

From rags to riches

- An explorative study of the technological influence within
modern retail investor behavior

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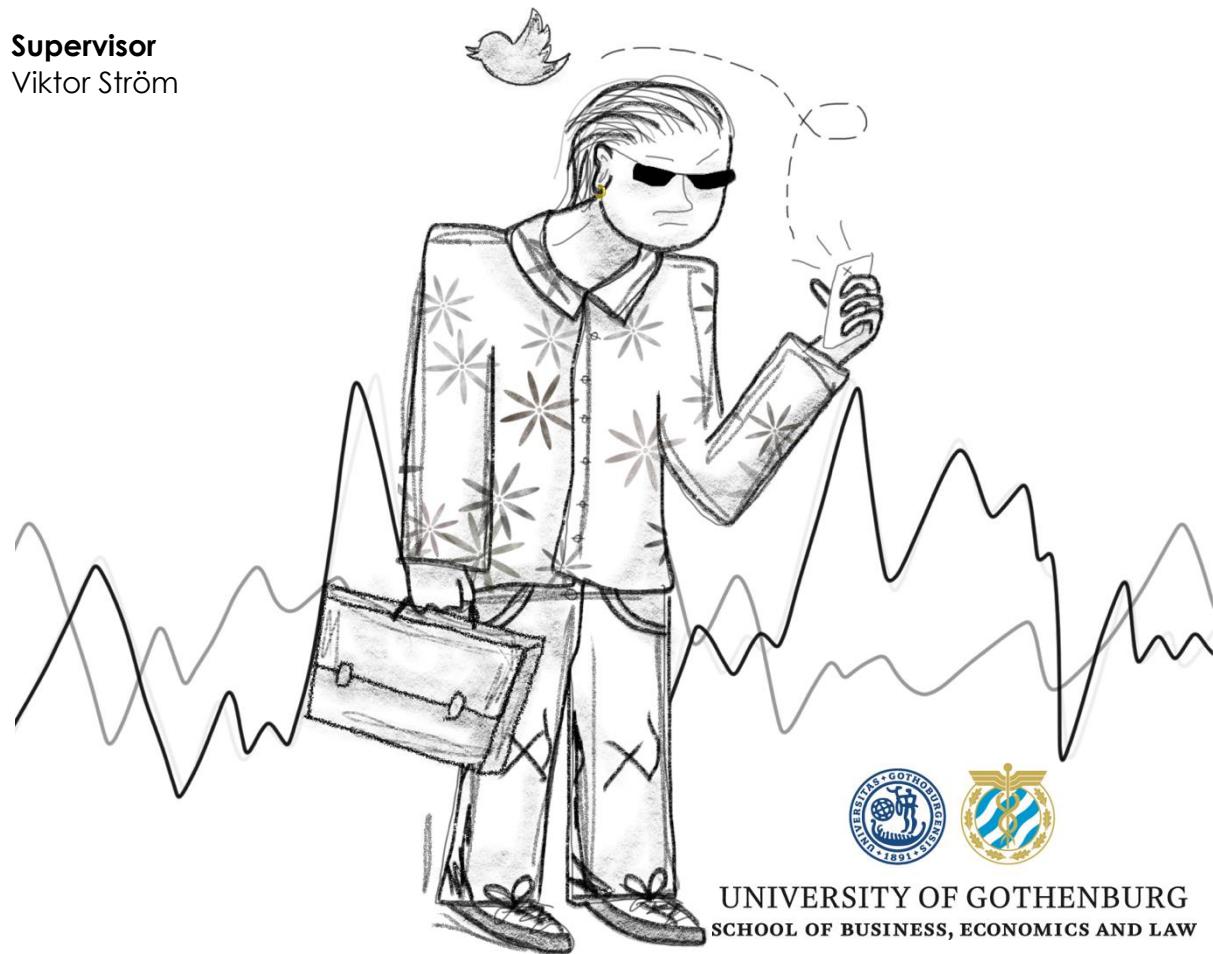
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From rags to riches - *an explorative study of the technological influence within modern retail investor behavior*

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Abstract

Swedish citizens have a long **background** of passively investing in stocks and mutual funds. With the rise of new technologies, an ongoing surge of retail investors actively participating in the financial markets have been identified. At the same time, concerns have been raised towards the increased accessibility inherent in these technologies in terms of gamifying investments. **The purpose** of this study was to gain more knowledge regarding how everyday technology innovations may influence retail investor behavior and explore the responsibilities of identified stakeholders within the retail investing sphere. The **theoretical framework** section covered three main areas of relevance to the effect of new technologies on retail investor behavior. It explored the concept of stock market psychology, new technologies, and corporate social responsibility. This study was conducted using a qualitative methodology together with an abductive approach. Data collection consisted of interviews conducted with retail investors as well as experts and industry stakeholders. A cross-sectional research design was applied, and the interviews were analyzed by the use of the grounded theory approach. Our **results and findings** indicate that new technologies have made modern retail investing effortless in terms of lowering or erasing traditional barriers for retail investors managing their finances. Hence, it can eventually be summarized that new technologies have created unprecedented opportunities for retail investors to be in charge of their finances in achieving subjectively risk-adjusted returns, while at the same time creating an equal number of possibilities to be side-tracked from one's goal as a result of the human behavioral nature. Although a general unwillingness amongst stakeholders to further regulate have been identified, awareness must still be raised regarding the challenges that identified stakeholders now face.

Keywords

Retail investing, Investor, Digitalization, Gamification, Persuasive technology, Social media, Information asymmetries CSR, Firm responsibility, Stakeholders

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1. Introduction

The first section of this thesis will introduce the topic to the reader by explaining what we are studying and why we are doing so which allows the reader to explore the context of the study. First, the background is explored which contextualizes the research topic, which is later followed by a problem discussion. The purpose of the study, as well as two research questions, are also introduced to the reader. A delimitation section is presented where the researcher explains the delimitations made in the research in order to narrow the scope of research. Lastly, the structure of the thesis is presented to provide an overview of the disposition.

1.1 Background

Swedish people have an established history of engaging in financial markets and have a unique track record of mutual fund savings; in fact, no other country in the world saves as much in mutual funds as Swedish investors (Nordström, 2016). The expansive interest in mutual fund savings in Sweden partly stems from a number of political incentives packages introduced in the late 21st century, not least “allemansfond” which has made fund savings a popular movement in Sweden (Nordström, 2016). This popularity was further accelerated by the introduction of ISK (Investment savings account) in 2012, a type of saving account that is taxed more favorably, which has made it highly popular amongst investors (Bengtsson, 2022).

At the same time, new technological innovations have in many senses made a modern everyday life easier for the contemporary human. Perhaps the most significant change of our present daily life initiated with a technological shift with the introduction of the smartphone 10-15 years ago, which we now may ascertain that it has become an essential element of our lives (Aldhaban, 2012; Wilmer et al., 2017). It serves as a platform for various applications and their associated services, and gives us instant accessibility to e.g., entertainment, transportation, exercise tools, and various forms of socializing and communication (Petsas et al., 2013; Aldhaban, 2012; Deloitte, 2021). Not least, this has had a substantial impact on ordinary peoples' accessibility to the financial markets, i.e., retail investors' opportunities to be in charge of their financial situations in terms of making investments and trade securities (Rooney, 2020): A Deloitte (2021) report suggests an abnormal surge of new retail investors entering the financial market since the beginning of the Covid-19 pandemic. Combined with the unique interest and culture of savings in Sweden, it becomes interesting to explore how retail investors in Sweden are adjusting to the vast digital transformation of financial markets that are ongoing given the high rate of technology adaptation in the industry (Deloitte, 2021; Bukovina, 2016). Hence, it raises an interest to further problematize the technological shift in the context of retail investing.

