paribus.

5. Conclusion and discussion

This study examines the relationship between optimism and financial help-seeking. In comparing our results to previous literature, we compare with findings from financial overconfidence due to the scarcity of studies using optimism. The current study distinguishes between two types of optimism: optimism about the best-case scenario and optimism about the worst-case scenario. We find opposite effects for the two on financial help-seeking. In the presence of controls and demographics, there is positive relationship, albeit insignificant, between optimism in the worst case and help-seeking. We can think of one plausible reason for this finding: if people overestimate the worst return possible of an asset, then perhaps they also overestimate the extent to which financial advice would help them. As such, they display higher demand for financial advice. The plausibility of this hypothesis can be supported by Leong & Zaki (2018). Future research could examine the plausibility of this hypothesis.

Furthermore, we found that the probability of help-seeking decreases with optimism about the best case of return. This is in line with our expectations, and the findings of Hsu (2021), who found that overconfident people prefer to decide autonomously. The differences found in the relationships between optimism and financial advice imply that the relationship is non-linear: the effect of optimism depends on the ranking of the outcome out of the set of outcomes. In our investment task, the highest return ranked first in the set of outcomes and the lowest return ranked last. The higher the ranking of the outcome (the more dire it is), the more willing individuals are to ask for financial advice. The difference may also indicate that one or more of the measures of optimism may be confounded by other biases. For example, it may that optimism about the highest return partially reflects individuals' wishful thinking about the future and not just their expectation, which Krizan & Windschitl (2009) call desirability bias and indeed does inflate optimism.

The aforementioned effects were statistically insignificant. However, we find significant effects of age, education, and gender, similarly to Hsu (2022). The result that financial literacy and risk tolerance do not significantly affect advice seeking defied expectations, given the findings of Calcagno & Monticone (2015) as well as Nguyen, Gallery & Newton (2016).

6. Limitations

Although our results are informative, our sample pool does not ensure external validity. We used a sample with a wide age range and different levels of education. Findings would likely differ if the survey was implemented with only university students or representative household samples.

One branch of literature defines optimism as the difference between individuals' expectations and expected outcomes considering historical data. Although seemingly more robust, using such a measure in the survey was not plausible. Such a measure would require a more complex decision task, that would in turn require higher financial incentives for respondents to exert sufficient cognitive power. Financial restrictions inhibited this, as well as after feedback from respondents, the difficulty level was already too high, which also led to a lower number of respondents completing the survey.

Further on the matter of incentives, the hypothetical nature of the experiment may have implications on the findings. Any hypothetical investment task may be considered artificial. This lack of salience may cause hypothetical bias (Hensher, 2010). Respondents may have been affected by the hypothetical nature in a number of ways, including (1) they may fail to sufficiently exert effort in indicating their expectations for the asset returns in the investment task, (2) they may not take the investment task seriously, and (3) they may not feel a sufficient urge to ask for financial advice. In the real world, however, they may feel more pressure or need for financial advice.

Finally, to receive advice, we made it so in our survey design that the respondents incurred a cost of 10%. It may be that those opposed to receiving advice merely have a willingness to pay below 10%. Had the cost been lower, they would have requested it.

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Appendix A- Questionnaire

Introduction:
Thank you for taking the time to take a look at the survey for my master thesis! In this survey you will be answering some questions about decision making. The overall length of the survey is 5-10 minutes depending on how familiar you are with the topics.

For any questions, you can contact me on my e-mail address: 475380ck@eur.nl

End of Block: Introduction

Start of Block: Investment Information

There are two assets on the market:
Asset A= Giving a fixed return of 1.7% every month.
Asset B= Giving an expected return of 3.2% every month with a standard deviation of 12.9%.
(expected return= The return you get could be higher or lower, but the average return is 3.2%)

Q1 If you invest in asset B, in 1 month, what do you expect the LOWEST return of your investment to be (in percentages)?

Q2 If you invest in asset B, in 1 month, what do you expect the HIGHEST return of your investment to be (in percentages)?

