SHIFTING THE LENS TO IMPACT INVESTING

An Eye-Tracking Study of Investors' Attention Allocation

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Abstract

This exploratory study aims to shed light on which information in an impact fund, investors pay attention to. The current understanding of investors' preferences needs revision. A new investor preference for risk-return plus impact has emerged but has remained largely unexplored. Understanding preferences is essential to scale impact investing from the margins to the mainstream. Drawing on previous literature, this paper further aims to uncover if personal characteristics influence attention allocation.

A neuroscientific approach using eye-tracking is employed on a small sample of nonprofessional investors to observe and measure attention. The participants visually explore six impact funds, with and without time constraints. Attention allocation during the time-constrained round is analyzed quantitatively and qualitatively. The experiment is followed up with a survey.

The findings suggest that investors pay more attention to financial over non-financial information. Moreover, attention allocation and information processing are influenced by gender, broad attitudes, and personality traits. The self-reported measure validated by eye-tracking revealed an incongruency, which may suggest that traditional research methods might not provide sufficient insight into behavior.

The insights from our research will contribute to providers in designing, communicating, and advertising impact funds. It could also help investors increase awareness of their information processing strategies and its implications. The study provides a starting point for further investigation of investors' preferences when making an impact investment decision.

Keywords: neurofinance, eye-tracking, visual attention, eye movements, impact funds, investor, attention, decision-making

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List of Abbreviations

AOI	-	Areas of Interest
NAM	-	Norms Activation Model
SDG	-	Sustainable Development Goals
TFT	-	Total Fixation Time
TPB	-	Theory of Planned Behavior
TRA	-	Theory of Reasoned Action
U.N.	-	United Nations

1 Introduction

In 2007 the term impact investing was coined by The Rockefeller Foundation (Madsbjerg, 2018). It refers to investing for both a financial return along with social or environmental impact (Höchstädter & Scheck, 2015; Mogapi, Sutherland, & Wilson-Prangley, 2019). A change in investors' investment preferences, motivations, and what they seek in an investment has appeared, which has partially contributed to the emergence of impact investing (Anand & Cowton, 1993; Mudaliar, Bass, Dithrich, & Nova, 2019). According to Cohen (2018), investors previously focused on risk and return in their investments. Today, a new paradigm of risk-return plus impact is developing (Cohen, 2018).

The increased momentum of impact investment to solve today's pressing issues have increased optimism to contribute to societal development and environmental sustainability (Bugg-Levine & Emerson, 2011; Mudaliar et al., 2019). It is estimated that there is a financial gap of $2.5 trillion per year to meet the United Nations Sustainable Development Goals (U.N. SDG) by 2030. Impact investing is being recognized as critical in filling the financing gap (Akenroye, Nygård, & Eyo, 2018; Suehrer, 2019; United Nations, 2020). The goal of impact investing was to scale funding of social and environmental initiatives by bringing in the traditional asset managers (Madsbjerg, 2018). If impact investing is to scale and enter the mainstream, understanding investors' motivations are essential, as it will allow advisors and providers to address them (Barclays, 2018).

Presently, the research on impact investment has focused more on the theoretical challenges and less on the practical issues. Within academia, research has focused mainly on defining impact investment. A uniform definition is lacking among scholars, but two characteristics of impact investments are generally agreed upon. First, the investments have to generate a financial return, and second, there must be some non-financial motive behind the investment (Mogapi et al., 2019). In the GIIN 2019 report, they define impact investments as: "Investments made with the intention to generate positive, measurable

social and environmental impact alongside a financial return" (Mudaliar et al., 2019, p. 52). As other researchers have relied on this definition of impact investment, this is the definition applied in this paper.

A more practical problem that literature has tried to account for is how to measure impact. Despite the efforts in research, an efficient measure of impact has yet to be found (Höchstädter & Scheck, 2015). Major institutions are also focused on solving various practical issues. Global Impact Investing Network (GIIN) provides an investor network, Impact Reporting and Investment Standards (IRIS), provides reporting standards, Global Impact Investing Ratings System (GIIRS), rates impact investments, and ImpactBase offers a searchable online database of investment products (Höchstädter & Scheck, 2015).

Within impact investing, research has also been conducted regarding what motivates the investor (Roundy, Holzhauer, & Dai, 2017). Investor preferences and decision-making have been studied concerning socially responsible and ethical investments (Anand & Cowton, 1993; Bengtsson, 2008; Hofmann, Penz, & Kirchler, 2009). However, to our knowledge, no research has been conducted in an impact investment setting. Shedding light on this topic will contribute to the field by revealing the preferences of the investor.

A vast body of research, using traditional research methods, has been concerned with how the investor makes decisions on traditional investments (Friedman & Savage, 1948; Hillenbrand & Schmelzer, 2017; McFadden, 2001; Nenkov, Inman, Hulland, & Morrin, 2009). A part of this literature is focused on how this decision-making behavior differs from the assumption as being rational decision-makers (Barber & Odean, 2001; J. F. Graham, Stendardi, Myers, & Graham, 2002; Talpsepp, 2010). Therefore, the question is raised whether the findings from research on traditional investments can be applied to the new field of impact investment or if it lacks perspectives.

The behavior of various actors has been broadly studied within a wide spectrum of fields. In this paper behavioral assumptions have been reviewed based on neoclassical economics (Friedman & Savage, 1948), consumer behavior (Darley & Smith, 1995; Genco,

Pohlmann, & Steidl, 2013), cognitive theory (Kellogg, 2016; Logie & Baddeley, 1999), theories on prosocial behavior (Eisenberg & Miller, 1987; Hockerts, 2015; Mair & Noboa, 2006) and also in regard to the theory of planned behavior (Ajzen, 1991; Botetzagias, Dima, & Malesios, 2015; Madden, Ellen, & Ajzen, 1992). It can be considered if these behavioral assumptions can add further perspectives to traditional investment research. Adding such perspectives will allow further understanding of investor behavior, decision-making, and, ultimately, preferences within impact investments.

Not only does the paper seek to apply previous literature on behavior in the setting of impact investing, it further seeks to gain a more direct insight. As most decision-making is a nonconscious process, traditional research methods can have difficulties in exhibiting the entire perspective (Genco et al., 2013). Therefore, a neuroscientific approach, eye-tracking, will be applied to investigate investor preferences in an impact investment setting.

1.1 Research Questions

As mentioned above, a gap in previous literature was found, which this paper seeks to shed light upon. The goal is to investigate the preferences that investors base their impact investment decision on, leading to the research question:

Which information in an impact fund do investors pay attention to when making an investment decision?

This will be investigated using a combination of methodologies, survey, and eye-tracking. Decision-making and preferences are not always conscious; therefore, full insight is not provided by current research, as they rely on traditional non-introspective methods. However, the use of eye-tracking allows direct access to these nonconscious processes. Eye-tracking will, therefore, be used to investigate what information investors pay attention to when reading impact fund information. An assumption applied is that investors' preferences are revealed through visual attention allocation.

The research question will be investigated through several sub-research questions to obtain multiple perspectives on the answer.

1) How do investors allocate their attention to financial information and non-financial information when reading an impact fund?
2) How does gender affect attention allocation?
3) How is the attention allocation to impact information of an investor influenced, and can it be predicted?
4) How do self-reported measures of emphasis and actual investor attention allocation compare?

The focus of the thesis is different from the existing studies as it explores investors from a perspective that analyzes their underlying preferences. A clear insight into how investors allocate their attention will allow tailored recommendations for not only impact investors but also to practitioners, designers of impact fund, and policymakers.

1.2 Delimitation

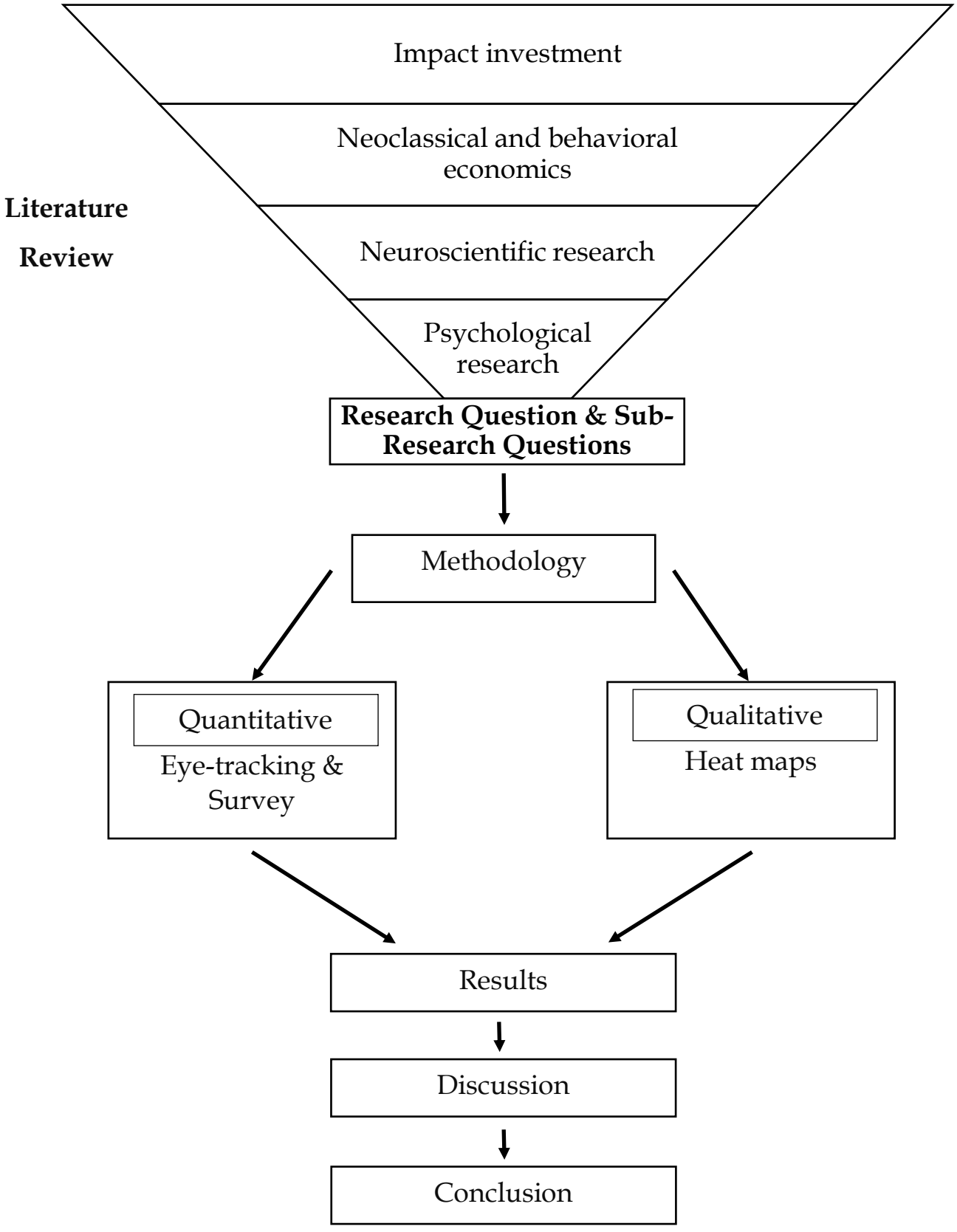
In the formation of the paper, several delimitations were set. The first delimitation was a focus on Danish investors. More specifically, the research method, namely eye-tracking, endured further delimitation to investors in Copenhagen. The stationary nature of our experiment causes this limitation.

While the information available to make an impact investment decision is abundant, the study will only focus on a limited set of information; financial return, risk, impact, and strategy. The reason for focusing only on some elements of impact fund information is to provide narrow and solid suggestions rather than aiming to make general but vague contributions on investors' attention allocation.

1.3 Thesis Structure

The thesis is organized into seven main chapters and sub-sections (see Figure 1.1). The aim of Chapter 1 was to introduce the study's background and recent literature in the field of impact investment and the existing gaps. After being introduced to the problem, the research question was presented. Chapter 2 will provide an overview of the literature review drawing on neoclassical and behavioral economics, and psychological research to understand the research topic. Neuroscientific research will also be reviewed to develop an understanding of attention. Chapter 3 lists the hypotheses and guides the reader on how they were formed. Chapter 4 explains the methodological approach of the research. The motivation for selecting research methods in the study will be discussed. Chapter 5 will present and analyze the results of the experiment assessing the statistical significance of the hypotheses. Chapter 6 summarizes the relevant findings of the research and relates them to literature. Additionally, limitations will be discussed, and suggestions for future research, managerial implications, and theoretical contributions of the study will be presented. The last chapter will make concluding remarks responding to the research question.

Figure 1.1. Thesis Structure



2 Literature review

This chapter first describes traditional economic theories and their limitations to understanding behavior. It is followed by behavioral economic theories that provide an alternative explanation to remedy the shortcomings of traditional economic theories. Next, cognitive functions (working memory and selective attention) affecting decision-makers are reviewed, as well as its implications. Subsequently, the chapter will review eye-tracking and its publications in the area of neuroeconomics. Finally, a section will present behavioral predictors. The development of theories discussed aims to find a direction to investigate a unique topic.

2.1 Investment information

As a starting point to understand the decision process of traditional and impact investments, it is vital to understand the underlying information being processed to make a decision. Legislations in Europe "Undertakings for Collective Investment in Transferable Securities Directive" have set a minimum requirement to provide investors with basic information to make an informed investment decision. This includes; investment objectives and policy (strategy), risk-reward indicator, cost and charges, past performance, and practical information (Ceravolo, Farina, Fattobene, Leonelli, & Raggetti, 2019).

The minimum requirements hold for both traditional and impact investments, but an additional dimension, impact, must be added for impact funds. The evaluation criteria are different from an impact fund whose goal is to implement investments that generate a measurable, beneficial social and/or environmental impact, in addition to a financial return (Mudaliar et al., 2019).

To communicate impact information, the U.N. Sustainable Development Goals has emerged as a credible and understandable framework in the eyes of many investors (Menou & Nishikawa, 2016). The U.N. SDG was adopted by member states of the United

Nations comprising 17 core goals that together provide a roadmap to a sustainable future and a more prosperous world. Those goals range from ending hunger to combatting climate change, with a total of 169 targets to be reached in 2030 (Johnston, 2016). These can be used to report on impact by stating which of the goals that the impact fund support (Mudaliar et al., 2019).

To recap, investors are communicated a minimum of four sources of information (investment objectives (strategy), financial return, risk indicator, and impact) to assess and decide the different impact investment offerings. The question remains, to which of the information investors attend to when making an impact investment decision. Research in neoclassical economics, behavioral economics, psychology, and neuroscience have tried to understand how preferences, biases, cognitive limitations, attitudes, and personality traits affect behavior and decision-making.

2.2 Neoclassical economics and behavioral economics

The majority of today's economic theories are based on neoclassical economics which, assumes the notion of homo economicus or the economic man. The term "economic man" first appeared in response to John Stuart Mill's work in the late nineteenth century (Persky, 1995). The underlying assumption within these economic theories is the view that the economic man is a self-interested and rational decision-maker.

The economic man refers to an idealized person who thinks, decides, and acts according to their self-interests. Even when the economic man concerns themselves with the welfare of others, the driver of this sacrifice is their self-interest. The homo economicus always acts rationally. He systematically examines the alternative courses of action and selects one yielding the highest utility with the least input (Friedman & Savage, 1948).

The economic man operates within the framework of rational choice models, which assumes that they make decisions based on full and relevant information (March, 1978; Simon, 1955, 1978). The rational model also assumes a relationship between preference

and choice where people's preferences are stable, and thus, the decisions they make can reveal their preferences (McFadden, 2001). The economic man can predict every possible outcome for all his choices, and his decision will be the one that will maximize his utility (Friedman & Savage, 1948; March, 1978). A rational decision-maker displays risk aversion and will take risks only when it will lead to a reward with a risk premium (Friedman & Savage, 1948). Based on this assumption of the homo economicus model, investors have the objective of maximizing the risk-return relationship in their investment.

The notion of homo economicus has been under heated discussions among economists and scholars from multi-disciplinary fields. The model itself has received criticisms for being highly reductionist, and behavioral economists have argued that the theories have failed to solve and explain real-life problems. March (1978), argues that pure models of rational choice serve as guides to intelligent action but do not assist in predicting behavior. Similarly, studies by Kahneman and Tversky (1979), argue that the assumptions of rational and utility-maximizing economic decisions are unrealistic in reality since actual behavior differs from the supposed full rationality of homo economicus.

Behavioral economics aims to explain these alternative explanations by introducing realism into economic analysis when relaxing the assumptions of the homo economicus. Behavioral economists have sought to explain the deviation between rational utility-maximation choice and actual behavior by people's bounded rationality.

Simon (1982), was one of the pioneers who questioned the full rationality of homo economicus and introduced the notion that decision-makers are bounded rationally due to cognitive capacity limitations, available information, and time. Simon (1982) proposed to consider cognitive limitations, such as a people's mental ability to store, process, and retrieve information, and how knowledge and experience conditions an individual in the decision-making process.

2.3 Cognitive limitations

To understand why decision-makers, satisfice instead of maximizing, one must recognize the underlying aspects of information processing and how the human brain copes with it. Processing information takes a combination of new and existing knowledge, which is combined using the working memory (Logie & Baddeley, 1999). Working memory refers to a system used to temporarily store new information while retrieving existing information from the long-term memory. People rely heavily on the working memory when making a decision or solving a problem. However, the working memory has constraints on the amount of information it can contain. Thus, becoming a bottleneck for making the most rational decision as it restricts a person's information processing capability.

The restrictions become a problem when the information that needs processing exceeds the capacity of the working memory (Klingberg, 2009). Overload of information derives from two limitations; time constraint for processing the information and the volume of information that needs to be processed (Schick, Gordon, & Haka, 1990). Schick (1990) describes how information overload can result from the decision-maker not having sufficient time to process the information. The volume and complexity of information also play a significant role in information load. An information overload forces the decision-maker to engage in sub-optimal processing strategies, which may result in less optimal decisions.

2.3.1 Selective attention

"What information consumes is rather obvious: it consumes the attention of its consumers. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it." (Simon, 1971, pp. 40–41)

The attention of humans is limited; that is, in situations where the decision-maker risks information overload, the brain must allocate its attention carefully. Attention refers to focusing on and cognitively processing selected cues, i.e., attention is a selective process. Attention is the skill that keeps humans from being overwhelmed by the vast amount of external information present in our surroundings (Genco et al., 2013). Using attention selectively is a powerful tool to navigate through and prioritize task-relevant information (Kellogg, 2016).

2.3.2 Satisficing and Heuristics

When decision-makers face choice environments that exceed their processing capacity, the assumption concerning decision-makers use of full and relevant information cannot hold. When an optimal solution is unattainable, decision-makers make good-enough choices. Instead of using complete information, decision-makers prioritize which information they process. They satisfice instead of maximizing.

Satisficing is the strategy of considering available options until a predefined threshold is met (Simon, 1955). Simon (1955) further states that heuristics can be employed to make second-best approximations of complex "optimal" problems. Heuristics means that people tend to follow a rule-of-thumb approach in decision-making without following rational investigations and analyses. In other words, an accuracy-effort trade-off is made as information and computation are costly and effort demanding (Gigerenzer & Brighton, 2009). Like Simon (1955), Tversky, and Kahneman (1974), questioned the full rationality of individuals by proposing heuristics and biases. Through behavioral decision-making research, they discovered that individuals, when making decisions, systematically appeal to heuristics or mental shortcuts that allow assessments based on partial data (Tversky & Kahneman, 1974).

2.4 Eye and mind

The limited processing capability also applies to the visual intake of information. Thus, visual attention is selective and directed based on cues and heuristics used when processing information. Attention overcomes the visual limitation by optimizing the systems resources by enhancing the representations of the relevant cues while diminishing the less relevant features of the visual environment. Thus the most critical function of selective visual attention is to direct one's gaze towards objects of interest (Carrasco, 2011).

A two-component framework for attentional deployment has recently emerged. This framework suggests that subjects selectively direct attention to objects in a scene using both bottom-up, image-based saliency cues or top-down, task-dependent cues (Itti & Koch, 2001). Bottom-up refers to an object in a stimulus that attracts attention independent of one's internal state. Bottom-up processes that attract attention to the stimulus are object features like color, intensity, orientation, and motions (Itti & Koch, 2001). Goal-driven or top-down explanations, on the other hand, are attention allocation directed mainly by goals of the current behavior, expectations, and knowledge rather than merely by features in the stimulus. These goals may vary with task demands and the need to find particular information in the stimulus (Land & Tatler, 2009). Therefore, when given a task, the decision-maker is expected to allocate their selective attention to task-relevant items and, on the contrary, not allocate attention to task-irrelevant items.

2.4.1 Traditional and eye-tracking research methods

Traditional research methods share the same approach: in-depth interviews, surveys, and focus groups (Genco et al., 2013). Previous literature concerning human behavior and decision-making, using traditional methods, share the same underlying assumptions that preferences, attitudes, and personality traits can be measured by access to the conscious mind. The literature reviewed in this paper relies heavily on traditional research methods to form their theories. To test whether behavioral intentions can be predicted, Ajzen

(1991) relies on studies that use questionnaires to find a correlation between predictors and behavioral intentions. Also, prospect theory by Kahneman & Tversky (1979) relies on a self-reporting methodology where students and university faculty respondents choose between hypothetical choice problems. These are just two examples of pioneering research that have shaped how practitioners, researchers, and scholars perceive human decision-making and behavior, which both rely on traditional research methods.

However, researchers and scholars have stressed that the responses provided by self-reported measures are usually not any better than guesses. Asking people can mislead the findings of the research, i.e., the research is distorted by response bias. It results from biases such as agreeability bias, social desirability bias, knowledge exposure bias, and misinformation bias (Ceravolo, Farina, et al., 2019; Genco et al., 2013). These are biases where the respondent nonconsciously or consciously modifies their response to align the research. The presence of bias could also result from a person's lack of introspective access to nonconscious thought processes and actions (Genco et al., 2013). This bias may occur when people think they are responding truthfully but are not because they do not have access to the insight themselves. These biases include memory bias, emotion access bias, and prediction bias (Genco et al., 2013).

Measurement error could be introduced into the data if respondents misinterpret words, concepts, or entire questions (Neuert & Lenzner, 2016). Furthermore, respondents are suggested to engage in various strategies to reduce cognitive effort under task difficulty resulting in compromised data quality (Krosnick, Narayan, & Smith, 1996).

2.4.1.1 Advantages of eye-tracking over traditional methods

As previously mentioned, response bias and a lack of introspection from the respondents limit the information available to the researchers when using traditional methodologies. Neuroscientific research approaches such as eye-tracking aim to overcome these limitations. Eye-tracking allows researchers to objectively measure eye movements over visual stimuli. A famous metaphor of the eye being a window to the brain establishes a

clear relationship between visual attention and nonconscious thoughts (London, Benhar, & Schwartz, 2013).

According to Land and Tatler (2009), eye movements offer crucial insights into understanding human behavior for two reasons. First, fixation locations provide insight into the changing information requirements. Secondly, the eyes move on an average three or four times per second. This eye movement is done nonconsciously and serves as an objective measure of ongoing cognitive processing, which enables insight into preferences, processes, and feelings.

2.4.2 Application of eye-tracking

The earliest eye-trackers were built in the late 1800s but were uncomfortable for participants (Holmqvist, 2011). Today, eye-trackers are non-invasive, inexpensive, and user-friendly, thus expanding the use of eye-tracking as a research method. Neuroscientific research methods have traditionally been applied within the field of marketing and neuroscience (Ceravolo, Farina, et al., 2019). The aim was to investigate the automatic and nonconscious processes used in decision-making within consumer markets. Traditionally the prevailing notion was that consumer and investment markets were different and, therefore, two uncorrelated research areas (Aspara & Tikkanen, 2010; Ceravolo, Farina, et al., 2019; Fama & French, 2007). However, with the acknowledgment of investments being a consumer product, neuroscientific methods have been adopted by practitioners and academics in behavioral finance studies within investment decision-making.