1.2 Problem discussion

Retail investing is a term used to describe ordinary people that access the financial markets through a retail broker (Hayes, 2021). The contrasting side is commonly referred to as institutional investors, and includes e.g., banks, investment companies, hedge funds and other types of investors on a firm level (Hayes, 2021). Similar to institutions, retail investors are now enabled to access the markets and portfolios in real-time, sell or buy at a moment's notice, and enjoy instant access to necessary information (Deloitte, 2021). The inherent user-friendliness in stock market applications that have been trending in recent years is according to Rooney (2020) a considerable factor of the present surge to the financial markets. Hence, this kind of user-friendliness in combination with instant accessibility to information is unprecedented and has changed how people traditionally access the financial markets: There is no longer a need to call local bank offices to place an investment, nor is it necessary to scout for a financial report at the local library as information is instantly available through our smartphones (Rooney, 2020).

Although most technological developments within the smartphone-based platform are commonly associated with factors such as user-friendliness, time-effectiveness and generally making day-to-day life easier, concerns have been raised towards the increased accessibility inherent in these technologies (Wilmer et al., 2017). It can be argued that smartphones allow people to access and do tasks on an instant basis, for example, enjoying entertainment or connecting with people on social media.

At the same time, mental health concerns have previously been raised in the context of retail investing and has recently also become an acknowledged societal topic (Engelberg & Parsons, 2016; Somnell, 2022). The Swedish newspaper Aftonbladet recently made an editorial regarding an anonymous retail investor becoming dependent on stock trading, where he eventually ended up in debt and in addition, even losing his family (Somnell, 2022). The anonymous investor resembles his addiction with the stock market as his past online gambling habits, and most of his trading decisions were based on influences from social media. In the area of online gambling, previous research implies relationships to addictions and destructive habits, where observed issues are being resembled as societal problems (Griffiths & Parke, 2002; Hofmarcher et al., 2020). Additionally, the fact that the inherent user-friendliness in stock markets applications have been criticized for “gamifying” investments cannot be disregarded, as in the case with the popular American brokerage application Robinhood, who faced legal actions on these allegations (Gartemberg, 2021).

Although the surge of new people entering the market is encouraging, the influence of real-time data, social media, and the user-friendliness in investing applications has initiated a discussion

regarding its influence on people and the responsibility of those that has facilitated this development. Hence, it raises a contemporary interest for studying new technologies and human behavior in the context of retail investing.

1.3 Purpose and research question

As digitalization is an ongoing trend in modern society, it becomes important to study its implications on human behavior. Hence, the purpose of this study is to explore how everyday technological innovations may influence human behavior, in order to gain more knowledge on the area. With respect to the introduction and problem discussion, the first research question states:

RQ1: *How do new technologies influence retail investors' experience within their investment decisions and habits?*

The second research question explores what kind of responsibility can be inferred on different stakeholders in the industry given the potential influence they have in shaping the modern retail investing experience:

RQ2: *How do different actors within the retail-investment sphere influence the contemporary retail-investors' experience from a responsibility perspective?*

1.4 Delimitations

A number of delimitations are made in this research in order to narrow down the scope and hence being able to conduct a more focused study. Firstly, the primary focus of the research is to study modern retail investors. In this research, a typical modern retail investor is identified as a person without professional financial expertise, knowledge, and experience, who chooses to access the financial market primarily from an online based retail broker (Hayes, 2021). Professional investors are not considered relevant for the research objectives, same goes for people that work within institutional firms. However, institutional investors, such as banks or hedge funds are to some extent considered in the research, as they play an important part of the financial ecosystem. Moreover, we also delimit this research to not study retail investors who cannot be considered to actively participate in the markets, for example retail investors with solely passive mutual funds in their traditional bank. This exclusion follows a reasoning that their situation may not have explicitly changed due to digitalization and technological improvements of the retail investor's accessibility to the financial markets.

Furthermore, due to the vastness of existing technologies and the constant introduction of new ones, the decision was made to focus on a few prominent technical applications and exclude others. As a result, this research will mostly exclude influences of traditional information channels, such as television news or financial magazines, as they have remained fundamentally the same, despite the ongoing technology developments. Also, the research will mainly focus on smartphone applications, thus excluding computer investing. This decision was made to better understand potential implications of instant accessibility within retail investing and the underlying technological mechanisms of smartphone applications, as smartphones are physically more accessible compared to computers. Thus, a delimitation was necessary to make the research more manageable which in turn can enable a greater understanding of particular technologies' influence on investment behavior. However, the research acknowledges that there may be several other technologies and/or applications that may influence retail investors' investing behavior.

Moreover, in terms of exploring the responsibilities of actors in the industry, the decision was made to focus on a smaller number of prevalent market actors to allow for a deeper understanding of their respective role. Therefore, this thesis will mostly consider the impact of stakeholders that can be argued to have a significant influence on the retail investing experience.

1.5 Disposition

This thesis is structured into six main chapters as can be seen below in figure 1. The first chapter introduces the subject by discussing the research purpose, problem, research questions and delimitating factors. The introductory section is followed by an account of the theoretical framework which covers current literature on the chosen subject. This is later followed by the methodology section which discusses the choices made by the researcher in terms of design, strategy, methods, and quality of research. Empirical findings are later presented which contain the data collected from the interviews conducted which is followed by an analysis that enables a discussion of the theory and empirical findings. Lastly, the conclusion is presented which aims to answer the two given research questions and allow for a discussion about potential areas of future research.



Figure 1: Structure of thesis

2. Theoretical framework

The following theoretical framework section is divided into three main sections which covers areas of relevance to the effect of new technologies on retail investors. Firstly, the phenomenon of retail investing itself is explored and contextualized to the contemporary society. Then, a section introducing the use of new technologies and its relevance for investors is presented. Lastly, a discussion regarding the role of corporate social responsibility and its effect on society will be presented to shine a light on relevant stakeholders. A visual representation of the structure of the theoretical framework can be found below.