Q3 The expected return of asset B isn't fixed like asset A, therefore a financial advisor offers their help to give you a better idea what the outcome of investing in asset B looks like, for 10% of your endowment (100 euro's). This allows you to make a better investment decision. You now have the opportunity to buy the financial advice whereafter you will complete the investment task again, if not your previous investment decision will remain the same.

Would you like to take the financial advisor's offer?

- ○ Yes
- ○ No

End of Block: Investment Information

Start of Block: Financial Advice

The financial advice:

Because you paid for the financial advice your endowment is now 900 (1000-100).

The return of asset B is not always the same, like asset A. On average the return will be 3.2%, however because of the standard deviation of 12.9%, the outcome could be 12.9% higher or lower than the average return. Best case this means a return of 16.1%, worst case this means -9.7%.

Lets go over some numerical outcomes as well:

- If you are to spend the full 900 in asset B, the range of outcomes will be 821.70 to 1044.9 euro's. The return then ranges from losing 79.30 to gaining 144.90 euro's. The average return would be a gain of 28.80 euro's.

-If you are to spend half your money (450) in asset B, the range of outcomes will be 410.85 to 522.45 euro's. The return then ranges from losing 39.15 to gaining 72.45 euro's. The average return would be a gain of 14.40 euro's.

-If you are to spend no money in asset B, you would spend all of the money on asset A giving you a fixed return of 15.30 euro's.

End of Block: Financial Advice

Start of Block: Investment Decision

There are two assets on the market:
Asset A= Giving a fixed return of 1.7% every month.
Asset B= Giving an expected return of 3.2% every month with a standard deviation of 12.9%.
(expected return= The return you get could be higher or lower, but the average return is 3.2%)

Q4 In a hypothetical situation, u will be receiving 1000 euro's. You will get to spend this between asset A and B.

How would you allocate your money between these assets?

Asset A : _____
Asset B : _____
Total : _____

Q5 After receiving the financial advice you now have 900 euro's. You will get to spend this between asset A and B.

How would you allocate your money between these assets?

Asset A : _____
Asset B : _____
Total : _____

End of Block: Investment Decision

Start of Block: Demographics

Q6 What is your age?

Q7 What is your gender?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say

Q8 What is the highest level of education you achieved?

- ○ High school
- ○ University - Bachelor
- ○ University - Masters
- ○ Technical University / HBO
- ○ MBO

Q9 What is your annual income?

- ○ 0-10,000
- ○ 10,001-20,000
- ○ 20,001-30,000
- ○ 30,001-40,000
- ○ 40,001-50,000
- ○ Higher than 50,000
- ○ Prefer not to say

End of Block: Demographics

Start of Block: General trust

Q10 Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?
(In the slider below 1 is the lowest level of trust and 7 the highest)

	1	2	3	4	5	6	7
"I trust people"							

Q11
Would you say that most of the time, people try to be helpful, or that they are mostly just looking out for themselves?
(In the slider below 1 is the lowest level of helpfulness and 7 the highest)

	1	2	3	4	5	6	7
"I believe people try to be helpful"							

Q12
Do you think that most people would try to take advantage of you if they got the chance or would they try to be fair?
(In the slider below 1 is the lowest level of fairness and 7 the highest)

1	2	3	4	5	6	7

"I believe people try to be fair"	

End of Block: General trust

Start of Block: Financial Literacy

Q13 Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? Please select one.

- ○ More than $102
- ○ Exactly $102
- ○ Less than $102
- ○ Don't know

Q14 Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? Please select one.

- ○ More than today
- ○ Exactly the same as today
- ○ Less than today
- ○ Don't know

Q15 Buying a single companys stock usually provides a safer return than a stock mutual fund. Please select one.

- ○ True
- ○ False
- ○ Don't know

Q16 A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less. Please select one.

- ○ True
- ○ False
- ○ Don't know

Q17 If interest rates fall, what should happen to bond prices? Please select one.