Drawing on a consumer market perspective, as investigated by Hauff (2014), an investment "message" or "fact", can be presented in different ways to influence involvement in an investment setting. A study using eye-tracking investigated the effects of the visual presentation of the investment (Ceravolo, Cerroni, et al., 2019; Ceravolo, Farina, et al., 2019). The authors assessed how the visual effects of color alter the attention distribution of the investor (Ceravolo, Cerroni, et al., 2019). The same year Ceravolo et al.

(2019) investigated how the orientation of the information, i.e., the difference in physical structure (placement) of information, influences the financial attractiveness of the investment product. Hüsser & Wirth (2014), using an eye-tracking experiment, underlines the irrationality of investors. Their findings reveal that investors pay considerable attention to past performance despite receiving disclaimers that past performance does not guarantee future results. Furthermore, the study highlights that salient information influenced the investors in their purchase decision. The attention on past performance might be explained by this being salient (Hüsser & Wirth, 2014)

2.4.3 Eye-tracking assumptions

Research using eye-tracking techniques is based on the assumption that visual attention and cognitive processes are linked (Just & Carpenter, 1980). According to Just & Carpenter, "there is no appreciable lag between what is being fixated and what is being processed." (1980, p. 331). In other words, there is a direct relationship between where the eyes gaze and what is being cognitively processed.

However, Just and Carpenter's (1980) assumption that the recorded eye movements will reveal the cognitive processing and attention during a task has a significant limitation. Posner (1980), states that attention can be allocated independently of eye position fixating on a target. For instance, when looking at a flower, it is possible to think about an unrelated thing, such as investments. However, while it is possible to attend covertly, i.e., be attentive without making eye movements, it is not only more common but more effective to fixate what we are attending to (Itti & Koch, 2001).

Furthermore, a challenge to the eye-mind assumption is the issue of "wandering mind" or daydreaming. The frequency of this phenomenon varies according to the type of task with mind-wandering decreasing as task difficulty increases (Smallwood & Schooler, 2006).

Studies supporting the congruency between eye movements and cognitive processing supports the eye-mind assumption. There is a link between eye movement and cognition in reading and other information processing. Rayner (1998), links fixations and comprehension. In a later study, Rayner et al. (2006) reveal that fixation increases with word frequency, predictability, and difficulty. The results from Just & Carpenter (1976) show a correspondence between eye fixations and mental operations in a sentence verification task. Although there are weaknesses in the assumptions by Just and Carpenter (1980), we, in this thesis, conclude that we can assume a link between fixation and cognitive processing. We apply this assumption going forward.

2.4.4 Tracking attention

Eye-tracking provides valuable quantitative data and visualizations of eye movements. By tracking where one looks, and for how long, the attention process is captured at a micro-level. Eye-tracking measures can be categorized in numerous ways. The essential metrics include measures based on fixation, pupil dilation, and saccades. When moving the eyes, individuals use a "saccade-and-fixate" strategy (Land & Tatler, 2009). Fixations are periods in which the eye is relatively still on a location, while saccades are fast eye movements to a new location. During a fixation, a scene is projected on the fovea, the small area of the retina with the highest acuity, for detailed visual processing. Fixation derived metrics represent cognitive processing or "visual intake" (Holmqvist, 2011). Fixations last anywhere from tens of milliseconds up to several seconds. Saccades typically take 30 to 80 milliseconds to complete (Holmqvist, 2011).

Fixations can be measured for an area of interest in the stimuli. Areas of interest, also referred to as an "AOI", are the researcher's predefined areas of high importance in a stimulus. Total Fixation Time (TFT) is a widely used metric by researchers. It refers to the sum of all fixation durations in an AOI and is commonly measured in milliseconds. Longer and more frequent fixations indicate effortful processing. A large number of fixations in an AOI can be interpreted as the area being of high interest. Eye-tracking can

also measure emotion by measuring pupil dilation and mental effort by tracking saccades. However, only fixation-based metrics are within the scope of this paper. Most eye-tracking software also offers visualization of eye movements such as heat maps. Heat maps present visual attention indicating not only where individual fixation points are but where whole groups focus their visual attention. They represent static or dynamic aggregations of gaze points and fixations and follow an easy-to-read color-coded scheme (Holmqvist, 2011).

The coupling of eye movement and cognitive processing was researched by Holmqvist (2011). He describes the relation between eye fixations and cognitive processing using the analogy of a rubber band – when stretching the rubber band to one point (the point where attention is allocated), the other end (the fixation point) will follow. Furthermore, the relation of eye movements to the task has also been established. In his pioneering work, Alfred Yarbus observed that:

"depending on the task in which a person is engaged […] the distribution of the points of fixation on an object will vary correspondingly because different items of information are usually localized in different parts of an object" (Pieters & Wedel, 2007, p. 224).

Thus, the eye movements of the participants in the study were contingent upon the task.

2.5 Predictors of investment behavior

To the best of our knowledge, no theories investigating the decision to invest in an impact fund exists. Therefore, the next part of the literature review draws on theories of both consumer and prosocial behavior. The perception of the investor as being a consumer is drawn on the notion of investments being a consumption good (Fama & French, 2007). The view of the investor being a consumer is not new and has been applied in different studies. In one setting, Lemmon and Portniaguina (2006) used models of consumer confidence as a measure of investor sentiment. Furthermore, Fama's (1970) research show how the consumer utility function determines the proportion of portfolio funds invested

in. The connection is further supported by the resembling description of both consumer and investor irrationality in decision-making. Therefore, due to the notion of investors being consumers, this literature review will apply consumer behavior theories to explain investor behavior.

The argument for including theories regarding prosocial behavior is two-fold. First, theories state that prosocial behavior can be linked to moral behavior (Eisenberg & Miller, 1987). Similarly, Anand and Cowton (1993) draw a connection between the inclusion of non-financial return in investments as being due to moral or social factors. The inclusion further aligns with the topic of the social entrepreneurship investigated in Mair and Noboa (2006) as being a prosocial behavior. A social enterprise is described by Hockerts (2015) as an enterprise pursuing an explicit social mission compared to a traditional for-profit venture. This description resembles the purpose of impact investments that seek to generate positive social and environmental impact alongside earning a profit (Mudaliar et al., 2019). The inter-organizational relationship has been established by Hockerts (2019). Also, impact investments have been described as a source of funding for social enterprises (Hockerts, 2015). These linkages between prosocial behavior and impact investments may suggest that theories of prosocial behavior can be applied in the setting of impact investment.

Studies within various fields have explored the relationship between people's psychological, sociological, and demographic predictors of behavior (Botetzagias et al., 2015; Fields, 1975; Katz & Stark, 1986; Muellbauer & Murphy, 1997). Similar relationships might be used to further investigate the behavior of investors. Ajzen's (1991) theory of planned behavior states that behavioral intentions can be predicted. It is one of the most cited theories when researchers attempt to predict behavior. The predictors are proposed to be attitude, subjective norms, and perceived behavioral control (Ajzen, 1991). Broad attitudes and personality traits have been widely researched within investors and their behavior. It has been investigated both within institutional investors (Howe, Deshmukh, Goel, & Howe, 2013; Malmendier & Tate, 2005)

and private investors (Barber & Odean, 2001; J. R. Graham & Kumar, 2006; Mak & Ip, 2017). Studies investigating private investors state that the three most significant demographic characteristics to predict investment behavior is age, income, and gender (J. F. Graham et al., 2002).

2.5.1 Gender as a predictor

The gender of the investors is a topic that has been highlighted within investment behavior (Barber & Odean, 2001; Jamil & Khan, 2016; Sundén & Surrete, 1998). Previous research shows gender differences in how they consider the characteristics of a consumer product (Meyers-Levy & Maheswaren, 1991). Within the field of investment, it is known that female investors are more risk-averse compared to male investors (Bajtelsmit & Bernasek, 1996; Barber & Odean, 2001). In their paper, Barber and Odean (2001) claim that men being overconfident can explain why they are less risk-averse compared to women. The question is where this claimed overconfidence derives from. The answer lies in the difference in how the genders process information in order to make a decision (J. F. Graham et al., 2002). Research shows that women tend to be more detail-oriented and comprehensive when they read. Women get a holistic view of their investments which causes them to be an informed investor (J. F. Graham et al., 2002).

The selectivity model argues that men and women select different cues when processing information. Males often do not include all cues in their information processing but are highly selective (J. F. Graham et al., 2002).

"[…] males frequently do not engage in comprehensive processing of all available information as a basis for judgement. Instead they employ various heuristic devices that serve as surrogates for more detailed processing." Meyers-Levy 1989, as cited in J. F. Graham et al. (2002, p. 19).

Studies indicate that there is a gender difference in information processing. Men tend to look for cues they perceive to be the most salient, i.e., being detail-insensitive, whereas

women attempt to take into consideration all available information (J. F. Graham et al., 2002). As mentioned earlier, the processing capabilities are limited, and processing all available information might not be possible (Kellogg, 2016). Various studies have supported the selectivity model. Research within consumer product advertisements shows that female viewers are more holistic than men when processing the advertisement. They consider a wider range of product attributes and varieties (Darley & Smith, 1995).

Not only does the selectivity model identify a difference in the detail of comprehension but also in the processing consistency between the genders (Meyers-Levy & Sternthal, 1991). Researchers have proposed that comprehension is facilitated by two types of processing; relational and item-specific. Relational processing involves focusing on commonalities or shared themes among discrete information. In contrast, item-specific processing involves focusing on the uniqueness or distinctness of attributes of a particular piece of information (Hunt & Seta, 1984). Women engage in relational processing in which they seek interrelationships, similarities, and differences between multiple cues presented. In contrast, men are more likely to perform item-specific processing, whereby they focus on key attributes (Arcand & Nantel, 2012).

These differences have been investigated in a practical setting. Roy and Chi (2003) examined the differences in the information discovery process for eighth-graders. Boys were observed to filter information at an early stage while girls navigated thoroughly. In other words, boys appeared to use a selective item-specific strategy that focused on relevant cues. In contrast, girls tried to process more comprehensively. In another web search eye-tracking study by Lorigo et al., (2006), they found that men tend to process information in an item-specific manner, linearly looking at search-result abstracts, whereas women tend to make more regressions and revisited information to make more associations among cues (Lorigo et al., 2006).

The conception of self is thought to be an influential regulator that affects information processing. The conceptualization was first proposed in the 1960s and described the male's role as independent and autonomous, are associated with greater concern for the self than for others. In contrast, females demonstrate concern for others, placing greater emphasis on affiliation and attachment and are interdependent and interpersonal (Diehl, Owen, & Youngblade, 2004).

Item-specific processing, often employed by men, can imply a schema-based strategy, i.e., the focus is on the overall message or schemas in the information. This can result in a confirmation strategy where cues confirming the initial hypotheses are processed and recognized over disconfirming cues (Chung & Monroe, 1998; J. F. Graham et al., 2002; Meyers-Levy & Maheswaren, 1991). In short, item-specific processors are more prone to be affected by confirmation bias. Within the setting of traditional investment, the expected return is the most salient cue, which, according to the selectivity model, is what men process. Consequently, when seeing an investment with a high expected return, men hypothesize it to be a good investment and are likely to discard a cue on high risk as it would disconfirm their hypothesis.

2.5.2 Theory of planned behavior

Two popular theories that predict behavioral intentions are Ajzen and Fishbein's (1975) Theory of Reasoned Action (TRA) and Ajzen's (1985) Theory of Planned Behavior (TPB). The theories have been empirically applied to predict behaviors in diverse fields such as investment behavior (East, 1993; Hofmann, Hoelzl, & Kirchler, 2008), health promotion (Lavin & Groarke, 2005) and e-commerce adoption (Pavlou & Fygenson, 2006).

The TRA is a theoretical framework that seeks to explain how individual beliefs attribute to intentions, which subsequently link to behavior. An individual's beliefs are determined by attitude toward the behavior and subjective norms. Attitude toward a behavior is a degree to which performance of the behavior is positively or negatively appraised or evaluated. Subjected norms refer to the perceived social pressure to (not) engage in a

behavior (Ajzen, 1991). The TPB is an extension of the TRA. Perceived behavior control as the third behavioral predictor added to the TRA to create the TPB. It refers to people's perception of the "ease or difficulty of performing the behavior" (Ajzen, 1991, p. 188) of interest. It concerns the extent to which an individual perceives control factors to facilitate or hinder the execution of future behavior.

Both theories assume behaviors as a result of behavioral intention. However, the central difference between the two theories relates to volitional control. The TRA is applicable when the behavior in question is under volitional control (Madden et al., 1992). In other words, individual always has control of whether or not to perform the target behavior. According to both the TRA and the TPB, intention is the central predictor of behavior. It is an indication of a person's readiness to perform a given behavior and is considered to be the immediate antecedent of behavior. Hence, as a general rule, if the attitude and subjective norm are viewed favorably with respect to behavior, then the perceived behavioral control will be greater. This should lead to a stronger will to perform the behavior (Ajzen, 1991).

As mentioned above, the effectiveness of the TPB in predicting intent has been evidenced in various contexts. However, the model has also been criticized in the past decades for its exclusive emphasis on rational reasoning and excluding nonconscious influences on behavior (Sheeran, Gollwitzer, & Bargh, 2013). Therefore, the TPB is less useful in explaining decision-making as it is a nonconscious process. Moreover, the time frame between intent and behavioral action is not addressed by the theory (Monica & Ngahu, 2018). In 2011 Ajzen further published a paper reflecting on the critique being addressed, noting that a meta-analysis found the intention-behavior correlation to be 0.43, i.e., the intention is indeed not always able to predict behavior (Ajzen, 2011).

Regardless of the criticisms, researchers have used constructs of the TPB and added other components to extend the TPB to provide viable alternatives to make it a more integrated model (Hockerts, 2015; Krueger, 1993; Mair & Noboa, 2006). This has been in response to

both some of the limitations of the TPB and amendments made in specific contexts of the subject studied.

2.5.2.1 Attitude toward unethical business

Extending on the TPB, researchers have explored how one's attitude toward behavior can predict behavior. An increased number of people have questioned how their consumption impacts the world around them (Doane, 2001). In his book, Sharma (2009) describes how a person's ethical framework, determined by one's attitude, affects decision making. Ethical issues can add much complexity to the decision-making process (Shaw, Shiu, & Clarke, 2000).

The complexity has led to studies on how sustainable consumption can be predicted based on consumer attitudes. One of the consumer attitudes that has received academic attention is the attitude towards unethical business. Also, the question of whether unethical practices cause negative consumer responses has been raised. The ethical orientation of the consumer must be considered in order to answer this question (Alexander, 2002). Research has been done on the relationship between students' ethical orientation and their likelihood to engage in unethical behavior (Chen & Tang, 2006). To investigate this relationship, the TRA by Ajzen and Fishbein (1975) was used to provide insight into how attitudes, subjective norms, intentions, and behavior are correlated (Chen & Tang, 2006).

The definitions of unethical behavior vary within the different fields of study. Chen and Tang (2006) measure unethical behavior using the parameters; resource abuse, theft, not whistleblowing, corruption, and deception. This paper will not delve further into the definition of unethical behavior but rests on the examples given above.

Findings from Chen and Tang (2006) reveal that attitude toward unethical business (ethical orientation) can predict the likelihood of people engaging in future unethical behavior. If the students in the study perceived an action to be unethical, they were found

less likely to engage in that behavior. Another hypothesis relating to gender difference towards unethical behavior was tested. Findings revealed that men had a higher tolerance towards unethical behavior. As tolerance predicts the likelihood to engage in a future action, men were also found more likely to engage in unethical behavior (Chen & Tang, 2006).

2.5.2.2 Perceived subjective (social) norm

When people behave outside the social norm, it will influence their social status. As humans are social entities, they will modify their behavioral intention upon the social norm (Adolphs, 2003; Ajzen, 1991). Thus, it is justified to use social norms to predict behavior. The TPB proposes social norms to be an influencer of behavior. In the same vein, another well-established model, Norm Activation Model (NAM), shows ample evidence where norms were applied to predict a diversity of prosocial intentions and behaviors (De Groot & Steg, 2009; Schwartz, 1977). One of the behaviors that NAM has been used to predict relates to how norms can affect an individual's helping behavior (Schwartz & Fleishman, 1982).

Social norms are an essential influence on green consumption and have been incorporated into many theories and models (Peattie, 2010). The NAM has also been used to investigate pro-environmental behavior, such as resource allocation to environmental projects (De Groot & Steg, 2009). Guagnano (2001) found the association between one's norms and altruistic behavior, which explained participants willingness to pay a premium for recycled products. The NAM and the TPB have been used to explore the customers' intention to choose organic products at a restaurant. Findings revealed that both subjective and personal norms were factors that led to the customers' intention to visit restaurants featuring organic menu items (Shin, Im, Jung, & Severt, 2018).

In the field of finance, norms have also been recognized as affecting decision making. One study used the TPB to investigate the prediction of retirement saving decisions. In accordance with the TPB, they explored social norms, attitude, and perceived behavioral

control as predictors. Interestingly, they found social norms to be the most important predictor of retirement saving decisions (Croy, Gerrans, & Speelman, 2010).

2.5.2.3 Self-efficacy

Ajzen (1991) notes that his description of perceived behavioral control aligns with Bandura's (1982; 1977) of self-efficacy. Self-efficacy is concerned with one's belief of how well an intended behavior can be carried out (Bandura, 1982; Bandura et al., 1977; Hockerts, 2015). For example, an investor seeking to make an impact will only invest if they are confident that their investment can create a positive impact. It will also be shown in a later section of the paper, that Mair and Noboa (2006) used self-efficacy as a proxy of behavioral control in the setting of social entrepreneurship intentions.

Self-efficacy has also been studied concerning its effect on sustainable consumption behavior. Consumers seek to engage and influence the companies that supply and offer products (Shaw, Newholm, & Dickinson, 2006). The consumer exerts influence through resource allocation, popularly referred to by the metaphor "consumption as voting". With the ability to boycott unethical businesses and reward ethical businesses through "buycotting", some consumers feel able to challenge and change unethical business behavior (Shaw et al., 2006). There can be numerous underlying motivations for individuals to consume consciously. However, they share a common belief that individuals have the power to change things for the better. Self-efficacy is an indicator of the degree to which individuals believe that they can accomplish a task (consume consciously) in order to achieve a goal (changing business) (Lin & Hsu, 2015).

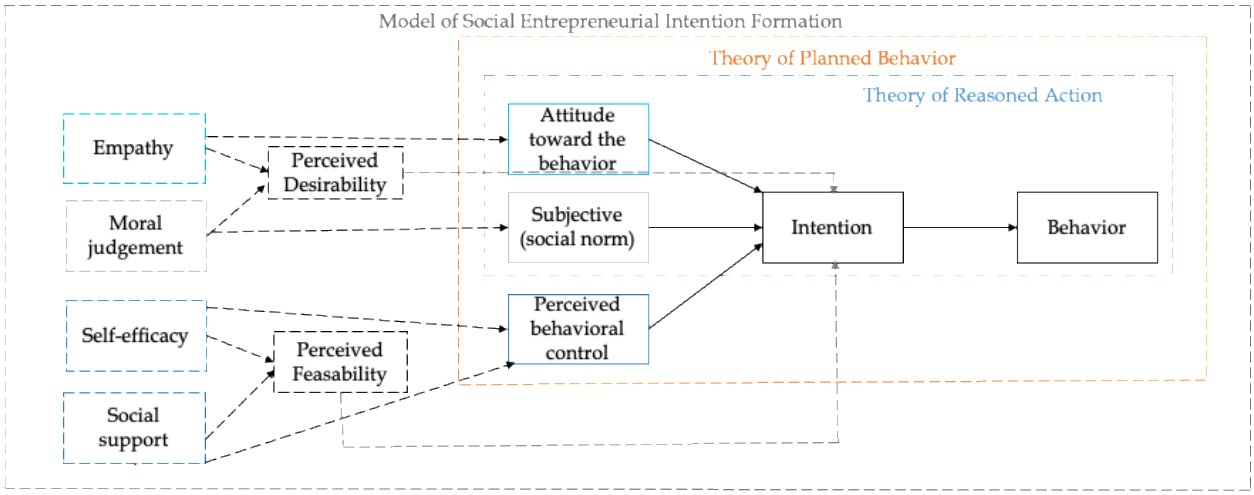
A Finnish study by Pohjolainen et al. (2016) investigating consumer consciousness on meat and environment have attempted to uncover the motivations of a conscious consumer. One of the rated variables was self-efficacy. They found self-efficacy to be the highest among the most conscious consumers (Pohjolainen et al., 2016). These findings also correspond to the research by Lin and Hsu (2015), who found that self-efficacy is positively associated with the individual's green consumer behavior. However, this does

not mean that ethical/green consumption does not occur among less conscious consumers. In the Pohjolainen et al. (2016) paper, for the consumers appearing in the middle of the continuum, ethical behavior is also detected. Interestingly, not self-efficacy but building a positive self-image was the motivation for ethical consumption for the less conscious consumers (Pohjolainen et al., 2016).

Modifications have been applied to the TPB to use it to predict social intentions. Specifically, Mair and Noboa (2006) propose a model to predict socially entrepreneurial intentions, i.e., how likely individuals are of becoming a social entrepreneur, over a traditional for-profit entrepreneur. In their search to identify traits, unique to a social entrepreneur, empathy, moral judgment, self-efficacy, and social support are mentioned as predictors of socially entrepreneurial intentions (Hockerts, 2017; Mair & Noboa, 2006). As described in the TPB, the intention is closely related to performing a behavior, and thereby using predictors in the model is justified (Ajzen, 1991).

In their Model of Social Entrepreneurial Intention Formation (MSEIF), Mair and Noboa (2006) link the beforementioned traits to the predictors in the TPB (Hockerts, 2017). Empathy is proposed as being a proxy for attitude toward behavior and moral judgment as a proxy for social norms. Perceived behavioral control is divided into internal and external control. Self-efficacy being the proxy for internal and social support for external control (Hockerts, 2017). Empathy and moral judgment define the desirability of the entrepreneur, while self-efficacy and social support affect the perceived feasibility of the individual (Mair & Noboa, 2006). Desirability, together with feasibility, is an add on to the TPB and derives from Krueger's (1993) entrepreneurial intention theory. The model states that the perceived desirability and feasibility form behavioral intentions. See Figure 2.1 for an overview of the different models to predict behavioral intention.

Figure 2.1. Overview of Models used to Predict Behavioral Intention



Interrelationships between Ajzen's TRA (1975), TPB (1985) and Mair & Noboa's MSEIF (2006)

2.5.2.4 Empathy

Mair and Noboa (2006) suggest using empathy as a proxy for attitude toward behavior to predict behavioral intentions. This proposal aligns with previous research. Researchers and scholars have, for decades, been concerned with how emotions such as sympathy and empathy can affect people's attitudes and behavior towards topics such as altruism (Eisenberg & Miller, 1987).

The connection of empathy forming attitude and attitude forming behavior is not new. The studies by Eisenberg and Miller (1987), among others, have led to a commonly accepted truth that empathy and sympathy are a significant motivator and predictor of prosocial and altruistic behavior (Eisenberg & Miller, 1987; Pelligra, 2011).

It can be challenging to settle on a single definition of empathy; it may be more insightful to account for its occurrence. Empathy can develop when an individual has the cognitive ability to comprehend the affective or cognitive state of others. Such comprehension can cause an affective response that is congruent with the other individual's emotional state (Eisenberg & Miller, 1987; Mair & Noboa, 2006). Prosocial and altruistic behaviors are

both intentional behaviors that result in benefits for others. The prosocial behavior addressed in Mair and Noboa (2006) is the start of a social enterprise.