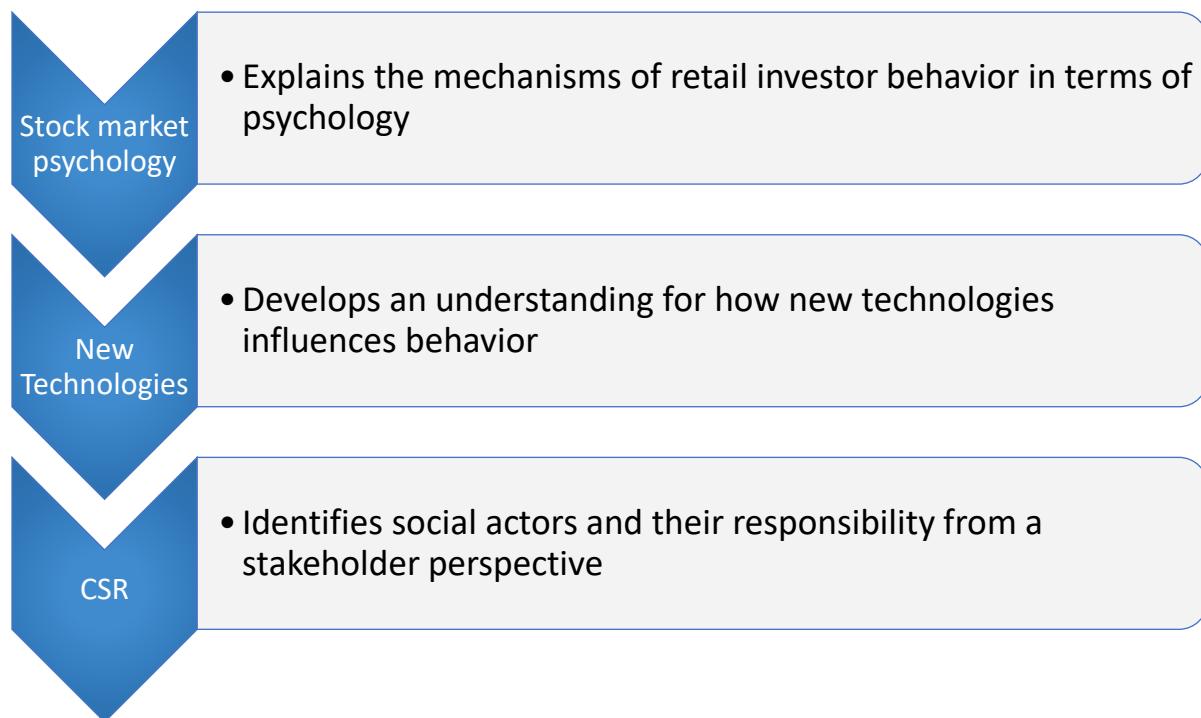


Figure 2: Theoretical framework structure

2.1 Stock market psychology and asset pricing

Asset pricing in the context of retail investing is a well-researched area, however, often the relevant literature originates from a time when digitalization was not present and retail investors' accessibility to the financial markets was limited. Nevertheless, the already well-established theoretical concepts and researched concepts regarding stock market psychology and asset pricing have important implications for the research area in terms of providing a solid basis for our understanding when applying the contemporary trend of digitalization.

2.1.1 Risk attitudes

One recurring topic when assessing investments is the concept of risk. Rather than desiccating and deriving its definition in financial terms, we seek to explain risk in a *perceived* fashion from the perspective of an investor. In the field of behavioral finance, literature such as Kannadhasan (2015) adopts the definition of ‘risk’ as “the unexpected variability (negative) of returns than those expected from investments”, which can be sensed as a retail-investor - oriented perspective of the concept of risk (Kannadhasan, 2015, p. 176). Kannadhasan's (2015) study aims to classify and describe investors in demographic measures, by further extending the concept of risk into two separate concepts: financial risk tolerance (FRT) and risk taking behavior (FRB). The common denominator for the groups that are both more risk tolerant and have a higher degree of risk-taking behavior are “men, younger individuals, single individuals, professionally qualified people, and self-employed individuals...” (Kannadhasan, 2015, p. 179). On the contrary, these findings correspond with Pålsson (1996), where her mapping of Swedish households' perception of risk indicates that women and elders are more risk-averse than men and younger people.

One implication of profiling and characterizing certain risk-engaging behavior is the explanation it can give to the factor of subjectivity inherent in investments. For example, Kannadhasan (2015) relates risk as a measure of handling one's financial situation, which is achieved by goal-oriented actions. This is further referred to as a goal-oriented behavior, which is both influenced by one's internal values, as well when being subject to external sources of influence, for example changes in the economy or labor market (Jaccard & Blanton, 2005). Although Kannadhasan (2015) acknowledges the role of considering subjective measures when demographically profiling retail investors in further studies, established literature is still inadequate in this area. However, the antecedents to the kind of goal-oriented behavior used in the area of retail investing is a well-researched area, often originating in the Weberian sociological theory.

2.1.2 Retail investing rationality

Weber (1978) introduces various rationality- based concepts, which can be applied on various contemporary societal and individualistic levels. Two of Weber's (1978) most central variants of rationality are the goal-rational action and the value rational action. Weber's goal-rational action can be resembled as an extension of Kannadhasan (2015) contextualization of a goal-oriented behavior, and concerns conducting a necessary act for achieving a specific goal, regardless of what the action is. Weber (1978) emphasizes the term “efficiency” in implying that social entities such as humans and organizations strive to reach measurable goals with the least effort. On the contrary, value-rational actions concern achieving goals based on subjective beliefs and justifications, which

can involve elements of goal-oriented rationality such as efficiency in the action itself (Weber, 1978).

To initially contextualize these concepts in terms of investing, suppose the specific goal of achieving financial freedom. The solely goal-oriented rational person would in this setup take any efficient measure in reaching this goal regardless of consequences, e.g., engaging in criminal activities such as committing. A value-oriented rational person would perhaps seek to invest his legally hard-earned money in the financial markets, which shifts the risk to potentially lose money as well.

Acknowledging these concepts allows us to create a point of a reference when assessing the subjectiveness when studying retail investor behavior. Research has shown that retail investors often are the loser when assessing the markets on their initiatives. One study with an experimental construction conducted by Fisch and Wilkinson-Ryan (2014) aimed to research if individuals manage their own pension funds, with the background that The securities and exchange commission (SEC) had made several statements regarding the low level of financial literacy in the US. Their sample consisted of two groups of students engaging in higher level education studies, where one group had access to detailed and easy-to-understand information regarding the properties of the funds, which enabled the researchers to differentiate between cognitive types of failure and motivational types of failure. The results indicate that people managing their own funds made costly mistakes, however, not for the reason of being uninformed or as proposed by the SEC, uneducated. Instead, what mitigated their performance was the motivational factor:

“Our results suggest that subjects who are not motivated to seek and use fee information will fail to do so even when cognitive barriers are minimal” (Fisch & Wilkinson-Ryan, 2014, p. 643).

Interestingly, Fisch and Wilkinson-Ryan (2014) pinpoints that although the group supplied with easy-to-understand fee information, they were still prone to seek extensive information regarding the fees, where it can be interpreted that access to information in this particular case did not seem to make an impact for better returns. Consequently, it can in terms of Weber (1978) be questioned if there is any rationality inherent in the idea that regular individuals without professional experience and academic background in finance should have the same accessibility to the financial markets as institutional investors.

Contrastingly, Hirshleifer and Shumway (2003) research suggests that non-fundamental and irrational factors can be to the favor of the investor, suggesting a possibility that stock market oscillations are rather decoupled from fundamental firm information. In Hirshleifer and Shumway (2003), the daily return of the stock market is related to the weather by conducting a strictly

quantitative study based on historical stock market and weather data: Sunny days appeared to have a significant positive impact on the daily returns on global stock markets. However, the study raises some initial concerns that cannot be disregarded. The researchers argue for the plausibility of their study by emphasizing that a proven relationship between weather and human behavior exists as result of extensive research that previously have been made on the area, which is a claim that can be questioned in various senses.

For example, the results are based on the assumption that those making a certain stock index move in a direction are located in the city of that specific index, for example Nasdaq OMX in Stockholm. Thus, the results may only be generalizable for all investors if e.g., 1), a vast majority of investors making market movements are clustered in Stockholm or/and 2), the weather is sunny in the entire Sweden. Nevertheless, the study does imply some degree of causality between sunny weather and return, as Hirshleifer and Shumway (2003) demonstrates a fairly profitable trading strategy based on trading long positions when sunny. Strengthened with our previously reviewed literature, it signifies clear elements of irrationality driving the markets to create its own behavior decoupled from fundamentals, with the implication of being a notable source for both profits and severe losses.