- ○ They will rise
- ○ They will fall
- ○ They will stay the same
- ○ There is no relationship between bond prices and the interest rate
- ○ Don't know

End of Block: Financial Literacy

Start of Block: Risk attitudes

Q18
How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks, regarding FINANCIAL MATTERS?
(In the slider below 1 is the lowest level of risk-seeking and 7 the highest)

	1	2	3	4	5	6	7
"I am a risk-seeking person when it comes to financial matters"							

End of Block: Risk attitudes

Appendix B – General trust level questions

1. Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?
    - Most people can be trusted.
    - You can't be too careful.
2. Would you say that most of the time, people try to be helpful, or that they are mostly just looking out for themselves?
    - Try to be helpful.
    - Just looking out for themselves.
3. Do you think that most people would try to take advantage of you if they got the chance or would they try to be fair?
    - Take advantage.
    - Try to be fair.

Appendix C – Financial Literacy questions

1. *Compounding*. Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? Please select one.
    - More than $102
    - Exactly $102
    - Less than $102
    - Don’t know
    - Prefer not to say
2. *Inflation*. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? Please select one.
    - More than today
    - Exactly the same as today
    - Less than today
    - Don’t know
    - Prefer not to say
3. *Diversification*. Buying a single companys stock usually provides a safer return than a stock mutual fund. Please select one.
    - True
    - False
    - Don’t know
    - Prefer not to say
4. *Mortgage*. A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less. Please select one.
    - True
    - False
    - Don’t know
    - Prefer not to say
5. *Bond Pricing*. If interest rates fall, what should happen to bond prices? Please select one.
    - They will rise

- They will fall
- They will stay the same
- There is not relationship between bond prices and the interest rate
- Don’t know
- Prefer not to say

Appendix D – Demographic characteristics sample

Variable	Obs	Mean	Std. Dev.	Min	Max
age	103	34.01	15.611	18	75
male	102	.637	.483	0	1

Highest education level	Freq.	Percent	Cum.
High school	23	22.33	22.33
MBO	5	4.85	27.18
Technical University / HBO	6	5.83	33.01
University - Bachelor	36	34.95	67.96
University - Masters	33	32.04	100.00
Total	103	100.00	

Income	Freq.	Percent	Cum.
0-10,000	23	22.33	22.33
10,001-20,000	11	10.68	33.01
20,001-30,000	16	15.53	48.54
30,001-40,000	14	13.59	62.14
40,001-50,000	9	8.74	70.87
Higher than 50,000	13	12.62	83.50
Prefer not to say	17	16.50	100.00
Total	103	100.00	

Appendix E – Summary statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Expectation about lowest return	111	1.529	18.26	-97	75
Expectation about highest return	111	14.65	15.27	1.700	100
Investment in asset A (no advice)	56	416.6	312.2	0	1,000
Investment in asset B (no advice)	56	583.4	312.2	0	1,000
Investment in asset A (with advice)	48	402.1	246.0	0	900
Investment in asset B (with advice)	48	497.9	246.0	0	900
Age	103	34.01	15.61	18	75
Risk tolerance	101	3.366	1.605	1	7
Financial advice	111	0.468	0.501	0	1
Normalized optimism about highest return	111	-0.736	0.311	-1	1
Normalized optimism about lowest return	111	0.146	0.212	-1	1.000
Gender (male=1)	102	0.637	0.483	0	1
General Trust level	102	4.016	1.204	1	7
Financial literacy score	102	3.402	0.988	1	5

Tabulation of education

Highest education level	Freq.	Percent	Cum.
High school	23	22.33	22.33
MBO	5	4.85	27.18
Technical University / HBO	6	5.83	33.01
University - Bachelor	36	34.95	67.96
University - Masters	33	32.04	100.00
Total	103	100.00	

Tabulation of income

Income	Freq.	Percent	Cum.
0-10,000	23	22.33	22.33
10,001-20,000	11	10.68	33.01
20,001-30,000	16	15.53	48.54
30,001-40,000	14	13.59	62.14
40,001-50,000	9	8.74	70.87
Higher than 50,000	13	12.62	83.50
Prefer not to say	17	16.50	100.00
Total	103	100.00	

The most important takeaways from the summary statistics are as follows:

- We see the average expectation of the lowest return be higher than the lowest return and the average expectation of the highest return to be lower than the highest expectation. From this we derive through our measure of optimism, that people are generally more optimistic

about the lowest possible return, but generally more pessimistic about the highest possible return.