Empathy has also been studied within other areas, besides predicting social entrepreneurial intentions. Berenguer (2007) studied the effect of empathy on pro-environmental attitudes and behaviors. The study presents evidence for empathy to be positively correlated with attitude formation and behavior on the topic of pro-environmental action (Berenguer, 2007). Besides attitude being affected, they also found that a higher level of empathy induced people to allocate resources (money) to pro-environmental organizations (Berenguer, 2007).

To summarize, recent developments in behavioral economics highlight the limitations of neoclassical economic models of decision making. The homo economicus model assumes that people are rational decision-makers and utility maximizers. Based on these assumptions, investors will seek to maximize their risk-return relationship. However, due to cognitive limitations, available information and time, decision-makers must be selective in the information they process. Therefore, utility-maximizers satisfice instead of maximizing. For optimal processing, visual attention is selectively directed towards relevant information. The visual attention can be measured by the eye-tracking metric total fixation time. Eye-tracking allows to alleviate some of the challenges of traditional methods known to have limitations in uncovering nonconscious processes.

Furthermore, compared to traditional methods, eye-tracking provides objective data free from response bias. Various factors influence how one processes information for decision-making. Due to differences in information processing strategies, gender has been found as one of the most influential socio-demographic predictors of investment behavior. Additionally, broad attitudes and personality traits have been used to predict behavior in the TPB.

In the theoretical framework, the first predictor "attitude" has been directed towards "attitude towards unethical behavior". The second predictor, "subjective norms" has been

identified as "social norms", while the third predictor "perceived behavioral control" is addressed as "self-efficacy". Moreover, based on a proposal by Mair and Noboa (2006), "empathy" is used as a proxy for further investigating attitude as a predictor.

3 Hypothesis

The hypotheses in this paper are derived based on the previous literature review. Theories on traditional neoclassical economics, behavioral economics, planned behavior, selectivity models, information processing, and neuroscientific insight have been combined to form various hypotheses that make statements on preferences and attention allocation and how these can be predicted.

All hypotheses share commonality as they state a relation between an independent variable and attention allocation. The eye-mind hypothesis states that there is a link between what people visually attend to, and what they cognitively process (Just & Carpenter, 1980). Therefore, this paper rest on the assumption that attention and cognitive processing can be measured by tracking eye-movements. Furthermore, eye-tracking theory states that when individuals process information, their visual attention will fixate on the information (Holmqvist, 2011). As all hypotheses investigate attention, the formulation will apply fixations as a proxy of attention allocated.

3.1 Hypothesis 1

Various established theories make statements on individuals' behavior, both applied for general decision-making, but also in the context of investment. According to neoclassical economics, a financial decision-maker is fully rational and seeks to increase their own utility. Therefore, a rational investor will seek risk that they are rewarded for, i.e., the risk and corresponding reward must be weighted (Friedman & Savage, 1948). This implies that rational investors will base their investment decisions on the risk-return relationship. As people have limited cognitive processing capacity, they must be selective in the information they process (Kellogg, 2016). Drawing a connection, investors will distribute selective attention to the information of interest, which, based on the assumptions of neoclassical economics, are risk and financial return.

The theories mentioned above, and their relationship form the first hypothesis of this research:

H1: Investors fixate longer on the financial (compared to non-financial) information.

3.2 Hypothesis 2

Neoclassical economics assumes homogenous attention allocation for all decision-makers. However, this assumption conflicts with the selectivity model. As previously mentioned, gender is one of the characteristics that is a powerful influencer of investment behavior (Meyers-Levy & Maheswaren, 1991). The reason for the gender differences in investment behavior can be explained by how the two genders process information (J. F. Graham et al., 2002). The selectivity model proposes that women are more comprehensive and willing to process information, while men apply a processing strategy where they highly selectively search for confirming cues (J. F. Graham et al., 2002; Meyers-Levy & Maheswaren, 1991).

As women are assumed to be more comprehensive, it may imply that women distribute attention more equally between information. As fixation is a proxy for attention, we expect a more equal distribution of fixations among women. These assumptions have led to hypothesis 2:

H2: Women fixate more equally on all information compared to men.

3.3 Hypothesis 3

Besides gender been proven as a predictor of investment behavior, broad attitudes and personality traits have been used to predict behavioral intentions in diverse contexts (Ajzen, 1991; Eisenberg & Miller, 1987; Hockerts, 2015; Mair & Noboa, 2006; Pelligra, 2011). In the third hypothesis, this study investigates "broad attitudes and personality traits" proposed by Ajzen's (1985) TPB, to examine how it affects investment behavior.

H3: Broad attitudes and personality traits have an influence on the information investors fixate on.

The hypothesis will be investigated using four sub-hypotheses that each draw on different antecedents of the TPB. A sub-hypothesis on each of the three predictors from the TPB (attitude, social norms, and self-efficacy) is made. Furthermore, a sub-hypothesis tests attitude, using the proxy empathy, as recommended to investigate prosocial behavior (Mair & Noboa, 2006).

An individual's "attitude towards behavior" is used as a predictor of intention in the TPB. In another study, individuals with a high tolerance of unethical behavior were more likely to engage in unethical behavior (Chen & Tang, 2006). Therefore, "attitude" as a predictor of behavior, is applied in this paper, to observe its relation to attention allocated to impact information. Based on the findings from previous studies, a negative relationship is expected, i.e., high tolerance of unethical behavior would imply low attention to impact information.

H3a: There is a negative correlation between attitude towards unethical business and fixation on impact information.

Furthermore, subjective (social) norms have been argued to affect the desire of the individual to act (Hockerts, 2015; Mair & Noboa, 2006). For example, social norms have been proven to influence prosocial behavior (Guagnano, 2001). As previously mentioned, this paper draws a connection between prosocial behavior and impact investment, and therefore, also takes the standpoint of a positive relationship between social norms and attention to impact information.

H3b: There is a positive correlation between social norm and fixation on impact information.

The last predictor of the TPB, perceived behavioral control (self-efficacy), has also been applied to consumption behavior. The findings link high self-efficacy with sustainable

consumption (Pohjolainen et al., 2016). This research, therefore, claims a positive relationship between self-efficacy and attention allocated to impact information.

> **H3c:** There is a positive correlation between self-efficacy and fixation on impact information.

The TPB applied in the setting of social entrepreneurship, used empathy as a proxy for attitude towards behavior (Hockerts, 2015; Mair & Noboa, 2006). Furthermore, a study regarding allocation of resources, found that people who score higher on empathy are more willing to donate to pro-environmental organizations (Berenguer, 2007). Applying these assumptions form the fourth sub-hypothesis.

> **H3d:** There is a positive correlation between empathy and fixation on impact information.

3.4 Hypothesis 4

Based on previous literature, respondents seek to reduce cognitive effort by providing a satisficing response instead of actively engaging (Krosnick et al., 1996). Questions requiring introspection may be biased since respondents may lack introspective access. Furthermore, traditional research methods are proposed to be distorted by response bias (Ceravolo, Farina, et al., 2019; Genco et al., 2013). Neuroscientific approaches have emerged as an alternative solution to overcome these limitations. As assumed in this paper, people visually attend to what they cognitively process. Thus, incorporating eye-tracking methodology will allow direct insight into the conscious and nonconscious cognitive processes (Genco et al., 2013). Thus the implicit response tends to be more objective than the less apparent explicit response received from a questionnaire (Barratt, Rédei, Innes-Ker, & Van De Weijer, 2016).

Based on the premise that the eye-tracking method mitigates the challenges posed by traditional research methods, i.e., response, and introspective biases, the fourth

hypothesis posits that there will be a difference in the self-reported response and eye-tracking data.

> **H4:** There is a difference between self-reported and actual (eye-tracking) emphasis on information.

The hypothesis will be tested using four sub-hypotheses investigating for financial return, impact, risk indicator, and investment strategy information. This has been identified to be the information evaluated by investors when making an investment decision.

> **H4a:** There is a weak correlation between self-reported emphasis and fixation time on financial return.

> **H4b:** There is a weak correlation between self-reported emphasis and fixation time on impact.

> **H4c:** There is a weak correlation between self-reported emphasis and fixation time on risk indicator.

> **H4d:** There is a weak correlation between self-reported emphasis and fixation time on investment strategy.

4 Method

This chapter provides the reader with an overview of the research paradigm and the research design. The section research paradigm will elaborate on the philosophical assumptions of the research. Moreover, the section research design will describe the methodological approach, strategy, and choices.

4.1 Research paradigm

The research philosophy was considered before it was possible to advance into the process of developing knowledge. The research philosophy sets the assumptions of the research by questioning how knowledge can be developed and the nature of that knowledge (Saunders, Lewis, & Thornhill, 2006). The philosophical commitments are essential since they will impact not only the methodological choice but also how one understands the investigated subject. The research question of this study originates from a particular problem identified in both academia and the practical world and seeks to offer managerial contributions.

The focus on practical problems and solutions aligns with pragmatism, which is further supported by pragmatism being a philosophy that embraces a diverse universe of methods (Saunders, Lewis, & Thornhill, 2016). This paper further takes a philosophical stance outside pragmatism, as it also recognizes knowledge that has not yet been tested in the practical world. A positivistic research paradigm is also applied, as the paper's research strategy and collection of data are concerned with testing hypotheses derived from a review of existing theories. As previous knowledge has drawbacks of not gaining complete insight, this research seeks to respond through a natural scientific approach (Saunders et al., 2006).

This paper applies an objectivistic ontology representing the view that reality is complex, yet external to the being, which aligns with both pragmatism and positivism. The complexity also causes pragmatists to acknowledge that there are several ways to

interpret the world, but the interpretation may never picture the entirety. Positivism states that only observable phenomena can offer reliable data, and the paper, therefore, seeks to apply a method that enables behavior to be observable.

The epistemology of this paper leans towards adopting the pragmatistic view as we do not aim to formulate universal laws. What is more important is the meaning of knowledge in a specific context, i.e., knowledge is not universal, but must be seen in the context of its application (Saunders et al., 2016). The epistemology of pragmatism can be related to its aim of solving practical problems as it accepts knowledge when it has been applied successfully. Both pragmatism and positivism research paradigms recognize a wide range of methodological approaches, both quantitative and qualitative, required that it supports the research question. (Saunders et al., 2016).

4.2 Research design

This section will first provide an overview of the methodological choices starting with describing the methodological approach, strategy, and decisions. Following this, the section will lead the reader through the research design consisting of two phases: (1) an eye-tracking experiment and (2) a survey, and the methodological considerations made in the design of each of the two phases.

4.2.1 Methodological approach

The research process started with a literature review. The motive was to go into the data collection phase with an open mind in order to gain new insight "[…], but an open mind need not mean an empty head" (Belk, Fischer, & Kozinets, 2012, p. 32). The acquired knowledge enabled us to develop further into the research process and settle on a methodological approach.

There are two main approaches to acquire knowledge: inductive and deductive. A combination of the two approaches can be used, referred to as an abductive approach

(Rienecker, Stray Jørgensen, & Skov, 2013). This study takes a deductive approach as the aim is to deduce hypotheses developed from various theories using extant literature.

4.2.2 Methodological choice

According to Rienecker et al. (2013), a research paper can either have an epistemic purpose (producing new knowledge and solving a problem) or an epideictic purpose (underlining the value of existing conditions). The methodological choice of this paper can be categorized as epistemic, as it aims to produce new knowledge and solve a real-world problem.

This study will use quantitative data from an eye-tracking experiment and a survey as a basis for the analysis. A qualitative analysis of eye-tracking visualization will further reinforce the quantitative data. The study uses a multi-method approach to test the stated hypotheses and answer the research question.

The primary data collection of this study relies on a neuroscientific research method, namely eye-tracking. The adoption of this method aims to gain insight into the participants' nonconscious thoughts and processes during the experiment (Genco et al., 2013). The eye-tracking methodology enables differentiation of findings since previous contributions in the field have been derived solely on self-reporting methods. Therefore, the application of eye-tracking aims to find the participants' unbiased attention allocation and preference of impact fund information.

Following the eye-tracking experiment, a survey was conducted to supplement the eye-tracking data. The purpose of the survey was to gain further insight into the data collected in the eye-tracking phase of the experiment. The survey provided insight by identifying independent variables used to investigate the hypotheses that make statements on the relation between investor's gender, "broad attitudes and personality traits", and attention allocation. As questions in the survey could potentially reveal the purpose of the eye-tracking to the participants, the only way to structure the experiment was by starting with

conducting the eye-tracking phase followed immediately by the survey. A reversed structure could have caused the data collected in the eye-tracking phase to be biased (Belk et al., 2012; Bryman, 2004; Genco et al., 2013).

To conclude, the data sources consist of:

- An eye-tracking experiment used to gain direct insight into allocated attention
- A survey to provide further insight into independent variables

4.2.3 Sample group

The research aimed to understand the investors' preferences through their attention allocation. Purposive sampling was employed to select investors in Denmark to decrease the differences between the sample and the population. The sampling technique refers to judgments in selecting cases by the researchers to meet and answer the research question (Saunders et al., 2006).

Before inviting subjects to participate in the study, consideration into how to best reflect the population in the sample size was performed. Therefore, it was determined that the sample should consist of both genders represented in all age groups. According to Finanswatch, a Danish online journal about financial markets, approximately 30% of investors in Denmark are female (Hedelund, 2019). This rate was chosen as a benchmark for gender distribution in our study. The sample selection aspired that majority of the participants had investment experience as well as participants who had not invested yet but were looking into investment opportunities. When recruiting participants, we made sure that they were comfortable reading English and did not suffer from any eyesight anomalies.

Self-selection and snowball sampling methods were used to recruit participants. The former method refers to when potential participants express their desire to volunteer in the research. The latter method involves contacting an initial participant in a population who, in turn, identifies further suitable participants (Saunders et al., 2006). Therefore,

acquaintances found fit for the experiment, were invited to participate. This included co-students, friends, and people from our professional life.

In order to generate leads, a post about the study was shared on LinkedIn by our supervisor. People showing interest in the post received an invitation to participate in the study. Another initiative based on word-of-mouth was to invite a private network of senior managers in Copenhagen. Besides these initiatives, we also reached out to Danske Bank's Private Banking Elite department, who invited their impact investing network, but unfortunately, there were no recruitments through this initiative. Participants recruited through the self-selection sampling method were requested to identify volunteers who would be interested in participating.

Theoretically, the optimal sample size can be precisely calculated, given the desired precision and confidence interval (Barrow, 2013). However, the result may provide the researcher with a required sample size larger than what the resources of the study can allow. Therefore, a trade-off must be made between available resources and the precision of the study. In order to determine the appropriate sample size for a master thesis, reviewing similar papers found the use of 12 to 20 participants to be sufficient in an eye-tracking methodology. The intention was to recruit 24 participants and present each participant with six impact funds (one a dummy), producing a total data collection of 120 stimuli.

4.2.4 Environment

Throughout the experiment, the right environment, both regarding the mental and physical, was secured. The monitoring of the experiment room and setup was to create a consistent and uninterrupted experience for all participants. The experiments took place in the Cognitive Laboratory (CogLab) located at CBS Dalgas Have. The lab is suited for this purpose, as it is in a quiet location with few possible distractions and has a waiting area for the participants where they can relax before and after the experiment. Moreover, consistent testing conditions were maintained among all participants, such as lighting

and noise level. Sufficient time was set off for each participant to secure a mentally relaxed environment. We, therefore, set 45 minutes for each experiment, even though the estimated duration of the experiment was 30 minutes.

The participants were provided with a flexible booking system. This was done by creating a webpage where the invited subjects could select from an available timeslot (Appendix A). When booking through this webpage, the system also automatically sent out a confirmation e-mail to the subjects to make sure they received the necessary details (Appendix B). The confirmation e-mail also had an option to cancel or reschedule the experiment if needed. The system also automatically sent out a reminder one hour before the appointment communicating the practical information regarding their visit (Appendix C). Upon arrival, participants were offered beverages and snacks. Before the experiment, the participants were asked to sign a consent form (Appendix D) to comply with General Data Protection Regulation (GDPR) guidelines.

4.3 Phase 1: Eye-tracking

The following section provides details on the eye-tracking phase of the research design. It covers; the purpose of eye-tracking as a method, the preparation of the experiment design, the equipment used, the design of the experiment, and how it was conducted.

4.3.1 Purpose

The purpose of implementing eye-tracking as a part of the research design is two-fold. The first motivation, as mentioned earlier in the chapter, was to overcome the drawbacks of the research methods used in previous papers. Belief formation occurs nonconsciously, and people are mostly unaware of how beliefs are formed (Genco et al., 2013). Relying on the eye-mind hypothesis by Just and Carpenter (1976), tracking the movements of the eye is insightful to understand the implicit process of perceiving, and forming a belief towards the impact fund. This insight would be challenging to uncover through traditional research methods.

Second, the application of eye-tracking helps overcome an important limitation to the TPB, as proposed by Ajzen (2011), the varying abilities of intentions to predict actual behavior. By using eye-tracking, the study overcomes this limitation. The research objective is to find which information investors base their impact investment decisions upon. Eye-tracking provides us with the investors' actual behavior, attention allocation, and not intentions on how to allocate attention.

4.3.2 Preparation for experiment design

To effectively design the eye-tracking experiment, the material on the technicalities of eye-tracking, as well as previous studies using eye-tracking to investigate investment information was reviewed. Two articles were particularly insightful; "Attention allocation to financial information: The role of color and impulsivity personality trait" written by Ceravolo et al. (2019). This paper impacted our research design, as it focused our awareness on colors and other "nudges" as possible distortions in our research design.

Another paper also led by Ceravolo et al. (2019), "Presentational format and financial consumers' behavior: an eye-tracking study" focused on how the orientation and physical position of textual information affects attention allocation of the investors. This paper made us aware of the importance of orientation and influenced the design layout by incorporating different orientations amongst different groups.

When the experiment design was completed and built into the eye-tracking program, two pilot experiments were conducted. The participants for the pilot experiments were selected as one person being knowledgeable on the research topic, and the other having an understanding of experimental designs. Following the pilot experiments, proposed changes were incorporated, including reducing details about the impact fund information, adding a time-constraint, and also adding a practice (dummy) impact fund. The pilot experiments ensured functionality and that the right and sufficient information for answering our research question was obtained.

4.3.3 Equipment & calibration

In order to conduct the research, we requested access to CogLab at Copenhagen Business School. The CogLab at Dalgas Have has two eye-trackers. One is the Eyelink 1000 eye-tracker, which has a high sampling rate and precision. It is, therefore, suitable for detailed eye-tracking studies, e.g., if the focus of the study is on individual words. A drawback to this system is that it requires training to use as it is not intuitive. The CogLab also has an SMI iView X RED, made by SensoMotoric Instruments in Germany, which is a remote eye-tracker and, therefore, not invasive for the subject. The SMI iView X RED records at a sampling rate of 50 Hz and is less precise and more suitable to study sections of texts rather than individual words. However, it is more intuitive and does not require training. When choosing between the two systems, a decision to select the more intuitive system, SMI iView X RED, was made as sufficient data to answer the research question could be obtained.

The eye-tracking system was accompanied by software, Experiment Center, Version 3.6. The software was used to both design and present the experiment. The stimuli were displayed on a 19" screen, the aspect ratio was 5:4 and had a resolution of 1280x1024 pixels. Participants were seated at a viewing distance of 60-80 cm, as recommended by Holmqvist (2011). A mouse and a keyboard were also provided. The physical set up and calibration of the eye-tracking device is a crucial part of getting valid data. For this reason, all recommendations provided by the manufacturer of the equipment and eye-tracking guides were followed.

4.3.4 Design of stimuli

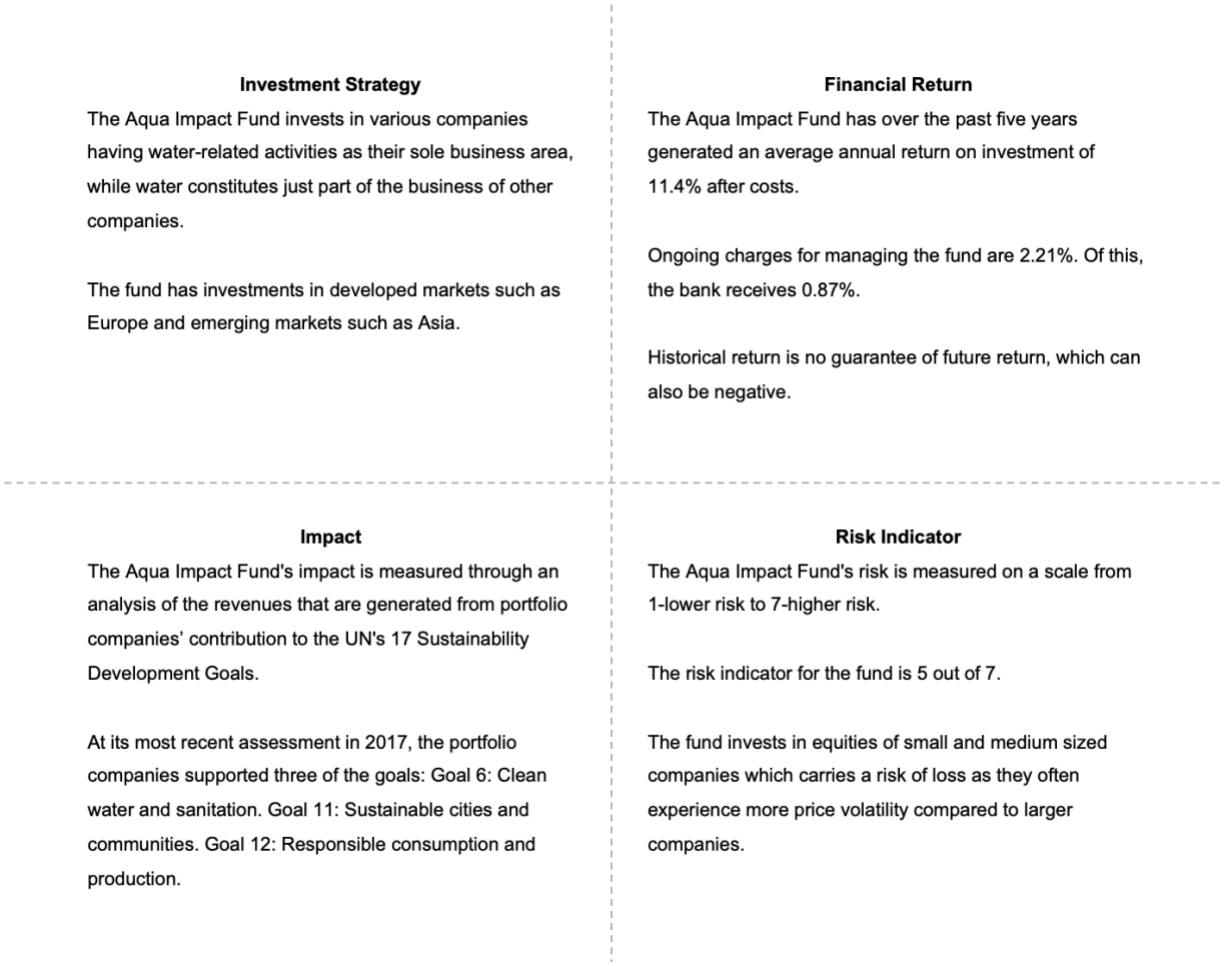
This section describes the process and decisions that were made concerning the design of the stimuli. Furthermore, information regarding control for biases such as bottom-up attention and the top-left bias are elaborated.

Stimuli content

In the eye-tracking experiment, the participants were presented information on six different impact funds to evaluate the overall attractiveness of the impact fund. An example of the stimulus can be seen in Figure 4.1. For the visual stimuli used in the experiment, marketing information of six impact funds were used: Africa Microfinance Fund (Appendix E), Aqua Impact Fund (Appendix F), Climate Impact fund (Appendix G), Euro Bond Impact Fund (Appendix H), Gender Equality Impact Fund (Appendix I), and Organic Growth Impact Fund (Appendix J). The six themes were selected as they are among the most popular impact investment themes within the Scandinavian countries Denmark, Norway, Sweden, and Finland (Impact X, 2019). The content of the marketing information was adapted, and the narrative of the impact fund was standardized into textual information that fit four equal-sized quadrants (AOIs), "investment strategy", "financial return", "impact", and "risk indicator". The text in the header was centralized and bolded to increase the salience of the four AOIs.