2.1.3 Costs of an informed investor

A contrasting extension of Fisch and Wilkinson-Ryans (2014) findings is demonstrated by Engelberg and Parsons (2016) in their study concerning mental illness hospital admissions in relation to major stock market declines in the state of California year 1983 to 2011. A strong connection was found between stock market declines and the almost immediate increase of mental hospital admissions, where it is initially implied that people's expectations of future consumption is a direct function of what level a stock market fluctuation affects our present well-being (Engelberg & Parsons, 2016). Moreover, it was also found that over 50% of the times, the stock market decline that spiked the amount of hospital admissions was not connected to any fundamental firm information causing a stock or the market to decline. Instead, Engelberg and Parsons (2016) elaborates that these mental illness cases were related to aspects such as program trading, nervousness and profit taking strategies. Evidence such as Cutler et al. (1988) suggests that an increasingly dominant share of stock market fluctuations is caused by non-fundamental aspects, however, Engelberg and Parsons (2016) contributes to this discourse by discovering that public release of fundamental information may actually increase the risk for mental illness in cases when ulterior anxiety has been accumulated over time on a non-fundamental basis. Strengthened with previously reviewed literature such as Hirshleifer and Shumway (2003), elements of irrationality may drive the markets to create its own behavior decoupled from fundamentals, which can result in both profits and losses.

Moreover, the results by Engelberg and Parsons (2016) appear to support the conclusions of Fisch and Wilkinson-Ryans (2014) regarding that retail investors often pay the price even when cognitive limitations are non-present, with the addition that in Engelberg and Parsons (2016) study, the investors also pay with his mental well-being, which can have more severe implication compared to when losing out on return. In terms of Weber (1978), this highlights the implication of when goal-oriented rational actions conflict with value-oriented rationality, which results in a goal displacement (Kannadhasan, 2015): Losing out on returns or making losses will not enable the retail investor to reach his goal, neither will mental illness issues.

2.1.4 Herding behavior

Hirshleifer and Shumway's (2003) research regarding the weather as a market driver presumes *decision* and *outcome* in being isolated measures of the capital markets. A complementary perspective considers market movements derived from joint, coordinated actions, commonly referred to as "herding" (Bikhchandani & Sharma, 2000). The phenomena is studied by Bikhchandani and Sharma (2000) who describes it as a behavior influenced by others' actions or non-actions:

"Intuitively, an individual can be said to herd if she would have made an investment without knowing other investors' decisions, but does not make that investment when she finds that others have decided not to do so." (Bikhchandani & Sharma, 2000, p. 280).

Bikhchandani and Sharma (2000) concludes that the conceptual phenomena of herding, although not significant enough to explain all market movements, do exist in various forms. In reviewed cases where significant correlation to market movements is observed, such phenomena evidently originated from fund managers' engagement in momentum trading strategies (Bikhchandani & Sharma, 2000). Similar conclusions have also been reached by Lakonishok and Shleifer (1991), who in addition do not find any proof that this phenomenon exists on a substantial level within institutional investing other than within small stocks. According to Bikhchandani and Sharma (2000) it is difficult to distinguish true herding behavior when market movements happen in conjunction with actual fundamentals, which in terms of Weber (1978) would be rational to react on. However, it is important to acknowledge that the scope of these studies is to study drivers of market movements, which can be a possible reason for these studies' focus on institutional investors. Consequently, it cannot be dismissed that herding is non-existent within the contemporary retail-investor sphere, which is the focus of this study. Interestingly, the explanation for the absence of clear herding behavior is rather consistent with our previous learnings regarding non-fundamentals driving the markets, as this rather emphasizes the inherent self-fulfilling prophecy within irrational market movements being boosted by fundamentals, as implied by e.g., Engelberg and Parsons (2016), Hirshleifer and Shumway (2003) and Cutler et al. (1988).

2.1.5 Contemporary retail investing and mobilization of masses

As discussed in the introduction chapter, retail investing per se is not a new phenomenon; however, the development of the retail investors' accessibility to the markets have moved incredibly fast due to technological innovations, enabling the masses to participate in the financial markets in a way that was not possible before (Deloitte, 2021). Deloitte (2021) describes that one of the key implications of retail investors' accessibility to the markets is that they provide liquidity, for example by covering buy and sell orders from each other, as well as from institutional investors. With Deloitte (2021) explaining the ongoing surge to the markets, some odd phenomenon's have been observed. One particular event is the so called "short squeeze" occurring in GameStop's stock autumn of 2020. Umar et al. (2021) describes that masses of retail investors organized and mobilized themselves in buying shares and options of the heavily hedge-fund shorted stock. When the stock started to rise a couple of percentage as a result of the herding, this resulted in striking hedge funds short positions, which eventually caused the stock to rush hundreds of percent (Umar et al., 2021).

Umar et al. (2021) illustrates the GameStop-conspiracy against the hedge funds originated on the social media forum Reddit. Thereafter, lots of other retail investors were quickly into buying the stock when the alleged short squeeze surfaced on Twitter. Through quantitative analysis, Umar et al. (2021) proves the correlation between media-wise sentiment ("reddit-investors") and the returns of GameStop stock, while any correlation with media-averse investors could not be proven. Thus, this can be perceived as evidence for the occurrence of retail investors engaging in herding activities.

Moreover, Umar et al. (2021) emphasizes that the GameStop events led to market inefficiencies due to the fact that the stock rushed and gained completely unrealistic firm valuation considering that the firm was on the verge of bankruptcy. Such consideration is also coherent with previously reviewed studies regarding non-fundamental market fluctuations in relation to irrational behavior amongst retail investors (Fisch & Wilkinson-Ryan, 2014; Engelberg & Parsons; 2016; Hirshleifer & Shumway, 2003). Thus, in terms of rationality, one could not argue for this event being value-rational in the sense of making an investment (Weber, 1978). It must however be acknowledged that these events would probably not have been possible 20 years ago when the accessibility to the markets significantly differed from today, not least as social media is regarded as a key player in the GameStop case (Deloitte, 2021; Umar et al., 2021). With respect to this, it becomes vital to study the literature on new technologies in order to draw upon implications for the present retail investor sphere.

2.2 New technologies: The era of web and smartphone-based solutions

So far, the theoretical framework has been concerned with explaining, contrasting, and dissecting retail investor behavior on the financial markets in order to create a solid basis for further theorizing its implications in the contemporary retail investor context. With regard to the background of this thesis, it has already been identified that access to the financial markets has successfully transitioned to becoming digitalized, which further indicates an urgency to study the implications of digitalization and new technologies of our modern society. Hence, emphasis in this section is concerned with theorizing the mechanisms of decision-making behavior with regard to new technologies, by first introducing the concepts of digital economies and app-ecosystems.

2.2.1 Digital economies and social media

Our modern society can in many various senses be regarded as ‘digitalized’. A plausible elaboration of such development is referred to as an “digital economy”, defined as “The application of internet-based digital technologies for the production and trade of goods and services” in the World Investment Report (UNCTAD, 2017, p.156). As an extension, this definition is consequent with what Rezabakhsh et al. (2006) refers to as an “internet economy”, as it is implicated that the internet economy is characterized by decreasing information asymmetries for consumers which is followed by increased transparency; transparency flourishes informed customer behavior towards becoming more rational in their choices. This is consequent with the ongoing surge of ordinary people participating in the financial markets, as it is reported that accessibility to real-time information is a key compartment of this trend (Deloitte, 2021). Deloitte (2021) also identifies social media and other websites/applications as heavy sources of influence in the retail investing sphere, all available on a regular smartphone.