- The allocation between asset A and B look similar between both the group that received financial advice and the group that did not receive financial advice. With around 400 in Asset A, and close to 600 and 500 respectively for asset B. This difference can be explained by the costs of receiving financial advice, which was 100. We see that close to half the respondent chose to pay for financial advice.
- The average risk tolerance, which the respondents assessed themselves is generally more risk-averse than risk-seeking.
- Regarding trust, the respondents average out close to the average of the scale, which means that the set of respondents, are both not generally trusting or generally untrusting.
- The financial literacy score shows that our set of respondents are a little more financially literate than average.
- A more in-depth analysis of the demographic variables has already been shown in the methodology section. However, to give an idea of the sample, our average respondent is a 34-year-old male who graduated university with at least a bachelor's degree and has an annual income of 20,001-30,000.

Appendix F – Demographic Variables (+ Financial Literacy) / Financial help-seeking

First, we take a look at the relationship between the demographic variables and the individuals that decided to take financial advice. For the variable *age*, we created separate categories, to have a proper analysis between the differences, otherwise a table would of the distribution would not be insightful.

Tabulation of Financial advice / Gender

	Gender (male=1)		
Financial advice	0	1	Total
0	**15**	**41**	**56**
	26.79	73.21	100.00
	40.54	63.08	54.90
1	**22**	**24**	**46**
	47.83	52.17	100.00
	59.46	36.92	45.10
Total	**37**	**65**	**102**
	36.27	63.73	100.00
	100.00	100.00	100.00

We look at the differences in financial help seeking between genders. In the group that did not take the financial advice, we see that there are almost three times as many men as there are woman. Within the group that did take the financial advice, we see that the number of men and woman are almost equal. From this table, we suspect there to be a difference between financial help seeking, across genders. The p-value is 0.028, indicating that there is a significant difference in financial help-seeking across genders at the 5% level, ceteris paribus.

Tabulation of Financial advice / Age categories

	age_cat			
Financial advice	1	2	3	Total
0	**25**	**29**	**5**	**59**
	42.37	49.15	8.47	100.00
	50.00	58.00	45.45	53.15
1	**25**	**21**	**6**	**52**
	48.08	40.38	11.54	100.00
	50.00	42.00	54.55	46.85
Total	**50**	**50**	**11**	**111**
	45.05	45.05	9.91	100.00
	100.00	100.00	100.00	100.00

As mentioned before, we created three age categories for comparing purposes, namely: <25, 25-65, >65. In the table we do not see major differences between the respondents that did take financial advice and the ones that did not, between age categories. As the distributions look similar, we do not expect there to be a difference between financial help seeking across age categories. The

p-value from this table is 0.627, from this we would conclude that there is not a significant difference in financial help-seeking across age categories at the 10% level, ceteris paribus. However, since this is now a categorical variable, we can perform a Mann-Whitney test, to test whether there is a difference across categories or not. We run this for each category and from the three categories respectively the p-values are: 0.4519, 0.7866 and 0.4246. From this we stick to the conclusion we made that there is not a significant difference.

Tabulation of Financial advice / Education

	Highest education level					
Financial advice	High school	MBO	Technical University / HBO	University - Bachelor	University - Masters	Total
0	**8**	**1**	**4**	**20**	**23**	**56**
	14.29	1.79	7.14	35.71	41.07	100.00
	34.78	20.00	66.67	55.56	69.70	54.37
1	**15**	**4**	**2**	**16**	**10**	**47**
	31.91	8.51	4.26	34.04	21.28	100.00
	65.22	80.00	33.33	44.44	30.30	45.63
Total	**23**	**5**	**6**	**36**	**33**	**103**
	22.33	4.85	5.83	34.95	32.04	100.00
	100.00	100.00	100.00	100.00	100.00	100.00

From the table we see differing results. For people that have high school as their highest education level, we see the respondents that did take financial advice to be almost double the amount of the respondents that did not choose to take financial advice. We see this pattern the other way around at the opposite end of the spectrum, in which the university master's group have more than twice the respondents that did not take financial advice, compared to the respondents that did. In the middle three categories, there is no clear distribution, but if we look at the general trend, we see that lower education levels tend to choose financial advice more than the higher education levels. We cannot prove this however without knowing the p-value, which in this case is 0.051. From this we conclude that there is a significant difference in financial help-seeking across education categories at the 10% level, ceteris paribus.