The AOI investment Strategy contained a description of the impact fund and its geographical focus. The AOI financial return contained information related to the fund's average annual return over the past five years, ongoing charges of managing the fund, bank charges, and a disclaimer that past performance is not an indicator of future performance. The AOI risk indicator provided the risk information of the fund measured on a scale from 1-lower to 7-higher risk. It also communicated the relevant risks of the impact fund. The AOI impact presented the U.N. SDG supported by the fund. It was aimed for the structure, narrative, length, and processing fluency to be consistent. The decision in favor of consistency was made to reduce noise and variation across the stimuli.

Figure 4.1. Example of Visual Stimulus Presented to Group 1



Controlling for bottom-up attention

As mentioned previously in the paper, the experiment can be influenced by unwanted external factors, which may affect how people allocate their attention. In the experiment, attention allocation other than ones based on internal preferences, processes, and thoughts would bias the result of the research. These distortions may arise in the environment, physical setup of the experiment, and in the stimuli the participants assess. Section "4.2.4. Environment", accounts for how external influences from the environment were controlled.

The stimuli to be presented to the participants were carefully designed not to include visual cues that could potentially bias attention. Some well-known bottom-up processes that distort attention are color, intensity, motion, and orientation. In order to control for

the distractors in the stimuli, we impoverished the information sheet. We chose to modify the colors, aligning the intensity, excluding motions, and controlling for orientation. Therefore, the stimuli were solely based on text from the impact fund.

The presentation of the visual stimulus was monochromatic. The decision to not use colors was essential as colored stimuli have proven to influence investors' attention allocation (Ceravolo, Cerroni, et al., 2019). The stimuli were displayed in Arial, font size 11 for comparability, reduce variability, and reading ease. Additionally, salient visual designs attract bottom-up attention (Parkhurst, Law, & Niebur, 2002). Therefore, graphs were excluded. Previous studies have demonstrated the effects of logos as visual distractors (Hillenbrand & Schmelzer, 2017). The bank's name and the real name of the impact fund were undisclosed to rule out the influence of the brand and reputation of the financial institutions.

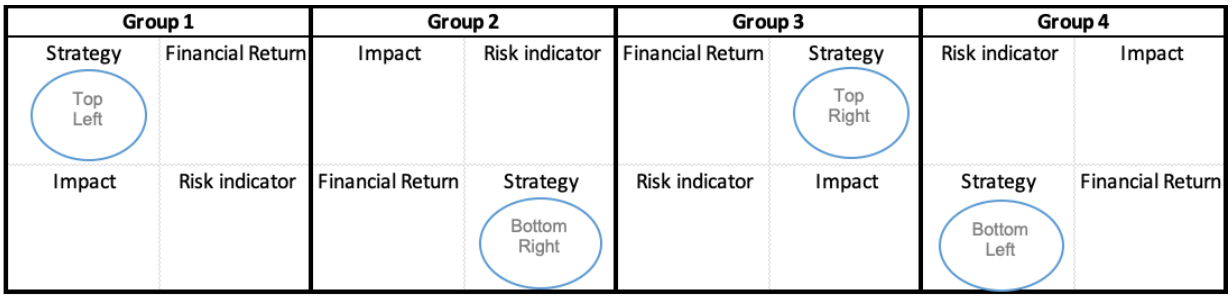
Controlling for orientation

The findings derived from the research of Ceravolo, Farina, Fattobene, et al. (2019), reveal that people tend to have a top-left bias when reading investment information. A potential solution to solve the top-left bias would be to randomize the orientation of the AOIs. However, randomizing the orientation of the AOI would not be ideal since participants would spend the first few seconds trying to locate the information. Consequently, the eye-tracking data would be unreliable as it would not only record attention based on interest but also eye-movements that are gazing in order to navigate the information.

To resolve the issue, the participants were split into four groups. Different versions of the stimuli were presented to each group. The content remained constant, only the location of the AOIs differed between the versions. The orientation of the AOIs for each group can be seen in Figure 4.2. The set up provided each group with a familiar and user-friendly experience. The experiment design included another variable to counter orientation bias: before each stimulus was presented on the screen, a cross was displayed. When the system detected that the participants fixated on the cross for at least 200 ms, they were

presented the next stimulus. This was done in order to provide a common starting point for the eye-movements of all participants. The experimental setup was preferred in order to prevent orientation bias and reduce statistical deviations. When splitting into groups, the aim was to distribute the participants evenly based on demographics.

Figure 4.2. The Orientation of AOIs Among the Four Groups



Note that the AOI investment strategy appears in each location represented using a circle. Each AOI, across the groups, also appears in the top-left corner.

Controlling for learning

In order to control for learning, the eye-tracking experiment was divided into two parts.

1) Familiarization of data
2) Collection of data

In both sections, the participants viewed the presentation of impact funds in the following order: Africa Microfinance Fund, Aqua Impact Fund, Climate Impact fund, Euro Bond Impact Fund, Gender Equality Impact Fund, and finally, Organic Growth Impact Fund.

Part 1 - Incorporation of learning and familiarization

In the first part, the information about the impact funds was presented to the participants without time constraints. They could choose to proceed to the next impact fund by pressing the space bar on the keyboard. Once they were done reading the first stimulus,

the next stimulus was immediately presented on the screen. No option was offered to go back to the previous screen.

The motive of the first part was for the participants to undergo a learning process. Not being restricted by time, allowed them to familiarize themselves with the position of the different information on the impact fund. For familiarization, an example stimulus was presented with only headings of four AOIs: investment strategy, financial return, impact and, risk indicator without any texts, clearly stating that it was an example of how the information would be positioned (Appendix K).

To take the learning process a step further, the Africa Microfinance Fund was presented as an example, as it was a close representation to the other five impact funds. It was intended as a dummy fund so participants could familiarize themselves with the format. The eye-movements from the Africa Microfinance Fund were not intended to be included in the data to be analyzed. Participants were not informed that the first section was a "learning round" nor that the Africa Microfinance Fund was a dummy fund. The learning round allowed data collection in the following round based on eye movements driven by interest rather than visual information search.

Part 2 – Data collection

In the second part of the experiment, eye-tracking data to be used for analysis were recorded. This part aimed to track goal-driven and overt attention. To achieve this, two design variables were implemented. First, the participants were assigned a task, thus setting them with a goal. Asking the participants to rate the overall attractiveness of the fund was done to put their mindset into making an investment decision. It encouraged the participants to search for and direct top-down attention to the information they found relevant in order to solve the task. Besides, asking the subjects to rate the overall attractiveness sought to increase involvement and motivation.

The second design variable was setting a time constraint of 15 seconds to review the impact fund information. The time constraint was to prevent "mind-wandering". It assured that the experiment would record overt attention, rather than covert attention. The 15 seconds were settled on during the pilot tests, where different durations were tested.

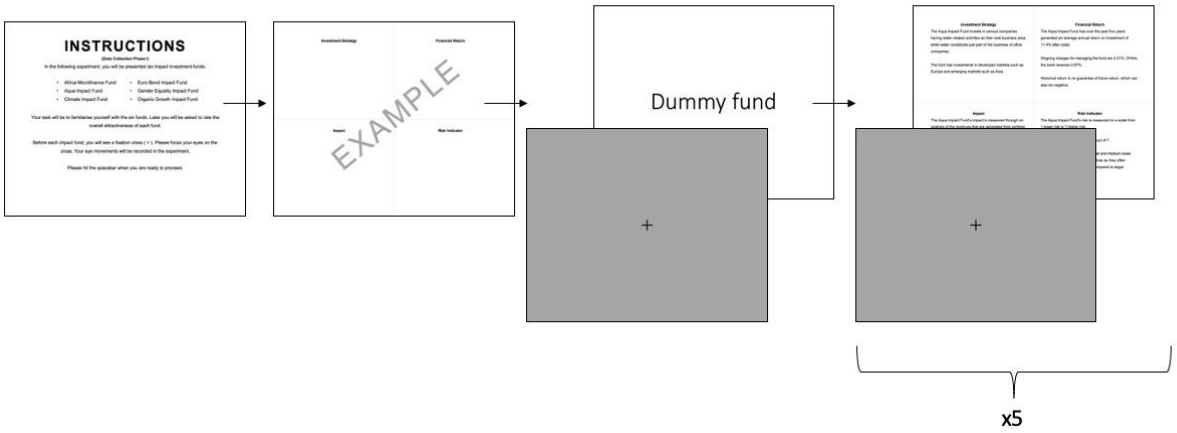
4.3.5 Conducting the experiment

After obtaining consent, participants were seated in front of a monitor integrated with the eye-tracker, mouse, and keyboard. Participants received a standardized verbal briefing on what to expect throughout the experiment. The briefing also included a task instruction, focused on the actions required by the participant. The purpose of the research was not disclosed in the briefing. The ethical considerations of the briefing were two-fold. Firstly, it was reinsurance of informed consent, and secondly, it was intended to create confidentiality from the participant (Kvale & Brinkmann, 2015). The eye-tracker was configured for each participant's pupil. First, necessary adjustments were made to the equipment; chair, desk, and screen. Next, a 5-point eye-tracking calibration test was initiated. This involved the participants following a dot with their eyes on the screen, stopping at five fixed points. The calibration was repeated until an acceptable calibration of less than 1 degree of visual arc was met. This test was performed to get an acceptable degree of visual angle for precise and accurate data. Following an acceptable calibration and validation, the experiment was then initiated.

In the first part of the eye-tracking experiment, the participants viewed an instruction stimulus (Appendix L) on the screen. Participants were asked to familiarize themselves with the six impact funds with no time limits. The participants were informed that they would later be asked to rate the overall attractiveness of these impact funds. They could move forward to the next stimulus after reading the information by pressing the space bar. Before each stimulus, a fixation cross was shown. The display of fixation cross

followed by the impact fund was repeated five more times (one for each fund). For a visual representation of the first section, see Figure 4.3.

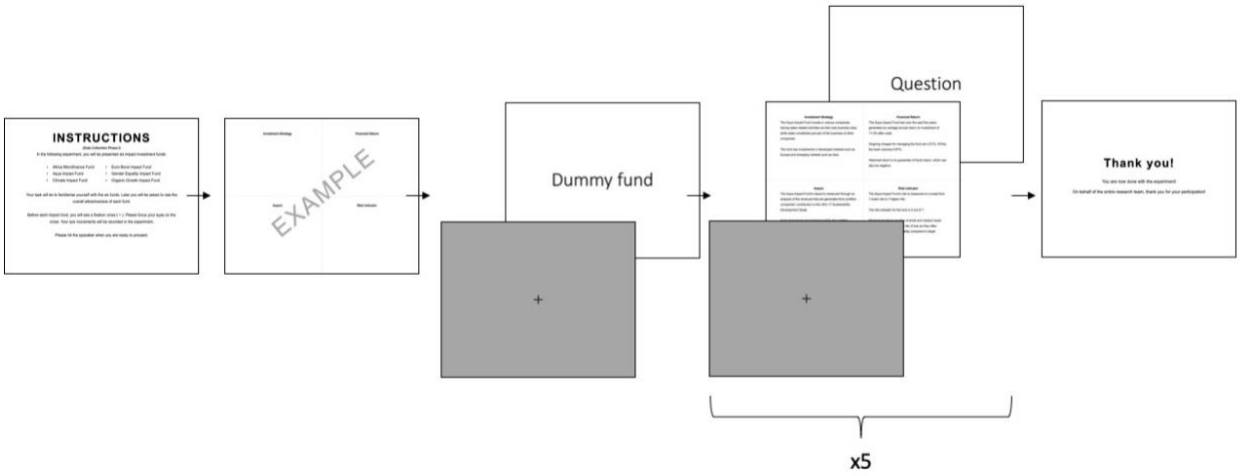
Figure 4.3. Visual Representation of Part 1 of the Eye-Tracking Experiment



Experiment without time constraints.

After participants had finished the first part, they were presented with a second instruction stimulus (Appendix M). The participants were informed that they would view the same six impact funds again with the time-constraint of 15 seconds. They were further instructed that immediately after reading each impact fund, they would rate the overall attractiveness of the fund. The sequence of the fixation cross followed by the stimulus was repeated in this section. After reading the impact funds for 15 seconds, participants were automatically directed to the questionnaire. The respondents delivered their response to the overall attractiveness of the stimuli as high, medium, or low, making their selection through a mouse click. The participants were not constrained by time when providing their answers. This procedure, fixation cross, impact fund, and a questionnaire were repeated five more times. After the final questionnaire was completed, a stimulus appeared on the screen thanking the subjects for their participation. For a visual representation of the second part see Figure 4.4.

Figure 4.4 Visual Representation of Part 2 of the Eye-Tracking Experiment



Experiment with a 15 seconds time constraint and questionnaire.

4.4 Phase 2: Survey

This section will cover the purpose of including a survey into the research design, which hypotheses it aims to collect data for, and how the survey was designed.

Purpose

The purpose of the data collection was to identify the participants' socio-demographic information, broad attitudes, and personality traits. These characteristics formed the independent variables and were used in conjunction with the eye-tracking data to test the hypotheses that state a relation between characteristics and attention allocation.

Surveys are an excellent tool for collecting standardized information using standardized questions. It requires that the respondents must understand the same questions in the same manner (Robson, 2016). A questionnaire is a diverse tool and is applicable in both descriptive and explanatory research. It can be applied on its own as the only data collection method, or combined with other research methods, both quantitative and

qualitative. Questionnaires can be divided into two types: self-administrated and interviewer-administrated. A criterion for both questionnaire types is that the researcher has prior knowledge of the information to gather to ensure sufficient data is collected (Saunders et al., 2006).

In surveys where the primary purpose is to collect information on a population's characteristics, the survey sample must be as representative as possible. Afterward, the generalization based on the data can be made. Researchers can gather three different types of data using questionnaires; opinion, behavior, and attribute. The researcher needs to be aware of the type of data they want to collect, as it will impact the wording of the questions. The questions can also be open, closed, or forced-choice, and is also a significant factor for the researcher to consider as it influences the understanding and answer to the question (Saunders et al., 2006).

Survey design

The survey applied in this study is self-administered, and the data was collected using the software "Microsoft Forms" on a laptop outside the experiment room. Before designing the survey, we formulated the framework for the hypotheses to investigate, which paved the way for gathering the right and sufficient information. The recommendation of Saunders et al. (2006) to gather a broad dataset was applied as we would rather exclude excess responses ex-post, than lack adequate data. The survey questions are mostly concerned with the respondents' opinions and attributes. As recommended by Genco et al. (2013), we did not ask the participants of expected behavior, as people have difficulties predicting their future behavior.

The survey consisted of 18 questions comprising of participant's socio-demographic information such as gender (M/F), age (open question), annual income (range), sector worked in (checkbox), financial products previously invested in (checkbox), investment motivation (checkbox), investment experience in years (range), investment for others? (Y/N) followed by an option to elaborate (open question).

We employed 7-point Likert scales to record the preferences and attitudes of the respondents. A 7-point Likert scale is a method of ascribing quantitative value to qualitative data (BusinessDictionary, 2020). Thus, allowing us to gather quantitative data for statistical analysis. A further argument for using a 7-point Likert scale is that it has the width to capture differences between participants without the participants feeling forced to respond in one of the extremes (Saunders et al., 2016).

The Likert scale-based questions were the primary source of independent variables in the study. Participants self-reported which information they emphasize by responding to the statement: "when making an investment decision, I put the most emphasis to financial return". They responded using the 7-point Likert scale, where they rated from 1- strongly disagree to 7- strongly agree. Similarly, the response was collected for the other three AOIs.

To evaluate the participants' broad attitudes and personality traits to be used in hypothesis 3, the 7-point Likert scale was also applied. The participants were presented different statements about unethical business to assess the participants' attitude towards unethical business, with the higher response equating to being more tolerant. For self-efficacy, empathy, and social norms, similar statements were presented, where the participants responded how much they agreed.

The questions used in the survey were settled on through a combination of questions that we decided on ourselves, and some questions were found in other research papers. A subset of questionnaire items from Hockerts (2015) was used to measure self-efficacy, empathy, and social norms. The reason for using questions from another study is that a question on attitudes and personality traits can easily be biased, and we wanted a question that has previously been tested. We anonymized the information to protect and ensure the privacy of the respondents.

5 Data Analysis

This chapter will first account for the steps taken to improve data consistency and quality. Next, the dependent and independent variables will be presented. The results will subsequently be reported, starting with a descriptive statistic of the data, followed by testing of the hypotheses. Finally, a brief qualitative analysis based on heat maps will provide further insight into the attention allocation.

5.1 Data validity and reliability

Various factors could influence the validity of the data. These are specifically the participants, experiment operators, the task, environment, and the eye-tracking system (Holmqvist, Nyström, & Mulvey, 2012). Therefore, several methods were employed to ensure the validity of research results based on eye movement data. The eye-tracking data quality from participants who had a normal or corrected-to-normal vision was deemed acceptable. However, eye-tracking data for one participant was removed from the analysis due to technical issues.

The eye-tracker SMI iView X RED operates at a sampling rate of 50 Hz, which means that the position of the eyes is registered 50 times per second. With a significantly large dataset available, the output was determined to be consistent. Moreover, the fixation cross before each stimulus contributed to ensuring the reliability of the data. The experiment was designed for participants to observe the stimulus and make as few inputs and minimal head movements. As mentioned in section 4.2.4 Environment, the recording setting was monitored for consistency and stability by the experiment conductors.

A reliability analysis was performed to calculate the Cronbach's alpha before being merged into a single variable. Cronbach's alpha is a measure of the internal consistency of a variable. The internal consistency describes the extent to which items in a group measure the same concept (Tavakol & Dennick, 2011). When testing for internal consistency, the relatedness of the items in a group is tested (UCLA, 2020). Running the

items for each group in IBM SPSS allowed us to identify items that decreased the reliability of the collected variables and thereby exclude these items in the aggregated measure. This test has improved the study with variables that contain higher internal consistency.

5.2 Independent and Dependent variables

This section will present the key variables used in the analysis, starting with an overview of the dependent variables.

Dependent variables

The eye-tracking measure fixation represents visual attention. Fixation is a collection of multiple gaze points on an object measured by the eye-tracker. The variable, "Total Fixation Time" (TFT) measured in milliseconds (ms), is the sum of the fixation durations inside an AOI. In general, higher fixations in an AOI links to the degree of cognitive processing (SensoMotoric Instruments, 2012).

The study aimed to find which AOIs were attended to by the participants. Eye movements for the participants were extracted from SMI Experiment Center for further analysis. The eye-tracking data was then processed using the analysis software, BeGaze using an area-of-interest approach. The four AOIs, namely financial return, investment strategy, impact, and risk indicator, were defined manually in BeGaze. The software enables the possibility of viewing results from the experiment in a simplified format. Before exporting the raw eye-tracking data, an inspection of all available reports was conducted. Finally, a report containing all desired measures was extracted for further statistical analysis. The exported raw data were processed in MS-Excel.

First, all stimuli irrelevant to the analysis (such as instructions and questionnaires) were excluded. Additionally, only data from the "data collection" part of the experiment were processed for further analysis, i.e., experiment data where participants had 15 seconds to view the stimuli. The final stage of data cleansing was to derive the dependent variable,

TFT, per AOI for each participant. Therefore, an aggregation of the raw data was required. The TFT for each AOI from six impact funds was aggregated to form the average TFT per AOI (dependent variable). See Table 5.1 for an example of calculation. After the dependent variable was calculated, the data was processed using IBM SPSS for further statistical analysis.

Table 5.1. Calculation of TFT per AOI for a Participant

Participant	Impact Fund	TFT, Impact	Aggregated TFT, Impact	TFT, Return	Aggregated TFT, Return	TFT, Risk	Aggregated TFT, Risk	TFT, Strategy	Aggregated TFT, Strategy
1.03	Africa Microfinance	2.069	2.553	5.410	3.793	3.382	2.118	1.651	4.141
	Aqua	1.711		4.754		1.273		4.793	
	Climate	2.566		3.839		1.750		4.097	
	Euro Bond	1.889		2.268		1.253		7.459	
	Gender Equality	4.436		4.197		2.466		2.148	
	Organic Growth	2.646		2.288		2.586		4.694	

An example of aggregated TFT_{impact} for participant 1.03 calculated as the mean of column TFT, Impact

A reliability analysis was used to test the internal consistency of the six impact funds in terms of TFT. Table 5.2 below summarizes the results. The Africa Microfinance Fund was initially intended as a dummy fund to be used for learning and familiarization of the contents in the stimuli. It was expected that including the dummy impact fund in the data analysis would bias the findings due to learning effects. However, Cronbach's alphas disproved the expectation and showed Africa Microfinance Fund not to be an outlier. Therefore, to raise the total number of stimuli, it was decided to include Africa Microfinance Fund to the data analysis. Moreover, including the fund would have a more significant impact on the study's statistical power rather than as an example fund. When calculating the Cronbach's alphas for all impact funds, including Africa Microfinance Fund, values ranged from 0.604 to 0.841, which are above the recommended cut-off point 0.600 for acceptable reliability (Hair, F. Jr., Babin, B., Money, & Samouel, 2003).

Table 5.2. Cronbach's Alpha Values for Six Impact Funds by AOI

Area of Interest (AOI)	Cronbach's Alpha	N of Items
Impact	0.841	6
Financial Return	0.842	6
Risk Indicator	0.685	6
Investment Strategy	0.604	6

Independent Variables

The independent variables from the eye-tracking data used in the analysis are the four main sections of the stimulus, namely AOIs, "financial return", "investment strategy", "impact", and "risk indicator". The other independent variables are "financial information" that consists of AOIs financial return and risk indicator and "non-financial information" that represents AOIs, investment strategy, and impact.

The questions from the survey also formed independent variables. The survey data was exported into MS-Excel to extract independent variables. The data was then cleansed to import into IBM SPSS, which accepts only numeric values. Therefore, the data was converted, e.g., female assigned with value "2"; male "1". The Likert scales were also converted into numeric values, i.e., "1 – Strongly disagree" into "1". Negatively oriented questions were reverse coded, i.e., value "7" was transformed into a "1" and so on. Question 18 consisted of 7 sub-questions intended to measure empathy. These were divided into two subcategories; empathy (sub-questions a-d) and moral obligation (sub-questions e-g).

To transform the responses into independent variables, the survey data had different processing requirements. Two questions did not need aggregation and could directly be derived from the responses. The first was question 2 that asked for the gender of the participant and made up the independent variable "gender" that is used to test hypothesis

2. Question 13 asked the participants what they put the most emphasis on when making an investment decision. The question consisted of a Likert scale where the participants could rate the information "financial return information", "risk information", "strategy information", and "impact information" on a scale from 1-7, (7 indicating most emphasis). Each sub-question made up a variable for self-reported emphasis; (13a) "$emphasis_{return}$", (13b) "$emphasis_{risk}$", (13c) "$emphasis_{strategy}$", and (13d) "$emphasis_{impact}$" to be tested in hypothesis 4.

The cleansed data, including the existing independent variables, were imported into IBM SPSS for further analysis. Questions 14 to 18 consisted of several sub-questions, and therefore Cronbach's alpha was calculated to test for internal consistency. The test was necessary to determine if the sub-questions could be aggregated into an independent variable. Cronbach's alphas suggested an increased internal consistency by excluding some sub-questions. Therefore, it was decided to drop the sub-question in favor of increasing internal consistency.