The financial industry is not unaffected by these trends as Dootson, Beatson, and Drennan, (2016) found that the financial sector can benefit greatly from investing in interactive service innovations such as social media. It is also proposed that the digitalization and emergence of social media will only grow in importance for financial firms in the future which highlights its relevance in today's business climate (Chen et al., 2014; Bukovina, 2016). Hence, firms in the financial sector can utilize social media as a platform for word-of-mouth marketing (Bukovina, 2016) and as a way to create new benefits to existing consumers by facilitating a two-way communication with its customers (Dootson et al., 2016). Additionally, Kumar and Devi (2014) argue that social media engagement can create new channels for customer interaction as financial firms that work actively with social media are better at picking up customer complaints circulating online which enable them to

respond quickly before reputational damage occurs. Hence, there seems to be strong support for financial service companies to engage actively in social media marketing as it not only enables a positive feedback loop to occur but also enables firms to enhance customer service, manage reputation and obtain a competitive advantage (Kumar & Devi, 2014).

2.2.2 Social media and the retail investor

It's rather clear, given the discussion above, why firms in the financial industry would engage in social media, however it is less clear how retail investors respond to such efforts and how they use new technologies such as social media. Retail investors, in contrast to firms or institutional investors, often do not have access to sophisticated financial databases such as Bloomberg because of their limited resources and are thus bound to use publicly available sources about capital markets (Bukovina, 2016). Therefore, in order to alleviate the effects of information asymmetries, retail investors often utilize other information sources including social media which has seen increasing usage in recent years partly because of its growing relevance in financial communications (Snow, 2015). Forums on social media platforms have been used more frequently by retail investors as a way to coordinate and communicate financial strategies, it has also become a place where investors can discuss and argue about financial topics which may in the end lead to more informed retail investors (Chen et al., 2014). Also, the increasing use by retail investors of social media has led to a displacement of other information sources traditionally used by retail investors, for instance, professional forecasters have to a large degree been replaced by independent investors broadcasting their financial analysis themselves (Chen et al., 2014). Thus, to an increasing degree, retail investors leverage the spread of social media to connect and share information about stocks, markets, and coordinate portfolio strategies themselves (Chen et al., 2014; Bukovina, 2016)

Despite the fact that some researchers are skeptical towards the reliability of financial information on social media (Snow, 2016), others instead suggest that social media offers a unique “fact checking” mechanism where users can interact directly with each other and provide instantaneous and publicly visible feedback on the ideas posted (Chen et al., 2014). Hence, it is argued that social media allows a financial article, view, idea, or post to be critiqued and evaluated by the masses which enables users to intervene and correct false or misleading statements which in turn can lead to a more informed investor (Chen et al., 2014). However, this proposed advantage is only realizable if the crowd is somewhat knowledgeable and educated on the topic which naturally is difficult to assume. Nonetheless, social media has allowed a new avenue for community interaction, and it will likely continue to do so in the future as the number of retail investors are predicted to increase further because of technological developments such as social media (Bukovina, 2016; Snow, 2016).

Much of the discussion about social media and advertising so far has centered around how retail investors use social media as an information source and how it enables interaction between financial communities (Chen et al., 2014; Snow, 2016). However, it must be acknowledged that whilst social media arguably offers some benefits to retail investors (Chen et al., 2014) it might also have some adverse effects, especially if they use these channels as their sole information source (Bukovina, 2016). For instance, one potential problem of the increase in independent financial analysis being communicated through social media is that retail investors often trade assets on the basis of non-fundamental information and often directly follow the advice of others (Armonte & Avalos, 2021). For instance, in 2008 nearly 25% of US citizens directly followed investment advice posted on social media platforms (Chen et al., 2014) and given the rise of social media during the 2010s its probable to have increased since. This is evident by the fact that companies can double or quadruple in value simply because investors misinterpret a tweet for endorsing a stock (Armonte & Avalos, 2021). Hence, the underlying problem with using social media as a sole information source is that retail investors forgo any individual analysis in favor of adopting views posted on social media which potentially can have some adverse effect. Especially considering that retail investors are attracted by the speculative nature of a single stock and therefore often fail to diversify their portfolio which arguably makes them more vulnerable to “bad advice” (Armonte, & Avalos, 2021).

Furthermore, a study by Chen et al. (2014) investigated the effect of user generated articles on the biggest investment related site in the US called Seeking Alpha (SA). They found that the fraction of negative words used in the user generated finance articles posted on the site negatively predicted the stock returns in the coming three months. Hence, if an article has a negative tone, chances are that the stock of the given company will likely decrease in the following months (Chen et al., 2014). One interpretation of this, according to Chen et al. (2014), is that retail investors agree and adopt the view of the post or article, either through the forum itself or through news surrounding the post, which ultimately adjusts the price of the stock itself. This would align with the findings of Pagano et al. (2021), who found that retail investors can have a sizable impact on stock prices, at least in the short run. However, an alternative interpretation is that social media posts incite naive investor reactions where spurious or even false information is accepted by traders which then in turn moves the stock price in the discussed direction (Chen et al., 2014). This is similar to the points brought up by Armonte and Avalos, (2021) who suggest that retail investors have a tendency to directly follow the advice of others. However, it must be acknowledged that the study by Chen et al. (2014) concludes that the latter interpretation of the results is less likely to hold as it is contradicting previous research on the matter (Chen et al., 2014). Hence, it's still rather unclear how social media influences retail investors and if it contributes to more knowledge about financial markets or not, but what is clear is that retail investors use social media as an information source and as a way to communicate ideas online.

Lastly, it has previously been proposed that the rise of social media communication in financial topics may have alleviated the effects of information asymmetries in financial markets, especially considering that it has enabled retail investors to coordinate and communicate more easily through online platforms (Bukovina, 2016). However, Snow (2015) suggests this may not be the case as it appears to be mostly large investors that take advantage of earning announcements on social media. Hence, the notion that social media is “leveling the playing field” for small investors may not be entirely accurate given that the increase in firms' usage of social media seem to benefit investors that pay great attention to announcements on social media, which seem to be the institutional investor (Snow, 2015; Jung et al., 2014). Additionally, institutional investors seem to be more skeptical towards social media information as up to 85% did not think social media was a reliable source of information (Snow, 2015). So, even though institutional investors are less inclined to trust social media financial information, they still seem to be better at leveraging the information they use, which would point to the fact that social media has not substantially shifted the information gap between institutional investors and retail investors.

By acknowledging that social media have a close relationship to retail investing although not being its primary purpose, it can be interpreted that different applications are used in some type of synergy. Hence, the smartphone may serve as a host for the various applications. Such a set-up can be described in terms of what Petsas et al. (2013) calls a mobile app ecosystem, discussed in the following section.

2.2.3 App-ecosystems and networks

With the background of studying smartphone application popularity in terms of download patterns, Petsas et al. (2013) findings suggest that application downloads follow a specific power-law distribution, with the implication that a clustering effect is observed. Related to this specific research context, the findings of Petsas et al. (2013) would suggest that a user downloading an investment related app is likely to download another app from the same category over time; the same would also be applicable for social media, which according to Deloitte (2021) is a heavy source of influence in the retail investing sphere. However, this does not imply that *any* app from that category is downloaded, as Petsas et al. (2013) demonstrates the occurrence of the pareto-effect, meaning that there is a high probability that a user's downloaded apps are clustered around 10% of all available apps, which accounts for 70% to 90% of all user downloads. These findings open up for studying why some apps gain more popularity and coverage than others, which serves as an essential step towards understanding the implications of new technologies within the modern retail investor experience.