Tabulation of Financial advice / Income

	Income							
Financial advice	0-10,000	10,001-20,000	20,001-30,000	30,001-40,000	40,001-50,000	Higher than 50,000	Prefer not to say	Total
0	**10**	**8**	**10**	**7**	**4**	**7**	**10**	**56**
	17.86	14.29	17.86	12.50	7.14	12.50	17.86	100.00
	43.48	72.73	62.50	50.00	44.44	53.85	58.82	54.37

1	**13**	**3**	**6**	**7**	**5**	**6**	**7**	**47**
	27.66	6.38	12.77	14.89	10.64	12.77	14.89	100.00
	56.52	27.27	37.50	50.00	55.56	46.15	41.18	45.63
Total	**23**	**11**	**16**	**14**	**9**	**13**	**17**	**103**
	22.33	10.68	15.53	13.59	8.74	12.62	16.50	100.00
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

From the table we cannot get a clear view on the differences between income groups. The distribution between the people that did take financial advice and the people that did not, across income groups seems to be slightly random. We see from the p-value of this test, which is 0.728, that there is no significant difference in financial help-seeking across income categories at the 10% level, ceteris paribus.

Tabulation of Financial advice / Financial literacy

	Financial literacy score					
Financial advice	1	2	3	4	5	Total
0	**2**	**5**	**18**	**26**	**4**	**55**
	3.64	9.09	32.73	47.27	7.27	100.00
	40.00	38.46	62.07	56.52	44.44	53.92
1	**3**	**8**	**11**	**20**	**5**	**47**
	6.38	17.02	23.40	42.55	10.64	100.00
	60.00	61.54	37.93	43.48	55.56	46.08
Total	**5**	**13**	**29**	**46**	**9**	**102**
	4.90	12.75	28.43	45.10	8.82	100.00
	100.00	100.00	100.00	100.00	100.00	100.00

At first glance it looks like more people take financial advice in the lower scores and less people take financial advice in the higher scores, however not a clear pattern can be established. The p-value is 0.581, from which we conclude that there is not a significant difference in financial help-seeking across financial literacy scores at the 10% level, ceteris paribus.

Appendix G – Optimism/Pessimism distribution

We take a look at the distribution of pessimism (optimism) for both low and high expectations. The first category for the low expectation is whether the respondent answered with a lower expectation than the expected return (return of -9.7). The second category are the people that answered the expected return of -9.7 and the final category are the people that answered higher than the expected return. This distribution shows us that a little over 75% is optimistic about the low expectation. For the distribution of the high expectation, the categories work the same way, but with the expected return of 16.1. Here we see that a little over 55% is pessimisitc about the high expectation which is an interesting reversal of the behaviour between the low and high expectations.

Tabulation of Pessimism - Low

	Freq.	Percent	Cum.
1	10	9.01	9.01
2	16	14.41	23.42
3	85	76.58	100.00
Total	111	100.00	

Tabulation of Pessimism - High

	Freq.	Percent	Cum.
1	64	57.66	57.66
2	23	20.72	78.38
3	24	21.62	100.00
Total	111	100.00	

Variable	Obs	Mean	Std. Dev.	Min	Max
Normalized opt - High	111	-.736	.311	-1	1
Normalized opt - Low	111	.146	.212	-1	1

Appendix H – Wilcoxon rank sum test outcomes

High expectations	**Pessimistic**	**Neutral**	**Optimistic**
Pessimistic	X	0.76	0.17
Neutral	0.76	X	0.15
Optimistic	0.17	0.15	X

Low expectations	**Pessimistic**	**Neutral**	**Optimistic**
Pessimistic	X	0.98	0.78
Neutral	0.98	X	0.50
Optimistic	0.78	0.50	X