To form the independent variables to be tested in hypothesis 3, Cronbach's alpha must be calculated. The results of Cronbach's alpha are summarized in Table 5.3. In question number 14, the four sub-questions assessed the participants' attitude towards unethical business. Following a reliability analysis, sub-question d was removed. The remaining three sub-questions were aggregated, making up the variable "Attitude towards unethical business", obtaining a Cronbach's alpha of 0.800. Question 16 relating to social norms was intended to shed light on financial (a, b, c, and d) and non-financial (e, f, and g) social norms. The sub-questions 16 e, f, and g were combined to make the variable "social norm - non-financial" obtaining a Cronbach's alpha 0.901, i.e., no "social norm – non-financial" sub-question had to be excluded. To form the variable assessing the self-efficacy of the participants, sub-questions 17 a and b were combined (17c excluded). This combination achieved a Cronbach's alpha of 0.788. As mentioned earlier, question 18 was divided, and sub-questions 18a, b, c, and d were intended as "empathy". However, sub-question 18a was excluded making up a variable that rated 0.751.

Table 5.3. Variable Names, Descriptive Statistics and Cronbach's Alpha Values for Questionnaire Items

Question	Scale	Sub-question	Variable Name	Descriptive Statistics	Cronbach's Alpha
14. Please indicate the degree to which you agree with the statement: For you, investing in equities that can be considered "unethical" business is ...	1 - Strongly disagree, 2, 3, 4 - Neither disagree nor agree, 5, 6, 7 - Strongly agree	14a)...an unavoidable part of investment practice 14b)...sometimes necessary 14c)...the price of being a successful investor 14d)...required to make a profit	Attitude towards unethical business	Mean=2.39 SD=1.50	0.800
16.When I talk to my family, friends, and work colleagues...	1 - Strongly disagree, 2, 3, 4 - Neither disagree nor agree, 5, 6, 7 - Strongly agree	16a)...I often talk about my investment strategy 16b)...I want them to see me as a successful investor 16c)...I like to project the image of a savvy investor who makes profitable investments 16d)...It is important to show that I have as good or higher returns than my peers 16e)...I want them to see me as an investor who cares about impact 16f)...I like to project the image of a responsible investor who makes investments with a positive social impact 16g)...It is important to show that my investments create as much social impact or more social impact than my peers.	Social norm - non-financial	Mean=3.37 SD=1.52	0.901
17.Do you feel that as an impact investor you can cause change in a firm's behavior?	1 - Strongly disagree, 2, 3, 4 - Neither disagree nor agree, 5, 6, 7 - Strongly agree	17a) I am able to influence business practices for the better 17b) I am confident that I am able to prevent irresponsible behavior 17c) I am convinced that I am able to identify investments that will improve impact	Self-efficacy	Mean=4.18 SD=0.94	0.788
18.In this section, you will be asked about people around you who are "struggling" with their lives.	1 - Strongly disagree, 2, 3, 4 - Neither disagree nor agree, 5, 6, 7 - Strongly agree	18a) When seeing people around me struggle, I try to put myself in their shoes 18b) Seeing people around me struggle triggers an emotional response in me 18c) I do not experience much emotion when seeing people around me struggle (Reversed) 18d) I find it difficult to feel compassion for people who struggle with keeping up (Reversed) 18e) It is an ethical responsibility to help people less fortunate than ourselves 18f) We are morally obliged to help those who struggle 18g) Social justice requires that we help those who are less fortunate	Empathy	Mean=5.97 SD=0.8	0.751

5.3 Results

The objective of the research was to find out which information in an impact fund, investors pay the most attention to. Therefore, an eye-tracking experiment was conducted to track investors' nonconscious and unbiased attention. It further seeks to investigate if personal characteristics influence attention allocation.

This section will present the results of the research. First, the socio-demographic characteristics of all participants in the survey will be presented. Second, using descriptive statistics, the eye-tracking data will be summarized. Additionally, inferential statistics using t-Tests, ANOVA, regression, and correlation were conducted for hypotheses testing.

As described previously, the aim was to recruit 24 participants. However, due to the exponential development of the COVID-19 outbreak, the experiment prematurely ended. The total valid number of participants for the survey was 12 (see Table 5.4). Out of the total respondents, there were eight males and four females. The gender distribution of participants is representative of the gender distribution in the financial markets in Denmark (Hedelund, 2019). Data from one participant was excluded due to technical issues and is therefore not included in the count mentioned above. Furthermore, there were five more experiments scheduled that were canceled due to the COVID-19.

Table 5.4. Socio-Demographic Characteristics of Participants

Socio-Demographic Characteristics		Gender					
		Male		Female		Total	
		%	Count	%	Count	%	Count
Gender	Male	67%	8			67%	8
	Female			33%	4	33%	4
	Total	67%	8	33%	4	100%	12
Age	23	13%	1	25%	1	17%	2
	25	25%	2	50%	2	33%	4
	27	13%	1	25%	1	17%	2
	28	13%	1	0%	0	8%	1
	29	13%	1	0%	0	8%	1
	31	13%	1	0%	0	8%	1
	33	13%	1	0%	0	8%	1
	Total	100%	8	100%	4	100%	12
Annual Income	upto 199,000 kr	38%	3	50%	2	42%	5
	200,000+	13%	1	50%	2	25%	3
	400,000+	38%	3	0%	0	25%	3
	600,000+	13%	1	0%	0	8%	1
	Total	100%	8	100%	4		12
Industry sector worked in	Business, financial, banking & insurance	50%	4	75%	3	58%	7
	Education, research & training	13%	1	0%	0	8%	1
	Tourism & hospitality	13%	1	0%	0	8%	1
	Other	25%	2	25%	1	25%	3
	Total	100%	8	100%	4		12
Investing Experience	0-1 years	25%	2	0%	0	17%	2
	1-3 years	13%	1	50%	2	25%	3
	5-10 years	50%	4	25%	1	42%	5
	No prior experience	13%	1	25%	1	17%	2
	Total	100%	8	100%	4	100%	12

The majority (67%) of the participants lie between the ages of 25 and 29, the average age being 27. Both age groups, 20-24 and 30-34, represented 17% of the age distribution, respectively. There were no participants below the age of 20, which was realistic as younger people investing is rather uncommon (Talpsepp, 2010). The participants of the five canceled experiments mentioned above were expected to be in the age group of 50-65.

The participants were asked about their annual income. Five (42%) of the participants' income was up to 199,999 Danish kr. On the other hand, six (50%) of the participants' income ranged between 200,000 and 600,000. Only 1 (8%) of the participants had an

income above 600,000+. The five potential participants were expected to be grouped in the "600,000+" category.

Participants were also asked about the sector they worked in. The majority of participants (58%) worked in the group "Business, financial, banking & insurance", "Education, research & training" and "Tourism & hospitality" each had one participant (8%), whereas 3 participants (25%) worked in "Other" industries.

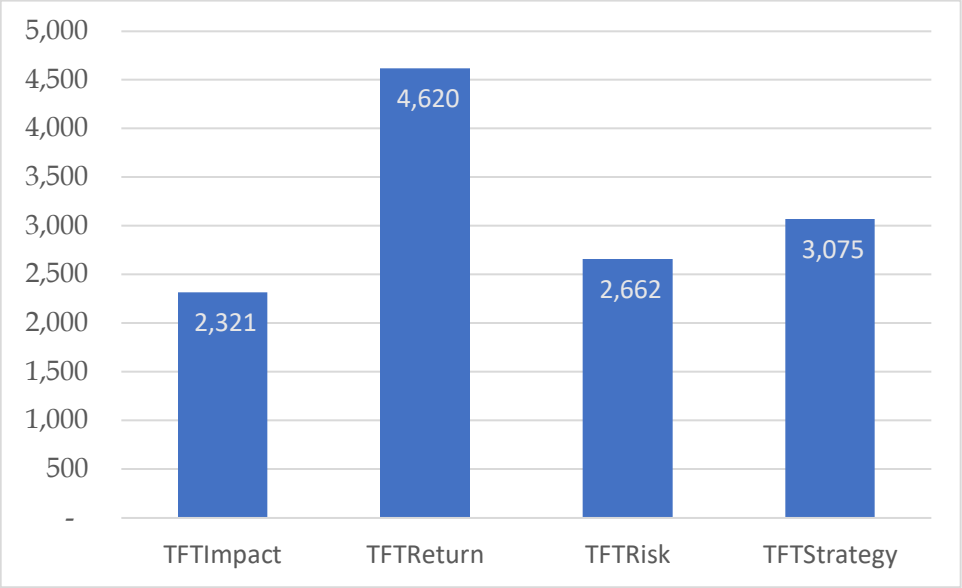
Regarding the financial products invested by the participants, 8% had investment experience in bonds, funds, private equity, shares (public equity). Similarly, 8% had experience in bonds, funds, shares (public equity). 17% had invested in funds, whereas 8% had invested in funds and private equity. 17% had invested in funds, shares (public equity), 8% in private equity, and 17% in shares (public equity). Out of the 12 participants, only 2 had no prior investment experience but were in the phase of investigating their investment opportunities.

When asked whether previous investments were made with ethical investment considerations, only four participants answered that investments were motivated by ethical investing, Environmental, Social, and Corporate Governance (ESG) investing, and impact fund considerations.

5.3.1 Descriptive statistics

The previously mentioned dependent variables were used to investigate the attention allocation of the participants. The TFT was compared for all the AOIs (see Figure 5.1). The TFT for AOI financial return was observed to be the highest (TFT=4,620 ± 1,756 ms) followed by investment strategy (TFT=3,075 ± 939 ms), risk indicator (TFT=2,662 ± 993 ms) and the AOI allocated the least attention was AOI impact (TFT=2,321 ± 1,259 ms).

Figure 5.1. Comparison of the Average TFT (ms) for the 4 AOIs



5.3.2 Hypothesis Testing

Hypotheses were derived from existing theory to answer the research question of this paper. In this section, the previously presented hypotheses will be tested using various statistical tools. Finally, the results and their significance level will be presented.

5.3.2.1 Hypothesis 1

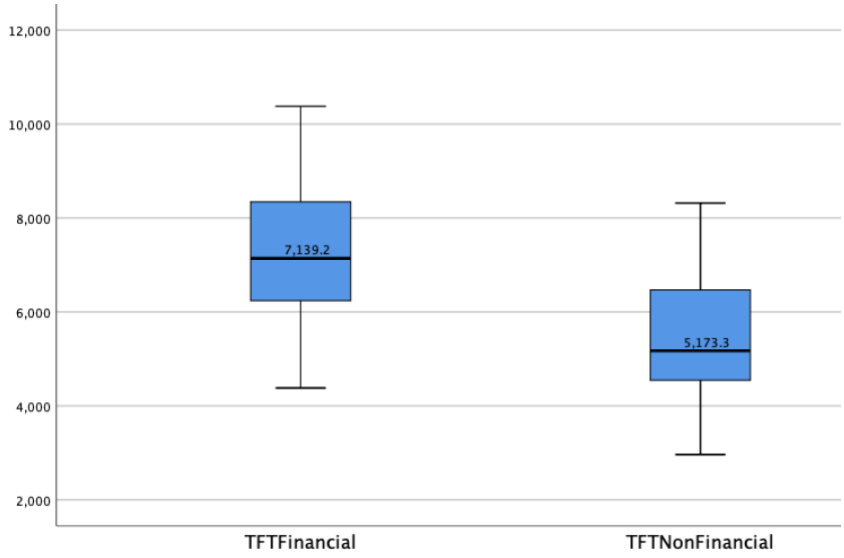
H1 involves investigating whether investors placed greater attention to financial or non-financial AOIs when reading impact fund information. Thus, the independent variables comprise "financial information" and "non-financial information". Inventors' attention in each group will be measured as TFT representing the dependent variable.

A paired samples t-Test was employed to compare the means of the two pairs of independent variables and determine whether there was statistical evidence that they are significantly different. This method was chosen as the comparison of the means are from the same participants. Additionally, as the sample size is relatively small and variances

are unknown, a t-Test was deemed appropriate. The threshold or significance level denoted by α was set at 0.05.

Before running the paired Samples t-Test, descriptive statistics were run and visualized using a boxplot in IBM SPSS to get an insight into whether the variances were equal (see Figure 5.2). The comparative boxplot shows that the mean TFT for financial is higher than non-financial and that there is slightly more spread in TFT financial. The descriptive statistics by group yields the result that the standard deviation in milliseconds for the non-financial group is about 1,474, and for financial, it is about 1,587. A comparative boxplot presented in the graph below quickly reveals that the variances do not appear to be equal since the length of the boxplots are not similar between the two groups. Running a t-Test will offer insights into the significance of the variance.

Figure 5.2 Comparative Boxplot for Mean TFT Financial & Non-Financial (ms)



There are three tables presented in Table 5.5 below: Paired samples statistics, Paired Samples Correlations, and Paired Samples Test. The first table, "Paired Samples Statistics", provides a univariate descriptive statistic for sample size 12, which includes the mean and standard deviation ($TFT_{financial}$ =7,283 ± 1,587 ms), ($TFT_{non\text{-}financial}$=5,396 ±

1,474 ms). The bivariate correlation coefficient observed in the second table "Paired Sample Correlations" indicates that fixation time between financial and non-financial AOIs are significantly negatively correlated -0.952. The final table, "Paired Sample Test", presents the hypothesis test results. The output reveals that the associated p-value =0.054 (t_{11}=2.161) is greater than the chosen significance level = 0.05. Therefore, **the hypothesis cannot be confirmed,** i.e., we did not find sufficient evidence that the participants allocate more attention to financial information.

Table 5.5. Paired Samples t-Test n=12

Paired Samples Statistics

	Mean	N	Std. Deviation
TFTFinancial	7,283	12	1,587
TFTNonFinancial	5,396	12	1,474

Paired Samples Correlations

	N	Correlation	Sig.
TFTFinancial & TFTNonFinancial	12	-0.952	0.000

Paired Samples Test

	Mean	Std. Deviation	t	df	Sig. (2-tailed)
TFTFinancial - TFTNonFinancial	1,887	3,025	2.161	11	0.054

Testing for differences between the pairs $TFT_{financial}$ and $TFT_{non\text{-}financial}$ (ms)

It is not surprising to see that the p-value is approaching statistical significance. The small sample size can be an explanatory factor. Therefore, to supplement the Paired t-Test (n=12), another Paired t-Test was run with the variables $TFT_{non\text{-}financial}$ and $TFT_{financial}$. Here the sample size is represented by a higher number 72 (12 participants × 6 impact funds).

The below Table 5.6 displays the Paired samples statistics, Paired Samples Correlations, and Paired Samples Test. As predicted, due to the larger sample size, the test results

revealed that the associated p-value = 0.001 is less than the chosen significance level α = 0.05. Therefore, the **hypothesis can be confirmed**, and it can be inferred with a 95% confidence level that the mean fixation time (ms) in financial and non-financial AOIs are significantly different (t_{71}=3.551, p=0.001). Based on the results, it can be further concluded that, on average, the participants attended 1,887 ms more on financial than non-financial AOIs.

Table 5.6. Paired Samples t-Test n=72

Paired Samples Statistics

	Mean	N	Std. Deviation
TFTFinancial	7,283	72	2,327
TFTNonFinancial	5,396	72	2,225

Paired Samples Correlations

	N	Correlation	Sig.
TFTFinancial & TFTNonFinancial	72	-0.962	0.000

Paired Samples Test

	Mean	Std. Deviation	t	df	Sig. (2-tailed)
TFTFinancial - TFTNonFinancial	1,887	4,510	3.551	71	0.000

Testing for differences between the pairs $TFT_{financial}$ and $TFT_{non\text{-}financial}$ (ms)

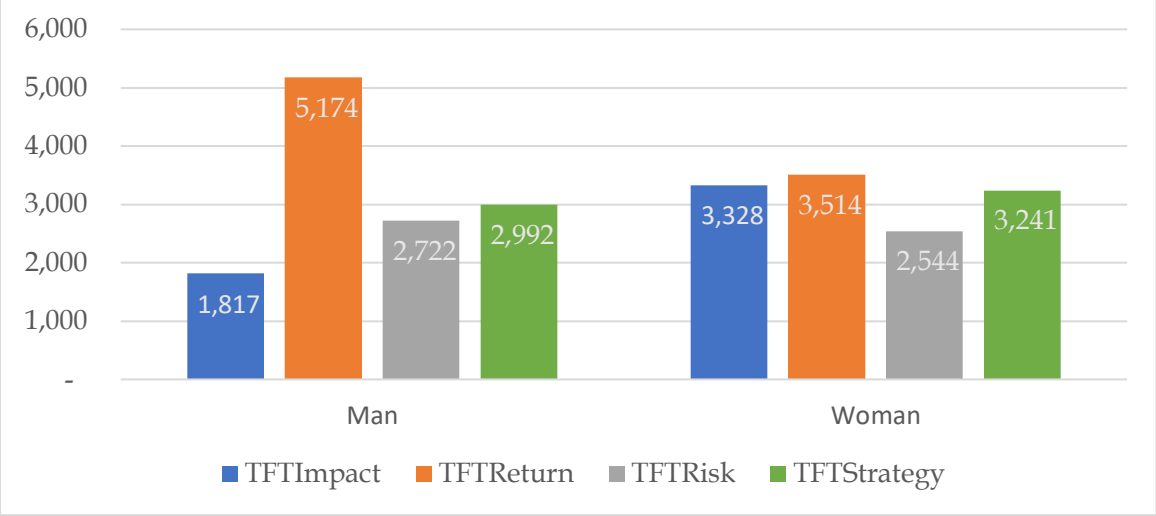
To summarize, the steps undertaken to investigate hypothesis 1 involved descriptive statistics to visualize the variance between TFT financial and non-financial, followed by a Paired samples t-Test, with a sample size of 12 representing the number of participants. The p-value = 0.054 was observed to be approaching statistical significance when tested with a sample size 12. To perform a rigorous analysis, an additional Paired samples t-Test was performed with a sample size 72 representing the number of observations to financial and non-financial AOIs. The aim was to uncover if the test would show a statistical significance when running with a higher sample size. Indeed, when the sample size was larger, the result of the t-Test was statistically significant. Thus, when drawing

conclusions about statistical significance, the small sample size effects should be considered.

5.3.2.2 Hypothesis 2

The test of H2 involves determining whether women take a more comprehensive approach in processing information than men when making decisions. A comprehensive approach refers to evaluating all available information instead of relying on cues for decision making. The dependent variables for testing the hypothesis will be TFT of the four AOIs impact, risk indicator, financial return, and investment strategy. A descriptive statistic was run and visualized in IBM SPSS to compare the means and standard deviation of TFT for each AOI by gender. From the comparative bar chart (see Figure 5.3) and comparison of mean and standard deviation below (see Table 5.7), the largest difference in attention is observed in AOI impact (Man TFT_{impact} = 1,817 ± 1,214; Woman TFT_{impact} 3,328 ± 587 ms), and AOI return (Man TFT_{return} = 5,174 ± 1,772; Woman TFT_{return} 3,514 ± 1,236 ms). The comparison of mean was followed up by a t-Test to determine whether the difference is statistically significant.

Figure 5.3 Distribution of Attention by Gender



Comparative bar chart between genders for TFT (ms) for all AOIs

Table 5.7. Descriptive Statistics of TFT per AOI

		TFTReturn	TFTRisk	TFTStrategy	TFTImpact
Man	Mean	5,174	2,722	2,992	1,817
	Count	8	8	8	8
	Standard Deviation	1,772	840	828	1,214
Woman	Mean	3,514	2,544	3,241	3,328
	Count	4	4	4	4
	Standard Deviation	1,236	1,393	1,256	587
Total	Mean	4,620	2,662	3,075	2,321
	Count	12	12	12	12
	Standard Deviation	1,756	993	939	1,259

Comparison of the mean and standard deviation of TFT (ms) for each AOI sorted by gender

In the below Table 5.8, the t-Test for Equality of Means for "Equal variances not assumed" provide evidence that the associated p-value 0.016 is less than the chosen significance level α =0.05 for TFT_{impact} between genders. Therefore, the results confirm at a 95% confidence level that the TFT_{impact} between genders is different at a statistically significant level ($t_{9.98}$=-2.908, p=0.016). It can, therefore, be concluded that the females in the study distributed 1,511 ms more attention to impact, compared to males. On the other hand, the associated p-value 0.094 for TFT_{return} is greater than the chosen significance level $\alpha = 0.05$. This indicates that the attention allocation to financial return is not significantly different between male and female participants in the study ($t_{8.49}$=1.886, p=0.094).

Table 5.8. Gender Differences: Independent Samples Test

Gender		N	Mean	Std. Deviation
TFTImpact	Man	8	1,817	1,214
	Woman	4	3,328	587
TFTReturn	Man	8	5,174	1,772
	Woman	4	3,514	1,236

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
TFTImpact	Equal	5.811	0.037	-2.317	10	0.043	-1511
	Equal			-2.908	9.98	0.016	-1511
TFTReturn	Equal	0.585	0.462	1.663	10	0.127	1660
	Equal			1.886	8.49	0.094	1660

Test for differences in TFT_{impact} and $TFT_{financial\ return}$ (ms) between gender

To summarize, the TFT for all AOIs was compared and visualized using a comparative bar chart, which indicated that females indeed distributed their attention more equally than males. Although the findings cannot be tested for a statistical significance, they **support the hypothesis**. The Independent Samples t-Test, between the gender for AOIs impact and return, revealed that the differences in attention allocation between the genders are statistically significant for the AOI impact but not for return.

Hypothesis 3 and 4

To investigate hypothesis 3 and 4, a test for correlation will be performed to produce a sample correlation coefficient. A correlation test was found appropriate as two pairs of variables were known, and in order to test the hypothesis, knowledge about their linear relationship was needed. Before running the test, a scatterplot with a fit line and descriptive statistics was visualized. The scatterplot visualizes the direction and correlation between two variables. In the interpretation of the Pearson's correlation, both the strength and direction of the correlation is accounted for. When accounting for the

strength of the correlation 0 < 0.3 is interpreted as none to weak correlation, 0.3 < 0.5 as weak, 0.5 < 0.7 as moderate and finally 0.7 < 1 as a strong correlation (Rumsey, 2020).

5.3.2.3 Hypothesis 3

The third hypothesis investigates whether broad attitudes and personality traits can be used to predict how much attention investors allocate to impact information. Hypothesis 3 is divided into four different sub-hypotheses that each test how one independent variable correlates with attention allocated to impact. A combination of eye-tracking and survey data have been used to investigate whether this claim holds. From the eye-tracking data, the dependent variable TFT_{impact} was compared to the independent variables "attitude towards unethical business", "social norm - non-financial", "self-efficacy", and "empathy".

The first sub-hypothesis states that the more the participant tolerates unethical business, the less they will be concerned about impact information, i.e., there is a negative correlation between "attitude towards unethical business" and TFT_{impact}. The Pearson's correlation supports the above statement. The results show a moderate negative correlation of -0.647 between TFT_{impact} and the "attitude towards unethical business". We can further state that the negative correlation is statistically significant since the p-value=0.023 is less than the chosen significance level of 0.05. Therefore, the **sub-hypothesis can be confirmed**.

The second sub-hypothesis, 3b, suggest that "social norm - non-financial" can predict the attention allocated to impact information. More specifically, the more a participant perceive prosocial behavior to be the social norm, the more attention they will allocate to impact information, TFT_{impact}. The proposal of a positive correlation cannot be supported using a correlation test, as it yields a negative Pearson's correlation. The result exhibits none to weak correlation of -0.194. Since the p-value 0.546 is higher than the chosen significance level of 0.05, we **cannot confirm the sub-hypothesis**, i.e., participants with a higher score on social norms do not fixate longer on impact information.

The hypothesis on self-efficacy, 3c, claims that "self-efficacy", confidence that one can achieve a goal, correlates positively with how much emphasis investors put on impact information, TFT_{impact}. The correlation test shows a positive Pearson's correlation of 0.635. This indicates a moderate correlation in a direction that aligns with the theory. Since the p-value=0.027 is lower than the threshold $\alpha = 0.05$, we can **confirm the sub-hypothesis.** Therefore, we can conclude with 95% confidence that there is a positive correlation between the participants' self-efficacy and attention allocation to impact information.