Hence, when assessing the results in Petsas et al. (2013), questions arise regarding how top-tier applications can continue to both gain and keep their dominance. Acknowledging the antecedents to the emergence of digital economies and clustered app-ecosystem may be helpful in order to understand this. Katz and Shapiro (1994) narrate that while some goods and services are independently valuable, a substantial proportion of innovations are quite useless in its own vacuum. For example, consider social media; without a proper number of users, social media would not be very social, and hence, rather worthless. The value creation of one user's benefit from social media would instead increase by more people joining, resulting in enlarging the social media, which is referred to by Katz and Shapiro (1994) as “the network effect”. Moreover, on a macro level, the ecosystem and networking effects required to even allow a social network to be established would perhaps include smartphone users and the technology that makes data processing, graphic visualization, and interaction possible. In summary, one perspective in assessing the pareto-effect observed in application ecosystems (Petsas et al., 2013) requires in terms of Katz and Shapiro (1994) the following to be addressed: expectations, coordination, and compatibility.

2.2.4 Instant gratification and accessibility

Although we are now able to explain how new technologies have prevailed and become the dominant logic in terms of e.g., ecosystems, other factors may also have contributed to this development. Recent literature aims to challenge the positive aspects of smartphone accessibility by contrasting it with areas of concern. One element that is particularly interesting for this study is the phenomena of delayed and instant gratification related to smartphone applications, as addressed by Wilmer et al. (2017). Extensive research has been made regarding human's ability to delay gratification, one of the originating theories is the Stanford marshmallow experiment (Mischel, 2014). In the experiment, a child is offered to choose between an instant but small reward, or to delay his gratification by enjoying two rewards when waiting a certain time, which is similar to the logic of investing in terms of delaying future consumption (Fisch & Wilkinson-Ryans, 2014). When following up the children's development throughout the years, it was, amongst other things, found that those who chose to delay their gratification were better off socially, cognitively, and physically (Mischel et al., 1989).

These findings are fairly consequent with findings concerning gratification in the context of smartphone habits. For example, a possibility to instantly gratifying oneself exists, which suggest decrease in cognitive capabilities, for example information processing (Hadar et al., 2015 reproduced in Wilmer et al., 2017), as well as indicating impulsive behavior (Sanbonmatsu et al., 2013 reproduced in Wilmer et al., 2017). Mischel et al. (1989) addresses this concern by highlighting that the ability to delay one's gratification plays an important role for an adult's everyday life, for

example in terms of coping with stress and having self-control, but also in order to reach certain achievements, which further can be regarded as important elements in the context of investing. Hence, it becomes feasible to believe that the ability to gratify oneself may increase risk for rationality conflicts such as goal displacement in terms of Weber (1978) by for example participating in excessive trading, profit taking and general nervousness, as described by Engelberg & Parsons (2016).

By acknowledging the possible role of gratification in the modern retail investment context, premises have been established for studying how instant or delayed gratification can be influenced from a technologically interactive perspective.

2.2.5 Persuasive technology and gamification

In the field of psychology, the technique of persuasion is referred to as an external source of influence that aims to manipulate one's beliefs and attitudes, which in the extension may influence one person's intention, behavior, and action (Albarracín et al., 2014). Although the term in e.g., Albarracín et al. (2014) originally was used when describing people-to-people encounters through communication; persuasion can take other forms as well, for example object-to-human encounters. In the research context, persuasive object-to-human encounters could be derived from e.g., applications, smartphones, computers and other intractable technological appliances and interfaces, which is referred to as persuasive technology (PT) (Spelt et al., 2020; Fogg, 2002). At first glance, it can be argued that PT is less characterized by human attributes compared to human-to-human persuasion, which would rather shift the emphasis on *communication* towards *interaction* within PT. However, although tangible differences are obvious, Fogg (2002) urges that technological objects should be perceived as social actors, as their intangible characteristics are fundamentally equal to those inherent within human encounters. Such characteristics, or social cues that Fogg (2002) calls them, are presented in table 1 and can be of e.g., physical nature (movements or appearances), psychological (preferences, personality, empathy) or a social role (teammate, friend, guide).

Primary Types of Social Cues

Cue	Examples
Physical	Face, eyes, body, movement
Psychological	Preferences, humor, personality, feelings, empathy, "I'm sorry"
Language	Interactive language use, spoken language, language recognition
Social dynamics	Turn taking, cooperation, praise for good work, answering questions, reciprocity
Social roles	Doctor, teammate, opponent, teacher, pet, guide

Table 1: Example of social cues (Fogg, 2002)

The social cues serve as a measure of establishing social presence, which is required for humans' natural social response to the source of influence; in other words, to also respond with a social cue (Fogg, 2002). Hence, with this acknowledgement, the social cues may serve as a tool for analyzing the persuasive attributes of technology related to the sphere of retail investing.

Physical attractiveness is described by Fogg (2002) as a powerful social cue with the potential to solely be the source of persuasion, possibly explained by the "Halo effect" phenomena: If someone or something is perceived as visually attractive, it probably has other non-visual qualities as well, which influence how it is perceived and which social response that is given. Connecting to the research context, a stock market application with a neatly designed user-interface may in terms of Fogg (2002) trigger the user in presuming other qualities such as reliability, accuracy, and quickness, which enables the persuasion process. The purpose and implications of PT is further illustrated with a slot machine, which according to Fogg (2002) is designed with physical attributes such as flashing lights, movements, animations, and fictional characters, which entertains and persuades the user to keep playing. As such attributes have been proven to be effective, elements from gambling and gaming are used in other configurations as well, where the act of implementing such attributes is commonly referred to as "gamification". Elements of gamification have been observed within retail investing by Deloitte (2021), and research suggests that gamification has proven to be effective influencing certain actions and behavior in areas such as education and exercise applications, although not being the sole reason for the desired behavioral outcome (Huang & Soman, 2013; Hamari & Koivisto, 2013). Hamari and Koivisto (2013) implies that the desired outcomes of gamification can be result of the attitudes towards it, so called "social response", which in turn is a function of networks, which eventually relates back to the previous discussion regarding ecosystems and network effects (Fogg, 2002; Katz and Shapiro, 1994; Petsas et al., 2013). Hence, the mechanisms of possible drivers of the recent trends within modern retail investing have now been identified and related to each other.

2.3 Corporate social responsibility (CSR)

So far, the theoretical framework has been concerned with introducing the contemporary behaviors of retail investors and putting it in the context of current technology development and digitalization of financial markets. The last part of this theoretical framework, however, will move on to discuss corporate social responsibility and explore what responsibilities firms and government have towards its stakeholders. The topic is relevant to explore as corporations and governments may have a legal as well as an ethical responsibility towards its stakeholders, which in the research context involves retail investors. Thus, studying responsibility and accountability in the financial industry sector may allow for factors to be revealed that have some influence on the behaviors of retail investors.

2.3.1 Corporate social responsibility theory

Corporate social responsibility (CSR) refers to a concept first theorized in a book by Howard Bowen in 1953. Bowen explained that the newly coined concept was a way for firms to take social responsibility for its impact on society which evidently had been growing during this time (Preston, 1975). The concept gained initial interest by scholars and businesses alike and it has become increasingly prominent in the public discourse, not least in the 21st century (Oh et al., 2013). However, ever since the introduction of the concept it has been difficult to establish a consensus about its definition (McWilliams & Siegel, 2001; Kotler & Lee, 2005; Öberseder et al., 2013). As a result, several interpretations of CSR have been presented, for instance, Kotler and Lee (2011) describe CSR as a *“firm's commitment to improve wellbeing through discretionary business practices and contribution of corporate resources”*. Other scholars such as McWilliams and Siegel (2001) define the concept more broadly as the actions of firms to further some social good beyond what is in the interest of the firm and required by law. Hence, it's quite clear that several different interpretations of CSR exist, however, this research will broadly consider CSR as initiatives of firms to do good beyond what is required by law.