The last sub-hypothesis that aims to investigate predictors of behavior, 3d, claims that the more empathy the investor has, the more attention they will distribute to impact information, TFT_{impact}. A strong positive correlation is anticipated based on the hypothesis. Conducting a correlation analysis shows a strong positive Pearson's correlation of 0.815 at a significance level of 0.001, which reveals empathy to be a strong predictor of how participants allocate attention to impact information. As empathy and TFT_{impact} have a statistically significant relationship, we **confirm the sub-hypothesis**.

To wrap up, three of the sub-hypotheses a, c, and d indicate that there is a correlation between "broad attitudes and personality traits" and TFT_{impact} (see Table 5.9). While there are differences in the strength of the correlation, they all indicate a moderate to strong relationship. The direction of the relationship is both positive and negative, depending on the predictor tested. For the sub-hypotheses a, b, and d, the correlation was found to be statistically significant. This shows a moderate to strong correlation between fixation time in the AOI impact and the three predictors "attitude towards unethical behavior", "empathy", and "self-efficacy".

Table 5.9. Statistical Significance and Correlation between "Broad Attitudes and Personality Traits" and TFT_{impact} (ms)

	Attitude Towards Unethical Business	Social Norm - Non-Financial	Self-Efficacy	Empathy
Pearson Correlation	-0.647	-0.194	0.635	0.898
Sig. (2-tailed)	0.023	0.546	0.027	0.000

Correlation test of variables, "attitude towards unethical business", "self-efficacy, "social norms – non-financial", and "empathy" with TFT_{impact} (ms)

The Pearson's correlation indicates whether the individual "broad attitudes and personality traits" correlate with TFT_{impact}. What is interesting to investigate is whether the four combined can form a formula that can predict TFT_{impact}. In order to study the intercorrelation of the four variables as a predictor, a multiple regression analysis was applied. The reasoning for using a multiple regression is that it allows the investigation of the relationship between two or more independent variables. Like the Pearson's correlation, it also provides the direction of the relationship between the independent and dependent variable, along with the significance for each independent variable (Barrow, 2013).

The four "broad attitudes and personality traits" recognized as the independent variables were tested as predictors for the dependent variable TFT_{impact}. The results for the multiple regression are presented in three different sections: model summary, ANOVA, and coefficients (see Table 5.10). The model summary is a representation of how well the model fits the data, i.e., how much of the total variance in the dependent variable can be explained by the independent variables. In this case, the independent variables significantly explain 93,9% of the variance in TFT_{impact} as projected by the adjusted R square. The ANOVA table assesses the statistical significance of whether the model of independent variables can predict TFT_{impact}. The overall regression model achieves a

significance level of 0.000 ($p<0.001$), which suggests that the model is capable of predicting TFT_{impact} at a statistically significant level when testing at $\alpha=0.05$

The table coefficients present how TFT_{impact} varies with the individual independent variable. Reviewing each independent variable, it shows that "empathy" has an unstandardized coefficient of 1,152, which indicates that for each increase in "empathy", there will be an increase in TFT_{impact} of 1,152 ms. When testing at an $\alpha=0.05$, the coefficient for empathy is statistically significant, obtaining a p-value<0.001.

Interpreting "self-efficacy", it appears to have an unstandardized coefficient of 484, i.e., for an increase in "self-efficacy", the participant will fixate 484 ms longer on impact information (p-value=0.007). The findings for these two variables align with the Pearson's correlation that also showed "empathy" and "self-efficacy", to have a statistically significant effect on TFT_{impact}.

The Pearson's correlation for the variable "attitude towards unethical business" also indicated a statistically significant effect on the TFT_{impact}. However, when tested in a multiple regression, the effect only obtains a p-value=0.376, and the effect is no longer statistically significant. In the multiple regression, the variable "attitude towards unethical business" achieved an unstandardized coefficient of -82. The correlation found here has the same direction as the Pearson's correlation; the more the participants perceive unethical business to be acceptable, the less they look at impact information.

The last variable tested in hypothesis 3 is "social norm - non-financial". The Pearson's correlation did not indicate a statistically significant effect. The unstandardized coefficient of -47 in the multiple regression obtained a p-value of 0.417. Therefore, the variable "social norm - non-financial" was evidenced once again, to have an insignificant effect on TFT_{impact}.

Table 5.10. Output of Multiple Regression

Model Summary

R	R Square	Adjusted R Square
.980[a]	0.961	0.939

a. Predictors: (Constant), Empathy, Social Norm - Non-Financial, Self-Efficacy, Attitude Towards Unethical Business

ANOVA[a]

	Sig.
Regression	.000[b]

a. Dependent Variable: TFTImpact
b. Predictors: (Constant), Empathy, Social Norm - Non-Financial, Self-Efficacy, Attitude Towards Unethical Business

Coefficients[a]

	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	- 6,219	1,171	- 5.312	0.001
Attitude Towards Unethical Business	- 82	87	- 0.946	0.376
Social Norm - Non-Financial	- 47	54	- 0.862	0.417
Self-Efficacy	484	130	3.732	0.007
Empathy	1,152	139	8.311	0.000

a. Dependent Variable: TFTImpact

A multiple regression testing the independent variables: "attitude towards unethical business", "self-efficacy, "social norms – non-financial", and "empathy" against the dependent variable TFT_{impact} (ms)

5.3.2.4 Hypothesis 4

The fourth hypothesis claims that there will be a difference between what the participants report they pay attention to, and actual attention allocated in the experiment, i.e., there is a weak correlation between self-reported emphasis and allocation of attention. Eye-tracking data TFT (ms) for each AOI was compared with the self-reported emphasis from

the survey. In order to do this, four different sub-hypotheses were analyzed, one for each AOI.

The first sub-hypothesis 4a tested for a correlation between self-reported emphasis to return and the eye-tracking data. The Pearson's correlation shows a weak correlation of 0.133 between self-reported and actual attention allocation, which aligns with expectations. Since the p-value=0.681 is higher than the chosen significance level, we **cannot confirm the sub-hypothesis**. Likewise, a correlation test was run for impact. The result yielded a Pearson's correlation of -0.001, again indicating an incongruency between self-reported and actual allocation. Although a lack in correlation was expected, we **cannot confirm the sub-hypothesis** since the significance level of 0.996 is higher than the chosen threshold. A similar pattern repeated for investment strategy and risk indicator though observing a stronger correlation of 0.396 and 0.472, respectively. The computed p-value was 0.202 for strategy and 0.122 for risk. Both the tests **cannot confirm the sub-hypotheses** at a 0.05 significance level.

Overall for the four sub-hypotheses suggest that there is an incongruency between self-reported and actual attention allocation (see Table 5.11). The incongruency cannot be confirmed as the test does not appear to be statistically significant at the chosen $\alpha = 0.05$, and it can be questioned whether this was caused due to a limited data set.

Table 5.11. Correlation between Self-reported Emphasis and Fixation Time for Corresponding AOI

	Return	Impact	Risk	Strategy
Pearson's correlation	0.133	0.001	0.472	0.396
Significance level	0.681	0.996	0.122	0.202

Table 5.12 below summarizes the results of all the hypotheses tested in the study, including the variables used, data collection method, and the chosen statistical tool. It further recaps the results of the hypotheses testing supported by the p-value.

Table 5.12. Summary of Hypotheses, Variables, Statistical Analysis and Test Results

Hypothesis	Sub-Hypothesis	Data	Independent (I) /Dependent (D) variables	Statistical Analysis	(Sub)Hypothesis Confirmed?
H1) Investors fixate longer on the financial (compared to non-financial) information.		Eye-tracking data	Financial, Non-Financial AOI (I) TFTFinancial, TFTnon-financial (D)	1st. Paired samples t-Test 2nd. Paired samples t-Test	No (p-value = 0.054) Yes (p-value = 0.001)
H2) Women fixate more equally on all information compared to men		Eye-tracking & Survey	Gender (I) TFT (D)	Descriptive - all AOI's / Independent samples t-test - Impact & Return	Yes - Impact (p-value=0.016) No - Return (p-value=0.094)
H3) Broad attitudes and personality traits have an influence on the information investors fixate on	H3a: There is a negative correlation between attitude towards unethical business and fixation on impact information	Eye-tracking & Survey	Attitude to unethical behavior (I) TFTimpact (D)	Pearson's Correlation & Multiple Regression	Yes (r=-0.647, p-value=0.023)
	H3b: There is a positive correlation between social norm - non-financial and fixation on impact information	Eye-tracking & Survey	Social norm - non-financial (I) TFTimpact (D)	Pearson's Correlation & Multiple Regression	No (r=-0.194, p-value=0.546)
	H3c: There is a positive correlation between self-efficacy and fixation on impact information	Eye-tracking & Survey	Self-efficacy (I) TFTimpact (D)	Pearson's Correlation & Multiple Regression	Yes (r=0.635, p-value=0.027)
	H3d: There is a positive correlation between empathy and fixation on impact information	Eye-tracking & Survey	Empathy (I) TFTimpact (D)	Pearson's Correlation & Multiple Regression	Yes (r=0.898, p-value < 0.001)
H4) There is a difference between self-reported and actual (eye-tracking) emphasis on information	H4a: There is a weak correlation between self-reported emphasis and fixation time on financial return	Eye-tracking & Survey	EmphasisReturn (I) TFTreturn (D)	Pearson's Correlation	No (r=0.133, p-value=0.681)
	H4b: There is a weak correlation between self-reported emphasis and fixation time on impact	Eye-tracking & Survey	EmphasisImpact (I) TFTimpact (D)	Pearson's Correlation	No (r=-0.001, p-value=0.996)
	H4c: There is a weak correlation between self-reported emphasis and fixation time on risk indicator	Eye-tracking & Survey	EmphasisRisk (I) TFTrisk (D)	Pearson's Correlation	No (r=0.472, p-value=0.122)
	H4d: There is a weak correlation between self-reported emphasis and fixation time on investment strategy	Eye-tracking & Survey	EmphasisStrategy (I) TFTstrategy (D)	Pearson's Correlation	No (r=0.396, p-value=0.202)

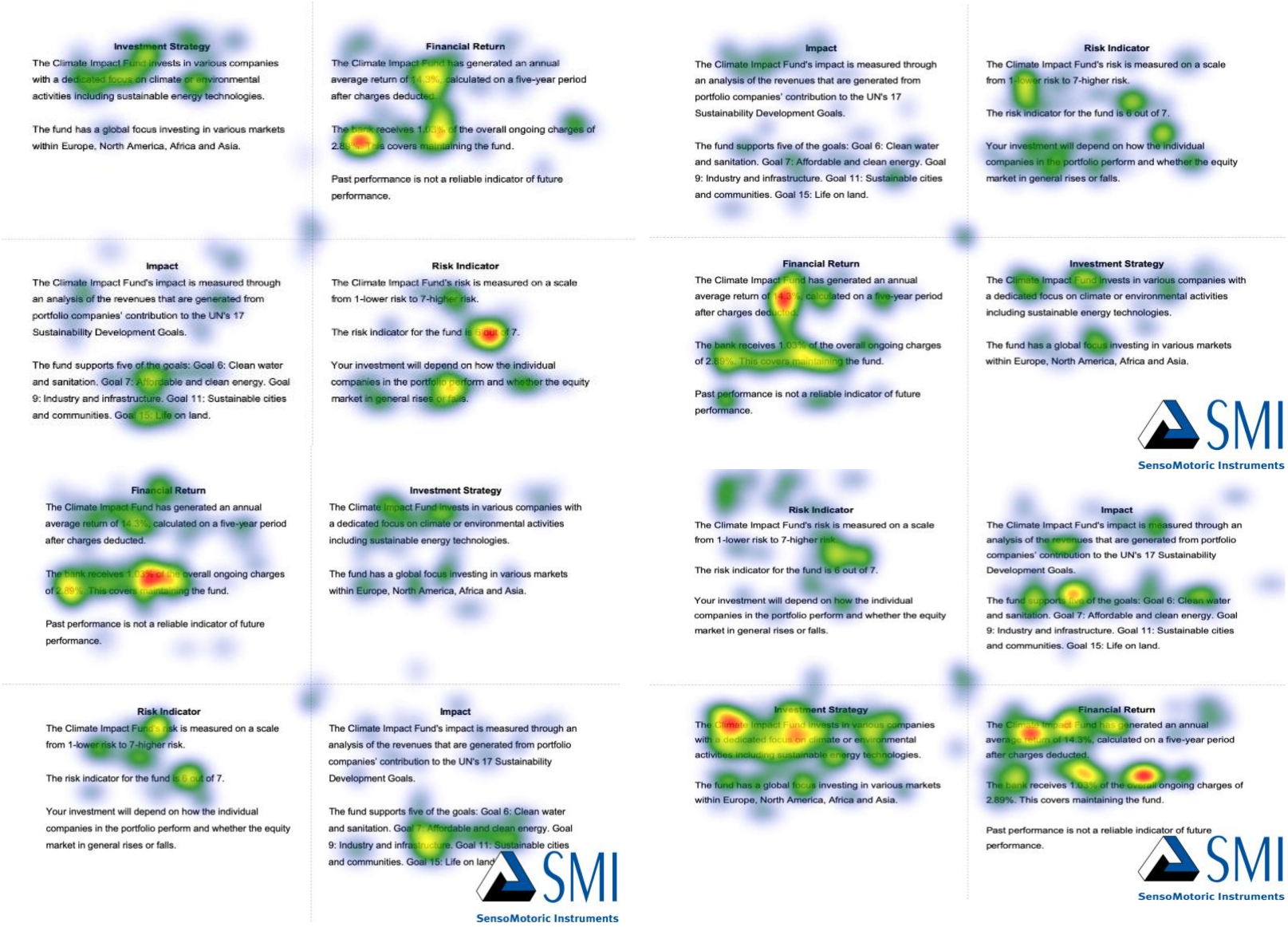
5.4 Heat maps

As mentioned in the theory section, heat maps are one of the most commonly used eye-tracking visualization metrics. Heat maps indicate how visual attention was directed during the experiment by showing gaze points and fixations in a simplified warm-to-cool spectrum. They allow a visual comparison of the eye-tracking results across the groups.

To present the heat maps, the impact fund "Climate Impact Fund", was selected as an example. The below Figure 5.4 shows the heat maps for the four groups, i.e., one heat map for each group. To recap, the participants were divided into four groups to account for orientation bias. A qualitative analysis of the groups will be conducted to show how attention to various AOIs was distributed among the different groups. The heat maps indicate the attention allocation represented by colors with green being low attention while red signaling high attention intensity.

High attention intensity, represented by the color, red, shows that the AOIs financial return and risk indicator received the most attention for all groups. An exception to this was in group 4, where in addition to the AOIs financial return and risk indicator, the AOI investment strategy received a high concentration of attention. Heat maps provide details on the information attended to and ignored by the participants. It allows additional insight into attention that is too detailed to test using statistical tools. The heat maps exhibit that the participants do not read the disclaimer (past performance is not a reliable indicator of future performance) in the AOI financial return. Additionally, the heat map indicates that the participants do not allocate much attention to the geographical information provided in the AOI investment strategy. Instead, the purpose of the fund is processed.

Figure 5.4 Visualization of Heat Maps



Heat maps of stimulus, "Climate Impact Fund" for Group 1 (top left), 2 (top right), 3 (bottom left), and 4 (bottom right) extracted from BeGaze

6 Discussion

This chapter will discuss the findings from the hypotheses testing and interpretation of the heat maps. Next, the limitations will be presented, followed by a discussion of its implications and how it affects the generalizability of the paper. Subsequently, future research will be proposed, followed by the paper's managerial and theoretical contributions.

6.1 Discussion of findings

This section will discuss and interpret the findings from the hypotheses testing and heat maps. The discussion of each hypothesis will start by stating what was being tested, followed by test results. Connections will be drawn to previous literature to seek support for making suggestions on how investors allocate their attention. Furthermore, to gain a holistic insight, the findings were revisited to motivate a discussion of how they interrelate.

6.1.1 Hypothesis 1

The first hypothesis investigated how the participants distributed their attention to financial and non-financial information. Neoclassical economics form the basis for the first hypothesis, which claims that investors are fully rational and process all available information. Being fully rational and considering all available information implies that investors will base their final decision after an assessment of the risk-return relationship (Friedman & Savage, 1948). Assessing the risk-return relationship relates to the aggregated AOI financial information.

When tested using a Paired Samples t-Test, the average total fixation time and standard deviation on financial information ($TFT_{financial}$=7,283 ± 1,587 ms) exceeded total fixation time on non-financial information ($TFT_{non\text{-}financial}$=5,396 ± 1,474 ms) and achieved a significance level of 0.054. However, since the result was approaching statistical

significance with sample size=12, a supplementary Paired Samples t-Test was run to reconfirm the results with a sample size=72. After running the supplementary test, the results yielded a significance level of 0.001. This suggests an explanation for the first t-Test not being statistically significant was due to the small sample size. The outcome corresponds to what previous literature has suggested. As suggested in academia, the findings of the hypothesis provide practical support, indicating that investors allocate more attention to financial information than non-financial information when reading an impact fund.

A further investigation of the research concerns prediction of investment behavior. Previous literature has found gender to be a powerful predictor of investment behavior (Meyers-Levy & Maheswaren, 1991). Therefore, attention was investigated for gender differences. A descriptive analysis of mean and standard deviation shows that men attend more to financial information (men: $TFT_{financial}$=7,895 ± 1,418 ms, women: $TFT_{financial}$=6,058 ± 1,242 ms) whereas women attend more to non-financial information (men: $TFT_{non\text{-}financial}$=4,809 ± 1,200, women: $TFT_{non\text{-}financial}$=6,569 ± 1,363 ms). The insight on gender attention allocation differences will be discussed later in relation to how "broad attitudes and personality traits" predict investment behavior.

The sample distribution consisted of 67% men, which suggests that the gender distribution of the participants has skewed the findings. As men attend more to financial information, the results from the study reflect more attention to financial information. The attention allocation from the study could have revealed a different picture if there was an even split of gender ratio. Including more female participants might have decreased the mean $TFT_{financial}$ and increased the mean $TFT_{non\text{-}financial}$. However, the gender distribution in the study (33% females) is reflective of the population of Danish investors, with the ratio for Danish investors being approximately 30% females (Hedelund, 2019).

6.1.2 Hypothesis 2

The second hypothesis tested whether women are more thorough information navigators than men. Contrary to the homogenous information processing assumed by neoclassical economics, the selectivity-model has highlighted gender differences in information processing (Friedman & Savage, 1948). More specifically, women engage in a more comprehensive, and effortful processing of information compared to men, who rely more on selected cues (J. F. Graham et al., 2002; Meyers-Levy & Maheswaren, 1991).

The findings from the descriptive statistics revealed that women distribute attention more equally to all AOIs compared to men (Figure 5.3). The results are in line with literature based on the gender difference in information processing (Chung & Monroe, 1998; Darley & Smith, 1995; J. F. Graham et al., 2002). The AOIs investment strategy and risk indicator received similar attention from both genders. However, the distribution of attention shows a noticeable difference between AOIs financial return and impact among men ($TFT_{financial\ return}$=5,174, TFT_{impact}=1,817 ms). On the other hand, AOI return is only marginally higher than AOI impact among women ($TFT_{financial\ return}$=3,514, TFT_{impact}=3,328 ms). The result from the t-Test showed that gender had a statistically significant influence on attention to the AOI impact, but not for AOI financial return.

Differences in genders' information processing strategies seem likely to account for these findings. When processing information, men deploy a hypothesis-confirming strategy that serves as a foundation for decision making, i.e., considering cues to confirm rather than disconfirm the hypothesis. Women, on the other hand, apply a more comprehensive approach placing importance on both confirming and disconfirming information (Chung & Monroe, 1998). The different processing strategies causes them to rely on two different attention allocation styles. The findings from the hypothesis testing confirm the different information processing strategies as proposed in the literature. It can, therefore, be suggested that female investors will seek to distribute their attention more equally to all the information compared to male investors.

As suggested in hypothesis 1 and by the neoclassical perspective, risk and return considerations are the primary factors when weighing investment opportunities in financial decision making, which makes financial return an important salient. Financial return being an essential cue, could be the reason why it was predominantly attended to by men. Since the exposure of the stimuli was for 15 seconds, men focusing more on return resulted in a trade-off, and subsequently, the AOI impact received less attention. This suggests that men use heuristics to satisfice when faced with an information overload caused by time constraints. Women, on the other hand, under the same conditions as men, attended to all AOIs more equally.

Finally, support for hypothesis 2, can be observed through further analysis of the TFT for the experimental groups. The gender differences can be observed in the groups due to the uneven distribution of female participants (see Table 6.1). Horizontally observed across the groups, the TFT_{impact} was the highest in group 2, where females outweighed males. Conversely, the $TFT_{financial\ return}$ was highest in group 3, which consisted of all male participants (see highlighted numbers in Table 6.1).

Observing vertically between the groups, group 2 appears to distribute their attention most equally between the AOIs. On the other hand, group 3 seems to have the most unequal attention distribution (see borders in Table 6.1). The interpretations further support hypothesis 2, stating the different processing strategies between genders.

Table 6.1. Distribution of TFT between the Experimental Groups

	Group 1 (Males 2, Females 1)	Group 2 (Males 1, Females 2)	Group 3 (Males 3, Females 0)	Group 4 (Males 2, Females 1)
TFTimpact	2,430	3,270	1,896	1,686
TFTreturn	4,754	3,282	6,228	4,218
TFTrisk	2,713	3,311	2,284	2,342
TFTstrategy	3,125	2,732	2,472	3,970

Illustration showing the groups (including male to female distribution) and TFT (ms) for each AOI

6.1.3 Hypothesis 3

Hypothesis 3 tests whether variables, "broad attitudes and personality traits", can be used to predict attention allocation to the AOI impact.

Sub-hypothesis 3a

The first sub-hypothesis 3a, investigated if a negative correlation between "attitude towards unethical business" and TFT_{impact} was present. As accounted for earlier in the paper, low tolerance of unethical behavior will cause individuals to be less likely to find themselves engaging in unethical behavior (Chen & Tang, 2006). The independent variable "attitude towards unethical business" obtained a negative correlation to TFT_{impact} of -0.647 at a 0.023 significance level. When comparing this to the existing theories, the findings appear to be congruent. In a practical setting, this may suggest that investors who are more tolerant towards unethical business will allocate less attention to impact information when processing impact fund information.

Drawing similarities to the above findings, allocating less attention to impact information can be interpreted as showing less concern towards unethical business. The impact information might hold insight into the ethical orientation of the investment. If investors are unconcerned with unethical business, impact information will be of less relevance and, therefore, receive less attention.

Returning to the discussion of the gender distribution of the participants, findings from Chen & Tang (2006) is worth considering. They found that men in their study were more tolerant of unethical behavior, and the same holds for the participants in this study (men: mean=2.96; women mean=1.25). Referring back to the gender differences to TFT_{impact} found in the discussion of hypothesis 1, this raises the question of whether TFT_{impact} is driven by gender or "attitude towards unethical business".

Sub-hypothesis 3b

The second sub-hypothesis 3b tested for a positive correlation between "social norm - non-financial" and TFT_{impact}. The TPB and NAM state that people seek to behave within the perceived social norm (Ajzen, 1991; De Groot & Steg, 2009). Therefore, social norms have an influence on their behavioral intentions. As the TPB closely link intention to behavior, social norms will indirectly affect actual behavior (Ajzen, 1991).

Sub-hypothesis 3b did not achieve statistical significance. Besides the correlation not being statistically significant, it also contradicted proposals made in the reviewed literature. The findings instead revealed a negative correlation of -0.194, which showed that the higher they measured for "social norm - non-financial", the less attention the participants allocated to impact information. As the test only achieved a significance level of 0.546 and presented an unexpected negative relationship, caution has been taken not to make generalizations.

Due to the conflicting result and to seek an explanation for the discrepancy, existing literature was revisited. As mentioned in the paper, a possible explanation for the low degree of prediction is the complexity that ethical issues add to consumer decision-making (Shaw et al., 2000). The conclusion from Shaw et al. (2000) is that though antecedents can be proved correct in one setting, it may not be applicable in another. An impact investment introduces ethical issues because it can seem like an "ethically correct" investment, which may imply that other investments are less ethically correct. Therefore, without generalizing, this sub-hypothesis underlines the issue of complexity in ethical considerations.

Sub-hypothesis 3c

The test of H3c involved finding whether a correlation between "self-efficacy" and TFT_{impact} existed. Drawing on the TPB, self-efficacy determines the degree to which individuals believe they can accomplish a task (Ajzen, 1991). Previous literature has found high self-efficacy among conscious consumers (Lin & Hsu, 2015; Pohjolainen et al., 2016).

H3c showed a statistically significant (p=0.027) correlation with TFT_{impact} and "self-efficacy". The findings show that higher self-efficacy was accompanied by participants attending more to impact information. The result of the sub-hypothesis matches the findings from previous studies. Therefore, it can be suggested that the self-efficacy of investors positively influences attention to impact information.

An underlying reason for the observed correlation may be that investors with a high "self-efficacy" believe they can use their investment as a vote for better practices, similar to consumers voting with their consumption of ordinary goods (Lin & Hsu, 2015; Shaw et al., 2006). In the setting of investment products, an impact investment fund offers an opportunity for green consumption, compared to traditional investment. The present research indicates a correlation between investors' self-efficacy and "green consumption" of impact investment funds. This could shed light on why investors with high self-efficacy show interest in impact information.

Here the same reasoning on gender differences of "attitude towards unethical business" can be discussed concerning self-efficacy. A descriptive analysis indicates that the females in this study showed higher self-efficacy (mean=4.69) compared to the male participants (mean=3.93). As women fixate longer on impact information than men, it raises the issue of whether self-efficacy or gender attribute to attention allocation.

Sub-hypothesis 3d

To wrap up, the last sub-hypothesis to investigate a correlation between "broad attitudes and personality traits" and attention allocation to impact information was conducted. Here the correlation between "empathy" and TFT_{impact} was tested. As tested earlier, "attitude towards unethical business" can, as suggested by the TPB, be used as a predictor of behavioral intention. Similarly, Mair and Noboa (2006) propose that when investigating prosocial behavior, "empathy" serves as a proxy for "attitude towards unethical behavior".

The findings revealed "empathy" to be statistically significant ($p<0.001$), and the antecedent to have the strongest correlation (0.898) to TFT_{impact}. The outcome aligns with the findings from the previous studies proposing that empathy affects people's behavior and attitude towards prosocial behavior (Eisenberg & Miller, 1987; Mair & Noboa, 2006). Our findings highlight empathy to be a strong indicator of how investors allocate attention to impact information when reading an impact fund.

It also supports the proposals made in a study concerning how empathy can have implications on pro-environmental behaviors (Berenguer, 2007). For a fund holding an impact element, the speculation is that investors allocating more attention to impact (having higher empathy) will be more likely to allocate their resources accordingly. The argument aligns with Berenguer (2007), who found a correlation between high empathy and likelihood to donate to a pro-environmental organization.

Furthermore, referring back to H2, a statistically significant result was found relating to TFT_{impact} between the genders. Female participants were observed to attend more to impact information. Additionally, descriptive analysis shows that, on average, the female participants in this study score higher on empathy (women=6.58; men=5.67). The findings align with the results from Hockerts (2017), who also found with statistical significance that females score higher on empathy. The outcome is congruent with the results from hypothesis 3d; high empathy elicits longer TFT_{impact}. Similar to sub-hypothesis 3a and c, the question can be raised to whether empathy or gender drives attention allocation.

To recap, four "broad attitudes and personality traits" were tested to seek correlation with attention allocated to impact information. The results suggest at a statistically significant level that three antecedents, "attitude towards unethical business", "self-efficacy", and "empathy" individually influence investors' attentional behavior to impact. The TPB suggests antecedents to predict behavior. As the antecedents in our study were found to influence attention, it can be argued that they have predicting abilities. On the other hand,

predictions cannot be drawn for "social norms – non-financial", as indicated by the results above.

To draw connections, the above findings have motivated revisiting hypothesis 2, which found gender differences in attention allocated to impact, more specifically, that women attended more to impact information. Additionally, it is now known that the three antecedents, "attitude towards unethical business", "self-efficacy", and "empathy" also influence attention to impact information. Even though we found a statistically significant result that females attended more to impact information, when drawing conclusions, it should be considered whether to attribute the attention to impact to gender differences or "broad attitudes and personality traits". It motivates a discussion of the possibility that the gender differences are driven by certain antecedents being associated with gender, e.g., empathy being higher for females.

A multiple regression was run to determine the simultaneous effect of the three antecedents mentioned above. Empathy and self-efficacy retained their explanatory effects as they achieved a significance level of <0.001 and 0.009, respectively. Conversely, results from "attitude towards unethical business" and "gender" were statistically nonsignificant. From these results, it might be suggested that it is indeed antecedents associated with gender that drives the difference in attention allocation, rather than gender itself (See Table 6.2).

Table 6.2. Output of Multiple Regression

Model Summary

R	R Square	Adjusted R Square
.979[a]	0.958	0.934

a. Predictors: (Constant), Gender, Self-Efficacy, Empathy, Attitude Towards Unethical Business

ANOVA[a]

	Sig.
Regression	.000[b]

a. Dependent Variable: TFTImpact

b. Predictors: (Constant), Gender, Self-Efficacy, Empathy, Attitude Towards Unethical Business

Coefficients[a]

	Unstandardized B	Std. Error	t	Sig.
(Constant)	-6592	1129	-5.841	0.001
Attitude Towards Unethical Business	-85	94	-0.899	0.399
Self-Efficacy	478	135	3.549	0.009
Empathy	1216	151	8.055	0.000
Gender	-110	265	-0.416	0.690

A multiple regression testing the independent variables: "attitude towards unethical business", "self-efficacy, "empathy", and "gender" against the dependent variable TFT_{impact} (ms)

Multiple regression

The multiple regression with four antecedents that was run in the data analysis showed that "social norm - non-financial" (p=0.376) and "attitude towards unethical business"

(p=0.417) were not statistically significant. The result from "social norm - non-financial" was as expected since the correlation test did not show statistical significance either. On the other hand, "attitude towards unethical business" yielded a different p-value than expected.

To further investigate the incongruency, a correlation test between the four variables were employed. The test revealed a Pearson's correlation of -0.635 between "self-efficacy" and "attitude towards unethical business" at a 0.027 significance level. The outcome indicates that investors who believe they can change unethical practices for the better (high self-efficacy) have lesser tolerance to accept unethical business practices (low attitude towards unethical business). It could be the case that the strong correlation between the two variables has introduced multicollinearity in the multiple regression model. This might be the reason why the model has ruled out the explanatory factor of "attitude towards unethical business".

Furthermore, the unexpected insignificant result for "attitude towards unethical business" might be explained by being run together with its proxy "empathy". As suggested by Mair and Noboa (2006), when predicting prosocial behavior, empathy works as a stronger predictor than "attitude towards behavior". As "empathy" was statistically significant in the multiple regression, it indicates that the proposal by Mair and Noboa (2006) is applicable in the setting of impact investment.

6.1.4 Hypothesis 4

The fourth hypothesis tested whether observed attention allocation through eye-tracking data was congruent with self-reported survey results. The incongruency was predicted based on the limitations of traditional research methods and the solutions proposed by neuroscientific research methods. Neuroscientific researchers propose that the response bias, which may occur when using traditional research methods, could result in distorted findings (Ceravolo, Farina, et al., 2019; Genco et al., 2013). Conversely, eye-tracking records nonconscious processes that capture cognitive processing. Thus the implicit

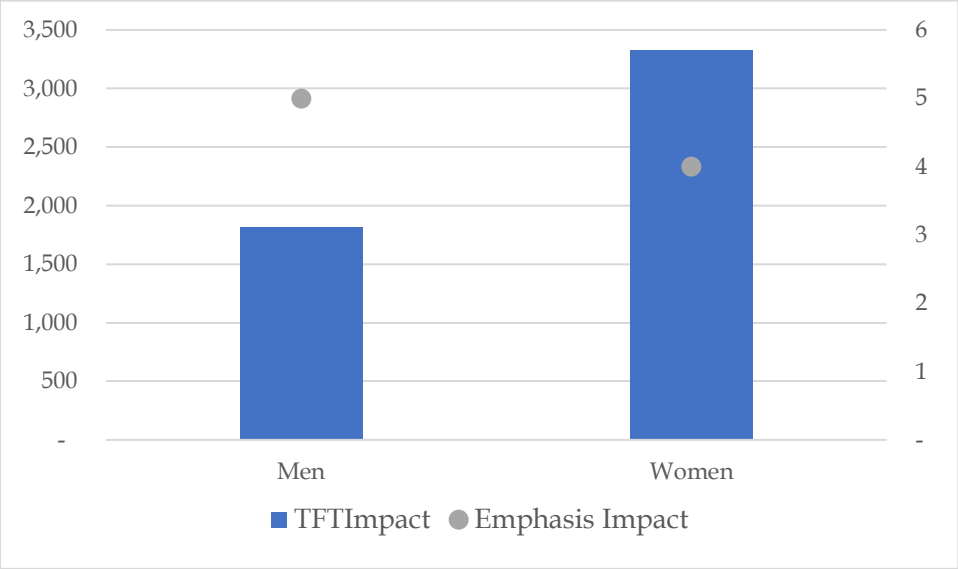
response tends to be more apparent than the less apparent explicit response received from a questionnaire (Barratt et al., 2016).

A correlation test was employed to investigate the congruency between self-reported emphasis to investment strategy, financial return, risk indicator, and impact (collected by participants' Likert scale response in the survey) and actual attention to AOIs (measured by the TFT). The correlation between the self-reported emphasis and TFT for corresponding AOI was found to be none to weak in strength. Due to the statistical non-significance, it might not permit broad generalizations. However, it points towards what is proposed by previous literature, that self-reported data may be insufficient to understand investor behavior.

The most notable Pearson's correlation was for impact (-0.001), which indicates that participants misjudge their belief on emphasis to impact information compared to actual attention allocation. To recap, the participants rated the emphasis they placed on impact in the survey immediately after the eye-tracking experiment. A possible reason why impact seems to be the information that is most difficult to assess might be because of the complexity it introduces. As suggested earlier, impact information introduces ethical considerations, which further complicates decision-making (Shaw et al., 2000).

A descriptive statistic was used to investigate the variance between the eye-tracking data and emphasis from the survey based on gender. For emphasis to impact, males rated higher ($Emphasis_{impact}=5$) than females ($Emphasis_{impact}=4$). However, the actual TFT_{impact} for males (1,817 ms) was considerably lower than for females (3,328 ms). This shows that the male participants overestimated their attention allocation to impact, whereas the female participants have underestimated their attention (see Figure 6.1). This indicates that both genders may not possess complete introspective access. Could it be because males are more confident? Are females more conservative in their responses? Could antecedents account for the difference in estimation?

Figure 6.1. Actual and Self-reported Attention on Impact Information



Comparison of TFT_{impact} (ms) and Self-reported emphasis by gender

6.1.5 Heat maps

The qualitative analysis of the heat maps was intended to investigate the attention allocation in more detail within the individual AOIs. The qualitative interpretations of the heat maps found that the AOIs financial return and risk indicator received the most attention from all the groups. An exception was in group 4, where investment strategy also received considerable attention. One possible explanation for the increased attention to the AOI investment strategy can be the fund name, "Climate Impact Fund", as attention was concentrated around it. The reason for the name receiving attention could be related to the participants' familiarity and relatedness with the climate issue.

Another interpretation from the heat maps was the lack of attention allocated to the disclaimer in the AOI financial return. This might be explained as participants had limited time (only 15 seconds) to read through the impact fund, and naturally, they would be selective in directing their attention to information of higher relevance.

Besides the disclaimer, participants also did not attend to the geographical information provided in the AOI investment strategy. Instead, they allocated their attention more towards the purpose of the fund. It is slightly unexpected that the participants do not allocate much attention to geographical information, as it contradicts the finding of home bias among Scandinavian impact investors (Impact X, 2019). According to behavioral finance, investors tend to prefer investing domestically rather than in foreign markets, referred to as home bias (Coval & Moskowitz, 1999; Fama & French, 2007). This bias would imply a focus on geographical information.

6.2 Limitations

The design of the experiments, eye-tracking, and survey was carefully considered with the aim to minimize bias. However, due to the scope of this paper, some unavoidable limitations were introduced. These limitations and their implications will be further discussed.

Sample

When recruiting participants, the goal was to recruit 24 participants who would view 5 stimuli in order to reach 120 observations. Unfortunately, the experiments had to stop prematurely due to the exponential development in the COVID-19 outbreak. This resulted in a rather small sample size of 12 participants, which reduces the statistical power. Having a larger sample size would have increased the likelihood of producing reliable results through higher confidence level and power while limiting the margin of error and effect size (Saunders et al., 2016).

Furthermore, a sample size of 12 participants is not representative of the entire population of investors in Denmark. Another limitation related to the representativeness was that the sample was selected using a self-selection and snowballing sampling approach. Therefore, the external validity of the findings regarding the population of investors can be improved by examining a more representative sample.

Effects of environment

Another limitation relates to observing attentional behavior in a laboratory setting, which may not provide the same utility as in a natural environment. The setting and knowledge of being watched leads to the Hawthorne effect (researcher effect), which occurs when the act of experimental observation can influence the behavior being observed (McCambridge, Witton, & Elbourne, 2014).

The researcher's presence in the experiment room may bias the results. Navigating this was tricky since the researchers had to be the room to ensure that the eye-tracker was tracking the eye-movements. Moreover, as the participants in our study were aware that their eye movements were recorded, they might have applied different information processing strategy than in a real-life situation. Participants may nonconsciously have directed more awareness towards impact information, knowing the nature of the study, i.e., impact investment.

Another drawback of conducting a laboratory experiment is that it does not replicate real investment conditions. Several methodological choices have contributed to the artificialness of the experiment. One of the most extreme, that was introduced to mitigate more severe limitations is the time constraint of 15 seconds. Furthermore, the investors in our study did not allocate their own financial resources and thereby did not face any actual consequences from their investment behavior.

Stimuli

Differences in the information contained in the four AOIs may have introduced biases in the stimuli. An effort was made to align the stimuli content for processing fluency, elaborateness, and their reflection of reality. With concern to processing fluency, the AOIs had differences caused by varying wording difficulty and length. Furthermore, differences like the AOI risk indicator were expressed using a scale which may lead to higher processing fluency. Some AOIs were more specific than others, e.g., financial

return stated as a percentage. This proposes a difference in the processing fluency between the AOIs and raises the question if differences have affected fixations.

It should be further considered whether the name of the fund, e.g., "Organic Growth Impact Fund", "Aqua Impact Fund", influences the attention allocation to the fund. Lastly, the stimuli were also highly impoverished and thereby not a truthful reflection of the real impact fund information accessed by investors. This raises the question of whether the findings would have been the same in the context of reading actual impact fund information. However, this a topic of another research.

Eye-tracking metrics

Eye-recordings, during the presentation of stimuli, only consisted of fixation-based metrics. Consequently, not all reactions to the stimuli were captured. Previous studies have also utilized pupil, and saccade-based measures as these enable the researchers to measure emotions and mental effort of the participants, respectively. The additional insight into the participants' emotional and mental states during the experiment could have further contributed to understanding attentional behavior not obtained from fixation-based measures. In the current study, it is assumed that attention is allocated due to interest. If the mental effort had been recorded using saccades, it would make a distinction between attention allocated due to interest or processing difficulties.

Geographical limitations

One of the delimitations of this study regarding sampling is that it is concerned with the information processing of investors in Denmark. Therefore, it might not be possible to draw the same conclusion for other countries.

It is also important to note that the research has drawn upon many North American based theories and studies on gender differences in preferences and information processing (Barber & Odean, 2001; J. F. Graham et al., 2002; Meyers-Levy & Sternthal, 1991). Besides the studies being North American, they are also 20-30 years old, and it can be questioned

whether the North American gender differences apply to the gender differences of the Danish investors today. A quick search on Hofstede's six cultural dimensions shows significant differences comparing the United States and Denmark today (Appendix N) (Hofstede Insight, 2020). An example is the dimension, masculinity, which relates to the differences in emotional roles. It measures social sex roles and their effect on peoples' self-concept (Hofstede & Bond, 1984). Hofstede, in his book "Masculinity and Femininity: The Taboo Dimension of National Cultures", compares Denmark and the United States as two very different cultures (Hofstede, 1998). This raises the question of whether North American theories and studies on gender differences can be applied in a Danish context as the gender's self-concept of the two nations differ.

A study by Markus and Kitayama (1991) further argue that self-construals play a significant role in regulating various psychological and cognitive processes. Self-construal refers to the representation that individuals have of themselves, others, and the intercorrelation between the two (Markus & Kitayama, 1991). As self-construals differ between cultures, it further reinforces the geographical limitation to Denmark. Additionally, the influence of self-construals further supports the argument that studies should perhaps focus on antecedents.

Generalizability

The limitations imply a reduction in the generalizability of this study. Due to the small sample size, the study is not able to constitute all aspects of how investors process information. The information processing may vary, both within Denmark, but also in other geographical areas. As discussed above, culture affects the self-construct of gender. Therefore, gender differences on antecedents of behavior as well as for attention allocation might be different in other cultures.

A limitation to the generalizability that is widely present in research is the Hawthorne effect. Our study is no exception. When investors are not studied in their natural habitat,

it cannot be assumed that their behavior in the study mirrors the real world. Therefore, one must be careful when drawing assumptions about investment behavior.

6.3 Future research

The paper might not be able to draw generalizations. However, the study must be perceived as a pilot one, without professing to reach exhaustive and conclusive evidence, but rather with the idea of providing the right direction for future theoretical and practical efforts. Some of the recommendations to gain a better understanding will be proposed in this section.

The first area of improvement could be to employ a larger sample size that will allow constituting more aspects of investment behavior. A larger sample size in the area of attention and understanding of investment decisions could be set up using different target groups. It could be interesting to investigate how different groups of investors, according to their age, experience, risk appetite, knowledge, and even cultural backgrounds, attend to the stimuli and whether there are significant differences.

Future research could also incorporate additional AOIs in the stimulus to include additional impact fund information. As impact measurements have been a topic within impact investment research that has received significant attention, it would be interesting to test these proposals using eye-tracking to investigate impact measures and its effect on attention allocation.

Regarding the stimuli, it would also be interesting to use actual impact fund information rather than an impoverished version as applied in this study. This will allow testing whether the findings of this paper also apply when the investors are reading actual impact fund information.

An eye-tracking method provides a valuable contribution, particularly when the nonconscious behavior of the decision-maker is of interest. Future behavioral research in finance and accounting could incorporate the methodology to yield exciting results. The

method could be applied in areas other than investment decision-making research, such as to investigate what readers of financial statements attend to and choose to ignore.

6.4 Managerial implications

The research question raised in this paper is addressed due to an identified problem in the practical world. As the findings attempt to solve the problem, the contributions of the research are primarily practical. The contributions are relevant mostly within the investment field but are applicable to a broad spectrum of practitioners.

In highlighting the attention allocation by investors in an impact fund, the study holds several managerial implications for companies that market investment products and services towards consumers and banks. Thus, practitioners can apply the findings to optimize their strategy regarding impact investment.

It was found that investors, overall, placed more attention on financial information over non-financial information. However, further narrowing in on gender, it was found that male investors paid more attention to financial information, while female investors attended more to non-financial information. The study has evidenced that female investors distribute their attention more equally, i.e., they are relational processers of information, whereas men focus on cues. Drawing generalizations based on genders has the benefit of being easily applicable in a practical setting. However, as mentioned in the discussion, it might be a trade-off for accuracy. Therefore, optimization of strategy based on this rule of thumb should be tested to seek conclusive results.

The information can be leveraged by impact fund providers in the design, communication, and advertising to make the funds appear even more attractive to investors. It can further be used to educate investors on their own information processing strategies and how it makes them susceptible to biases. Though biases cannot be entirely avoided, raising awareness can help investors make more rational decisions (Nenkov et al., 2009; Tversky & Kahneman, 1974).

6.5 Theoretical contributions

A better understanding of the role of antecedents in predicting investors' attention allocation behavior is one of the contributions to impact investing research made by this study. Notably, "attitude towards unethical business", "self-efficacy", and "empathy" showed the ability to predict investors' attentional behavior to impact information (which was tested in the study and found to have a statistical significance). As the predictors applied in the study were inspired by previous literature, the confirmation of their predictability further supports both TPB and Mair and Noboa's Model of Social Entrepreneurial Intention Formation.

More importantly, although not providing robust theoretical contributions, this study lends an idea to a research methodology that addresses two limitations proposed by the TPB. First, by employing an eye-tracking approach, the nonconscious rather than conscious attentional behavior is revealed. Second, the TPB models intentions but does not investigate actual behavior (Ajzen, 2011). This study demonstrates beyond intentions and directly observes attentional behavior. Thus, it tackles the time frame issue between intent and behavioral action not addressed by the TPB.

7 Conclusion

This study provides a further understanding of the information in an impact fund attended by investors when making an impact investment decision. The study overcomes some limitations of previous research by exploiting a neuroscientific tool, eye-tracking. The methodological approach enabled objective insight into cognitive processing and preferences, which provided a foundation to investigate: "Which information in an impact fund do investors pay attention to when making an investment decision?".

Using a hypothesis testing approach, it was found that investors, overall, attend more to financial information, risk, and return compared to non-financial, investment strategy, and impact, when reading an impact fund. It was further found that women attend more to non-financial information, whereas men to financial information. Gender differences were also found in the information processing approach. The findings suggest that female investors seek to distribute their attention more equally to all the information compared to male investors.

Conclusions drawn on gender may be highly simplified. Therefore, it was investigated how broad attitudes and personality traits could be used to predict attentional behavior to impact information. The findings indicate investors' empathy, their self-efficacy, and attitude towards unethical business to be significantly influential on their attention allocation.

The self-reported emphasis to impact fund information was validated by eye-tracking, which revealed an incongruency. This implies that traditional research methods using self-reported measures might not be able to provide sufficient insight into understanding investors' behavior.