Moving beyond the complexity of defining the concept, the term is appropriate for this research to explore as it has been given notable attention in academia and business in recent years, much because of its increasing relevance in today's business world (Oh et al., 2013). More than ever, companies are devoting notably resources to social initiatives, environmental protection plans and socially responsible business practices partly due to increases in market potential of CSR initiatives (Du et al., 2010; Lee & Shin, 2010). However, the sharp increase in CSR initiatives by large corporations can not solely be attributed to an increase in moral epiphany amongst firms but rather argued by Du et al. (2010) to be a result of the macroeconomic forces that allows companies to reap large business returns from their CSR endeavors. It's also suggested that stakeholders such as

consumers are more likely nowadays to reward companies that are deemed to act responsibly and punish those that do not. Hence, an “carrot and stick” approach has been adopted by the market where good corporate citizens are rewarded by loyal customers while bad companies risk losing market share due to boycotts (Du et al., 2010).

2.3.2 Role of the firm

Generally, two schools of thought have emerged in the discussion about the role of firms in regard to their responsibility towards society. On the one hand, proponents of the *shareholder theory* argue that firms first and foremost should focus on maximizing profits and increase economic growth as long as it's within the confines of the law (Carson, 1993). In contrast, the *stakeholder theory* goes beyond economic and legal responsibilities and incorporates ethical and moral dimensions into business practices (Freeman & McVea, 2001). These two contrasting theories are considered appropriate for this research as it explores to what degree firms should engage in CSR and what responsibilities firms have towards their stakeholders. Although the theories are not in the context of broker firms or the financial sector, they are deemed suitable to use as a general framework from which contextualization to the chosen research area later can be made.

2.3.3 Shareholder theory

Popularized by famous economist Milton Friedman, the shareholder theory represents a perspective that there is one and only one social responsibility of firms, and that is to follow the wishes of shareholders by increasing profits (Schwartz & Saiia, 2012). Naturally, not all shareholders are chasing profits, however, the general perception is that they want to make as much money as possible and thus the main objective of firms should be to adhere to that objective while still engaging in *“open and free competition without deception and fraud”* (Carson, 1993). In this perspective, the societal benefits of firms are argued to be the additional wealth creation and employment opportunities they create by focusing on profits (Moore, 1999). It is probable that firms within the financial sector have adopted a similar perspective in the past as CSR engagement has historically been lacking in the industry (Weber et al., 2012). One potential reason for the low enthusiasm for CSR in this industry might be because consumer sensitivity and reactivity are assumed to be lower in financial sectors than in other consumer goods markets where brands can be substituted quite easily with low switching costs (Pomering & Dolnicar, 2006). Additionally, the lack of direct emission in combination with a limited need for natural resources may also partly be a reason for the low CSR commitment in the financial sectors as it is by virtue not considered a “polluting industry” (Weber et al., 2012). However, it does have considerable influence on economic and sustainable development which in recent years have pushed the financial sector into a more suitable direction (Weber et al., 2012).

However, the problem with further incorporation of social responsibility into firms' core practices is according to Friedman (1971) grounded in the inherent agency principal problem in organizations as business executives are employees of the shareholders. Any type of engagement in societal issues of the firm will ultimately be paid for by the shareholders, not the CEO or business executive who orders it. Hence, Friedman (1971) argues that an agency problem will occur if the executive deviates from the wishes of the shareholders in order to serve a general social interest that puts extra costs for the firm which are paid for by shareholders. Also, the burden of payment for "social responsibilities" may end up on employees or customers of the firm as prices need to be raised or wages need to be lowered to accommodate for the costs of CSR (Friedman, 1971).

To alleviate a possibility of an agency problem to occur, Friedman, in line with shareholder theory, advocates for a separation between firm interest and societal interest. Managers appointed by shareholders should act in the interest of their appointee and should therefore not involve themselves in societal issues if they run contradictory to its main objective as it would represent a conflict of interest (Friedman, 1971). In the end, firms should only engage in CSR if it runs in conjunction with the overall goal of the shareholders and if engaging in social initiatives would further the economic position of the firm.

However, in recent years, the potential monetary gain of engaging in CSR has increased extensively (Du et al., 2010), which may alter this relationship between profits and CSR and blur the line between firm interest and societal interest. Additionally, engaging in CSR activities may have substantial positive effects on consumers' purchasing intentions, especially if the CSR activities are social contributions or local community contributions (Lee & Shin, 2010). CSR activities may also, in the long run, benefit the company by creating a strong corporate image, strengthen stakeholder relations and build support for the firm, which in turn can further the financial position of the corporation (Du et al., 2010). Hence, it is possible, especially in the 21st century where CSR has gained additional interest (Oh et al., 2013), that firms advocating for a shareholder approach would still engage in CSR as they could benefit financially by it (Du et al., 2010). This would be in line with the arguments presented by Friedman (1971) as CSR is not seen as a negative activity but rather as a tool for further economic growth which arguably may be the case in the 21st century.

2.3.4 Stakeholder theory

Much of the discussion so far has centered around a perspective of CSR as being a secondary and voluntary engagement by firms as a means to gain further economic growth. However, an alternative approach was proposed by Robert Freeman in 1984 which sought to explain the relationship between business executives and stakeholders (Freeman & McVea, 2001). The

stakeholder theory, in contrast to shareholder theory, focuses on more than simply adhering to shareholder interest and instead incorporates the expectations set by other stakeholders such as customers, suppliers, constituents, governments or other actors that may be influenced by the actions of the firm (Freeman & McVea, 2001). The theory describes firms as part of a “*constellation of cooperative and competitive interest possessing intrinsic value*” (Moore, 1999, p. 117) which emphasizes the collectivism of the theory. Hence, in this perspective, corporations cannot isolate themselves from society as they play a crucial part in it and therefore have a collective responsibility towards it. The theory has gained considerable interest in recent years, not only because of the growing interest for business ethics but also because of its central role in corporate strategy (Moore, 1999). A visual representation of the theory is presented in figure 3:

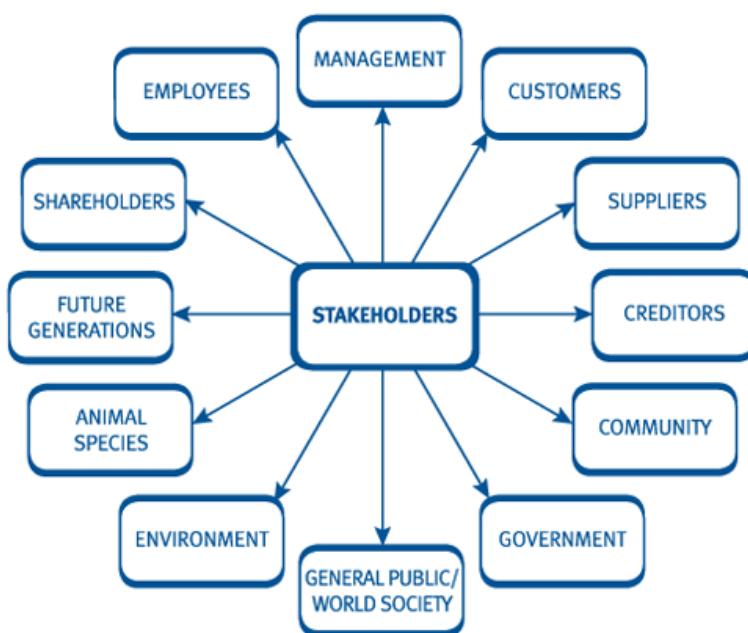


Figure 3: Map of stakeholders of an organization (Jones, 2015)