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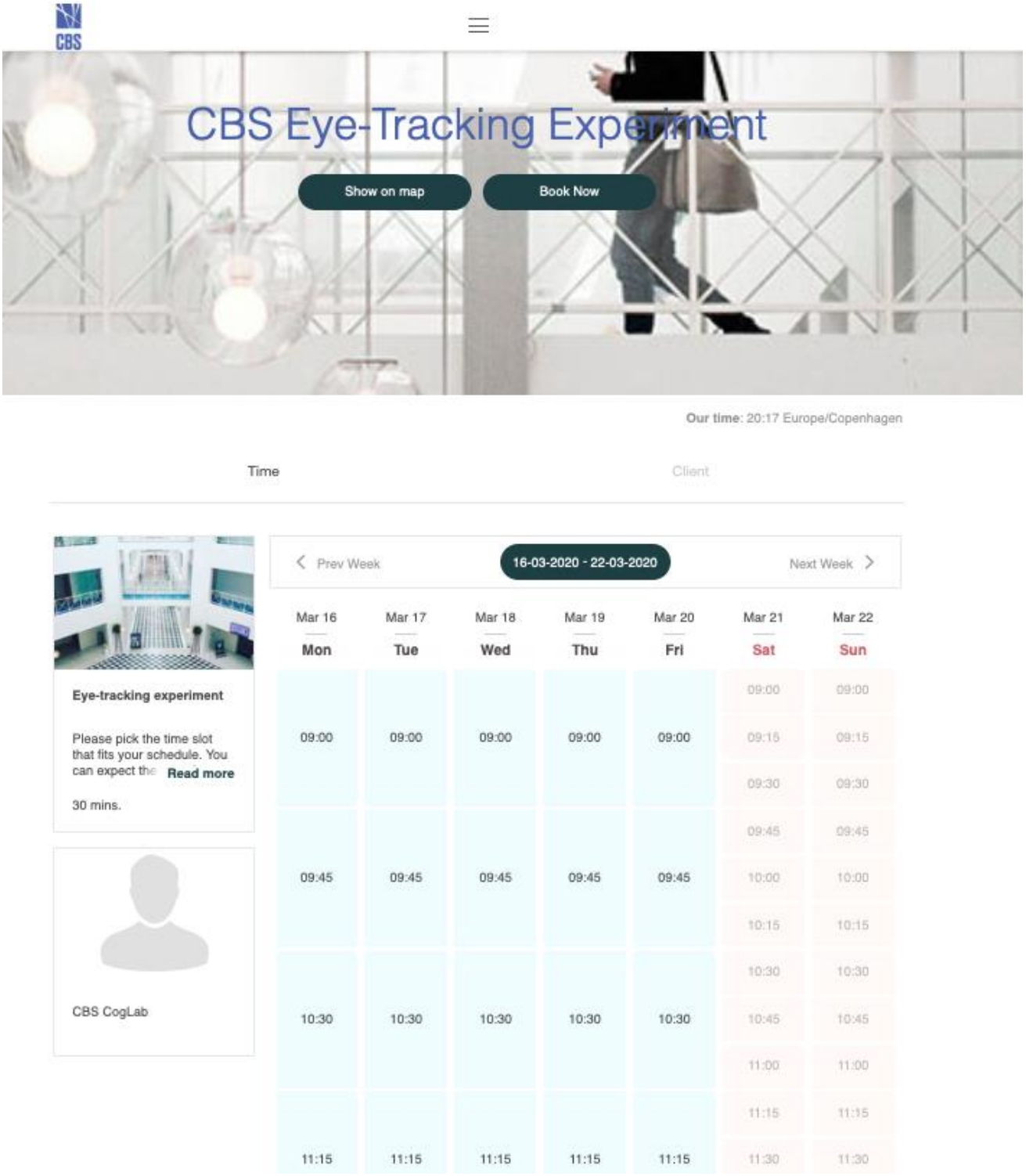
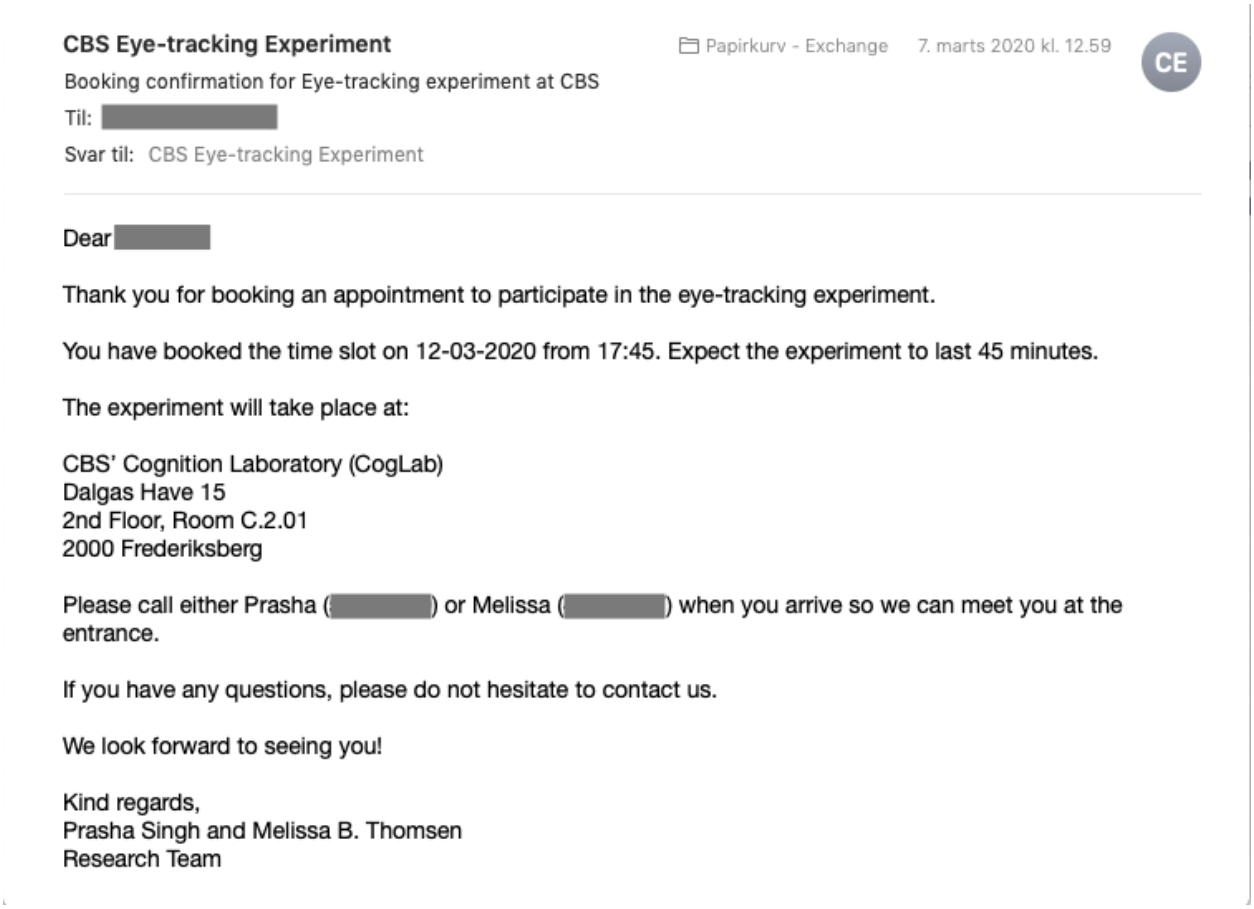
9 Appendices

9.1 Appendix A



9.2 Appendix B



CBS Eye-tracking Experiment

Papirkurv - Exchange 7. marts 2020 kl. 12.59

CE

Booking confirmation for Eye-tracking experiment at CBS

Til: [redacted]

Svar til: CBS Eye-tracking Experiment

Dear [redacted]

Thank you for booking an appointment to participate in the eye-tracking experiment.

You have booked the time slot on 12-03-2020 from 17:45. Expect the experiment to last 45 minutes.

The experiment will take place at:

CBS' Cognition Laboratory (CogLab)
Dalgas Have 15
2nd Floor, Room C.2.01
2000 Frederiksberg

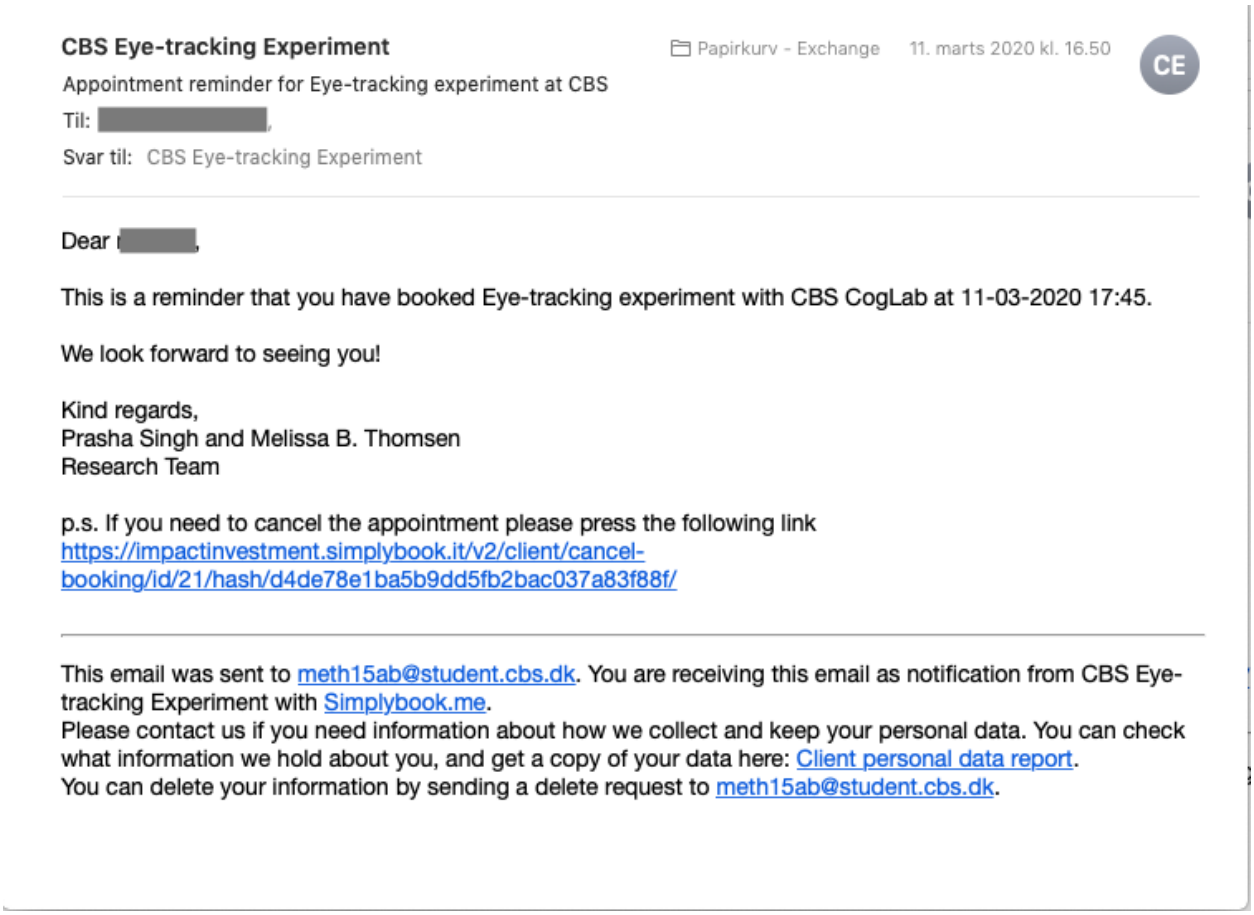
Please call either Prasha ([redacted]) or Melissa ([redacted]) when you arrive so we can meet you at the entrance.

If you have any questions, please do not hesitate to contact us.

We look forward to seeing you!

Kind regards,
Prasha Singh and Melissa B. Thomsen
Research Team

9.3 Appendix C



CBS Eye-tracking Experiment

Papirkurv - Exchange 11. marts 2020 kl. 16.50

CE

Appointment reminder for Eye-tracking experiment at CBS

Til: [redacted],

Svar til: CBS Eye-tracking Experiment

Dear [redacted],

This is a reminder that you have booked Eye-tracking experiment with CBS CogLab at 11-03-2020 17:45.

We look forward to seeing you!

Kind regards,
Prasha Singh and Melissa B. Thomsen
Research Team

p.s. If you need to cancel the appointment please press the following link
https://impactinvestment.simplybook.it/v2/client/cancel-booking/id/21/hash/d4de78e1ba5b9dd5fb2bac037a83f88f/

This email was sent to meth15ab@student.cbs.dk. You are receiving this email as notification from CBS Eye-tracking Experiment with Simplybook.me.
Please contact us if you need information about how we collect and keep your personal data. You can check what information we hold about you, and get a copy of your data here: Client personal data report.
You can delete your information by sending a delete request to meth15ab@student.cbs.dk.

9.4 Appendix D

Participant Consent Form

Dear Participant,

You are about to participate in an experiment for a Master thesis at Copenhagen Business School, Denmark. We appreciate your participation, and we will do all we can to insure your privacy when handling the results of the study. Therefore, please read the following information before the experiment begins.

- Your participation should be entirely voluntary. You may choose to discontinue the experiment at any time if you want to.
- If, for whatever reason, you regret participation at a later point in time, you can contact us at the address below, and we will destroy your results.
- The results of this study may be presented at conferences, courses, or in print. However, personal information (such as your name) will never be revealed to anyone during such presentations, nor on any other occasion.

Please ask the experiment leader if you have any further questions.

I hereby give my consent for the results of this study to be used confidentially for research purposes.

Participant name: _____

Email address:_____

Signature:_____

Date: _____

Contact Information:

Prashamsa Singh & Melissa B. Thomsen
MSc. in EBA - Accounting Strategy and Control
Copenhagen Business School

Email: pasi16ab@student.cbs.dk, meth15ab@student.cbs.dk

9.5 Appendix E

Investment Strategy

The Africa Microfinance Fund supports microfinance institutions and banks that focus their services on people who are excluded from the traditional banking system.

The fund invests in institutions in both developing countries and emerging economies.

Financial Return

The Africa Microfinance Impact Fund has yielded a return of 6.39%, calculated as an annual average on the last 5 years and after all costs being deducted.

The costs of running the fund is 1.93%, of which the bank receives 0.63%.

Note that past performance is not a valid indicator for the future.

Impact

The Africa Microfinance Impact Fund's impact is measured through an analysis of the revenues that are generated from portfolio companies' contribution to the UN's 17 Sustainability Development Goals.

In the latest assessment of portfolio companies, it was found that the fund impacted the particular goals: Goal 2: Zero Hunger, Goal 6: Clean Water and Sanitation and Goal 9: Industry and Infrastructure.

Risk Indicator

The Africa Microfinance Impact Fund's risk is measured on a scale from 1-lower risk to 7-higher risk.

The risk indicator for the fund is 2 out of 7.

The fund invests in countries where political risks and inlflation may be significantly high, and where legal frameworks are still underdeveloped.

9.6 Appendix F

Investment Strategy

The Aqua Impact Fund invests in various companies having water-related activities as their sole business area, while water constitutes just part of the business of other companies.

The fund has investments in developed markets such as Europe and emerging markets such as Asia.

Financial Return

The Aqua Impact Fund has over the past five years generated an average annual return on investment of 11.4% after costs.

Ongoing charges for managing the fund are 2.21%. Of this, the bank receives 0.87%.

Historical return is no guarantee of future return, which can also be negative.

Impact

The Aqua Impact Fund's impact is measured through an analysis of the revenues that are generated from portfolio companies' contribution to the UN's 17 Sustainability Development Goals.

At its most recent assessment in 2017, the portfolio companies supported three of the goals: Goal 6: Clean water and sanitation. Goal 11: Sustainable cities and communities. Goal 12: Responsible consumption and production.

Risk Indicator

The Aqua Impact Fund's risk is measured on a scale from 1-lower risk to 7-higher risk.

The risk indicator for the fund is 5 out of 7.

The fund invests in equities of small and medium sized companies which carries a risk of loss as they often experience more price volatility compared to larger companies.

9.7 Appendix G

Investment Strategy

The Climate Impact Fund invests in various companies with a dedicated focus on climate or environmental activities including sustainable energy technologies.

The fund has a global focus investing in various markets within Europe, North America, Africa and Asia.

Financial Return

The Climate Impact Fund has generated an annual average return of 14.3%, calculated on a five-year period after charges deducted.

The bank receives 1.03% of the overall ongoing charges of 2.89%. This covers maintaining the fund.

Past performance is not a reliable indicator of future performance.

Impact

The Climate Impact Fund's impact is measured through an analysis of the revenues that are generated from portfolio companies' contribution to the UN's 17 Sustainability Development Goals.

The fund supports five of the goals: Goal 6: Clean water and sanitation. Goal 7: Affordable and clean energy. Goal 9: Industry and infrastructure. Goal 11: Sustainable cities and communities. Goal 15: Life on land.

Risk Indicator

The Climate Impact Fund's risk is measured on a scale from 1-lower risk to 7-higher risk.

The risk indicator for the fund is 6 out of 7.

Your investment will depend on how the individual companies in the portfolio perform and whether the equity market in general rises or falls.

9.8 Appendix H

Investment Strategy

The Euro Bond Impact Fund invests in bonds of companies that drive the transition to a sustainable society including infrastructure, renewables, circular economy and social inclusion.

The fund invests in bonds that are offered or listed by governments within the European Union.

Financial Return

The Euro Bond Impact Fund over the past five years and after deducting costs returned an annual average of 10.28%.

The overall costs for operating the fund are 2.76% while the bank receives 0.65%.

Past performance is no guarantee of future results.

Impact

The Euro Bond Impact Fund's impact is measured through an analysis of the revenues that are generated from portfolio companies' contribution to the UN's 17 Sustainability Development Goals.

The latest annual review of the portfolio companies found the largest positive contribution to the following goals: Goal 1: No Poverty, Goal 3: Good Health and Well-being and Goal 13: Climate action.

Risk Indicator

The Euro Bond Impact Fund's risk is measured on a scale from 1-lower risk to 7-higher risk.

The risk indicator for the fund is 4 out of 7.

Due to the illiquid nature of the investments, there could be situations where investors may be unable to sell shares in the fund at the requested date.

9.9 Appendix I

Investment Strategy

The Gender Equality Impact Fund invests globally in companies that are leaders in promoting gender diversity and equality.

The fund has a global focus, investing in markets in the USA, Europe and Asia.

Financial Return

The Gender Equality Impact Fund is calculated based on a 5 year annual average yielding a return of 12.26% after ongoing charges have been deducted.

The bank receives 0.56% of the total ongoing charges for the fund which is 2.45%.

Past performance is not a reliable estimate of future performance.

Impact

The Gender Equality Impact Fund's impact is measured through an analysis of the revenues that are generated from portfolio companies' contribution to the UN's 17 Sustainability Development Goals.

In the latest review of the portfolio companies invested in, the fund achieved positive impact within: Goal 3: Good Health and Well-being, Goal 4: Quality Education and Goal 5: Gender equality.

Risk Indicator

The Gender Equality Impact Fund's risk is measured on a scale from 1-lower risk to 7-higher risk.

The risk indicator for the fund is 5 out of 7.

The fund is subject to risks of their underlying markets or instruments as well as issuer risks and often involve higher risks than direct investments.

9.10 Appendix J

Investment Strategy

The Organic Growth Impact Fund invests in European organic food and sustainable consumer businesses that are committed to increase market share of sustainable consumer products.

The fund invests primarily in Denmark, Sweden, the Netherlands, United Kingdom and France.

Financial Return

The Organic Growth Fund has yielded an average annual return of 9.42% calculated based on the last 5 years of performance after costs.

The overall charge for the fund is 2.99% of which 0.54% is received by the bank.

Past performance does not guarantee future growth.

Impact

The Organic Growth Impact Fund's impact is measured through an analysis of the revenues that are generated from portfolio companies' contribution to the UN's 17 Sustainability Development Goals.

In the last assessment in 2018, the fund was found to impact in particular: Goal 1: No Poverty, Goal 2: No Hunger, Goal 12: Responsible Consumption and Production and Goal 15: Life on Land.

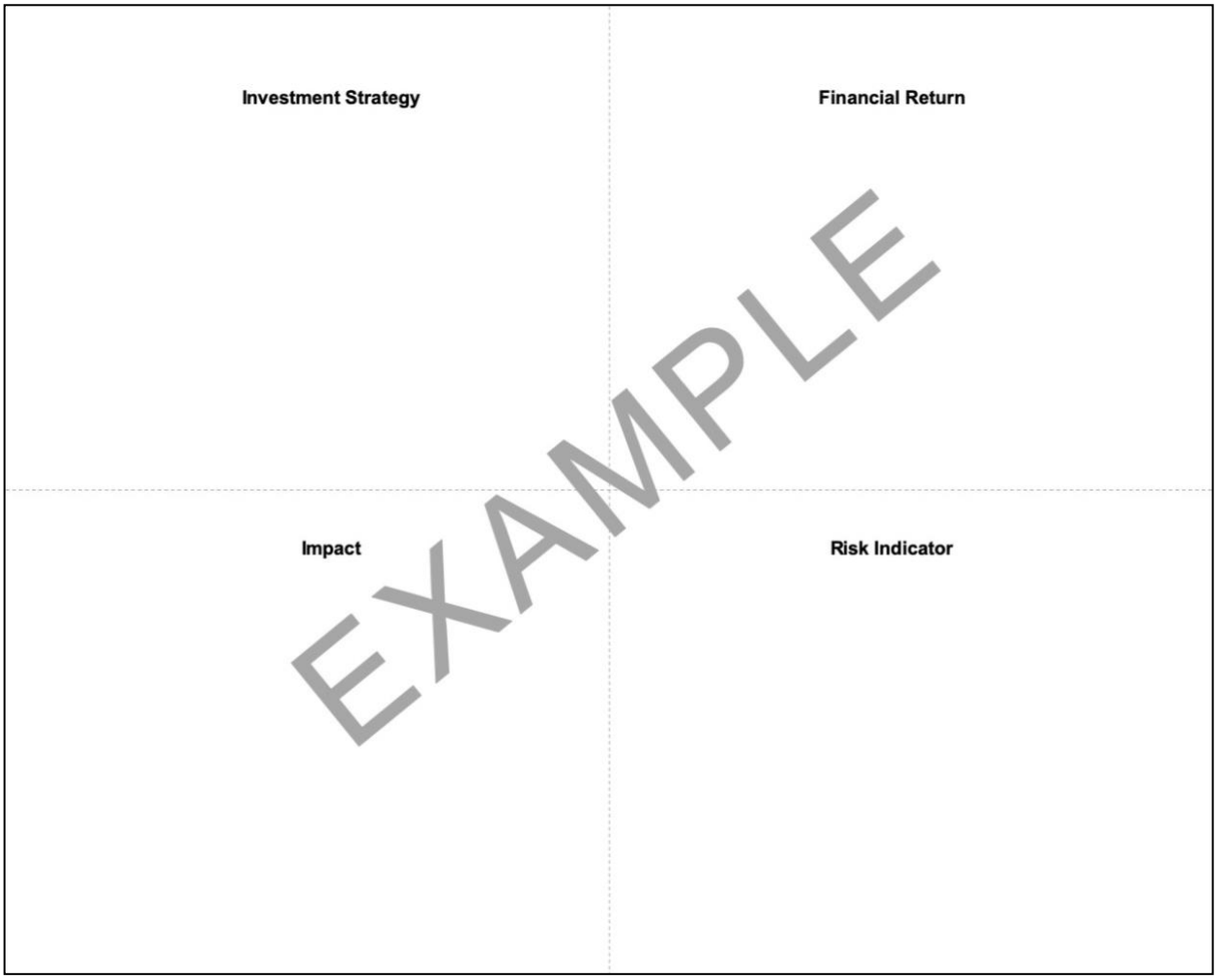
Risk Indicator

The Organic Growth Impact Fund's risk is measured on a scale from 1-lower risk to 7-higher risk.

The risk indicator for the impact Fund is rated 3 out of 7.

As the fund invests in assets that are not traded on a regulated market, its investments may not have readily available prices.

9.11 Appendix K



9.12 Appendix L

INSTRUCTIONS

(Data Collection Phase I)

In the following experiment, you will be presented six impact investment funds:

- Africa Microfinance Fund
- Aqua Impact Fund
- Climate Impact Fund
- Euro Bond Impact Fund
- Gender Equality Impact Fund
- Organic Growth Impact Fund

Your task will be to familiarise yourself with the six funds. Later you will be asked to rate the overall attractiveness of each fund.

Before each impact fund, you will see a fixation cross (+). Please focus your eyes on the cross. Your eye movements will be recorded in the experiment.

Please hit the spacebar when you are ready to proceed.

9.13 Appendix M

INSTRUCTIONS

(Data Collection Phase II)

Now, you will be shown each impact fund again for 15 seconds, your task is to gather the information you need to rate the overall attractiveness of the fund.

Please rate the impact fund as low, medium or high.

As we are interested in your opinion, there are no right or wrong answers!

Before each impact fund, you will see a fixation cross (+). Please focus your eyes on the cross. Your eye movements will be recorded in the experiment.

Please hit the spacebar when you are ready to proceed.

9.14 Appendix N