In line with the stakeholder perspective, financial institutions enabling investments should take responsibility and accountability for its stakeholders, not least, its customers. It is probable that firms in the financial sector adopting this approach would be highly interested in understanding the needs and wants of its stakeholder, especially considering the potential adverse social consequences of retail investing (Engelberg & Parsons, 2016). Similarities can be found in the gambling industry which has long been criticized for its negative effects on its stakeholders, most notably its customers (Driver & Thompson, 2002). As a result, high taxes are often imposed and limits to the extent of gambling are often established to compensate for the effects of the industry (Driver & Thompson, 2002). This negative association has led some firms in the gambling industry

to adopt a greater stakeholder perspective as they try to self-regulate and impose measures to increase CSR in their industry and thus create more responsible gambling (Blaszczyński et al., 2011). For instance, protective measures such as behavior tracking have been used to identify potential high-risk individuals enabling preventive actions to be taken before the problem occurs (Reilly, 2017), which potentially could be adopted by the financial sector as well.

Furthermore, it is suggested that undertaking a long-term approach towards stakeholders can be important for firms in order to prosper as treating stakeholder right has been linked with several positive effects for firms, not least financial performance (Thomaidou & Bellou, 2012). Additionally, Galbreath (2010) found that meeting the needs of customers by engaging in visible CSR activities may lead stakeholders to infer various positive characteristics that can create an avenue for increasing firm performance. Therefore, CSR can be a way for firms to generate favorable stakeholder attitudes and build support networks that bolster firms' corporate image, employment attractiveness, as well as increasing stakeholder advocacy behavior (Du et al., 2010).

2.3.5 Role of the government

In order to conclude the discussion about CSR, the role of the government must first be explored given its substantial influence on society and in turn on retail investors given its power as a legislature. Perhaps the most basic function of government in regard to CSR is to ensure corporations follow the rules and norms of society (Singhal, 2014). Governments can ensure this by regulation, which is societies codification for what's right and wrong and it's a way for governments to establish a legal bottom line in regard to corporate responsibility towards stakeholders (Carrol, 1991). Governmental action can take the form of laws, regulations, policies, penalties, and any similar measure used to control or restrict business practices (Singhal, 2014). For instance, in the financial trading sector, there are laws specifically designed to protect investors (stakeholders) from market arbitrage by prohibiting market manipulation and insider trading (Riksdagen, 2005). Additionally, governments can enact laws and mandates that directly target CSR efforts by firms. For instance, mandatory sustainability reporting is one tool that has gained interest in recent years, and it is described as "*a report published by a company or organization about the economic, environmental and social impacts caused by its everyday activities*" (Wethman, 2017). Sustainability reporting is a good example of how governments can increase transparency to stakeholders which in turn can have the potential to strengthen public confidence in the integrity of the firm and enable stakeholders to analyze firm's specific information (Singhal, 2014).

Furthermore, some argue that the role of the government in regard to CSR needs to be greater than simply establishing a legal bottom line, rather governments need to proactively promote and incentivize voluntary CSR efforts by firms. Governments have the capacity to create a business

environment for responsible private sector development by removing barriers, reducing costs, and rewarding corporate responsibility (Singhal, 2014). Governments can also actively engage in activities that foster, endorse, and facilitate development of corporate social responsibility. For instance, governments may provide tax incentives to drive social and environmental improvements amongst firms, or it could work with awareness programs to educate (Singhal, 2014). Hence, the role of the government does not solely have to be legislative, but rather it can create a social environment by being a business advisor, a technical assistant, a capacity builder, or any other role that can help firms facilitate sustainable development (Singhal, 2014). Additionally, similar to how customers reward socially responsible firms and punish irresponsible ones (Du et al., 2010), governments can adopt a similar “carrot and stick” approach to facilitate the development of CSR.

3. Methodology

This following section covers the research methodology of this research. The purpose of this section is to explain the overall strategy of the thesis, and the rationale of methodology choices made. Firstly, the research approach and strategy aspire to convey the thought process of the authors and explain the structure of the research. Data collection and data analysis explains the unit of analysis, how the authors have gathered the data, and finally how that data has been analyzed. Lastly, the research quality is discussed to offer the reader insight into how methodological decisions were made in regard to its impact on overall trustworthiness of the results.

3.1 Philosophical assumptions

In order to understand the methodological choices made in this research, it must first be understood through which lens the researchers view reality. There are two main assumptions according to Bell et al. (2019), the first one is referred to as ontology which describes the researcher's understanding of reality. The second assumption is referred to as epistemology which describes how the researcher gains the knowledge of reality. These two assumptions are further influenced by two philosophical positions, namely objectivism and constructionism (Bell et al., 2019). The former describes a belief that the object under investigation is existing objectively and is independent of the role of the observer (Bell et al., 2019). Hence, objectivism proclaims that the world is context-free, and researchers may only gain knowledge from observing a phenomenon in a static form (Bell et al., 2019). Contrastingly, constructivism emphasizes the role of social influences and believes that the object under study is influenced by social interaction that frequently changes its characteristics (Bell et al., 2019). Hence in this view, the researcher's position

is acknowledged to be subjective, and therefore the object under study is affected by the research view of the world (Rehman & Alharthi, 2016).

The purpose of this thesis is to gain a greater understanding of the influences of new technological ecosystems on the contemporary retail investing experience. To serve the purpose, this research has adopted an ontological position of constructivism as it is interested in capturing the subjective views of the respondents. The chosen assumption about reality acknowledges that social actors influence their environment, meaning that retail investors are not considered a fixed external entity, rather their opinions and perceptions can change and are susceptible to the views of the researcher.

3.2 Research approach

The type of research strategy pursued is often highly influenced by the relationship between theory and research (Bell et al., 2019). Generally, two contrasting approaches have emerged in the discussion about how to tackle empirical research, namely, inductive, and deductive research approaches (Bell et al., 2019). The former describes an approach that is common in qualitative research, and it is concerned with creating new, generalizable, theory within a field rather than examining existing theory as within a deductive approach (Bell et al., 2019). The inductive approach starts with empirical findings and observations from which it later bases its theoretical contribution on, i.e., it only considers theory that is found to be relevant to the empirical findings (Bell et al., 2019). In contrast, the deductive approach starts from the opposite end, it begins with establishing theory and testing that theory by forming hypotheses. Oftentimes the deductive approach is suitable in quantitative research as it is influenced by objectivism as it is based on the belief that the knowledge is measurable. Hence, the choice of research strategy depends heavily on the way the research is conducted, whether it starts from empirical findings as in the inductive approach, or if it starts with theory in line with the deductive approach (Bell et al., 2019).

This research will involve studying intangible and non-quantifiable elements such as experiences, habits, and behaviors. Although this study's purpose is to explore and create more understanding for the research area, human behavior and new technologies is not completely unfamiliar to us, either empirically or in terms of already established theories. Thus, a truly inductive approach is not suitable for this research. However, the research is also not interested in proving a cause-and-effect relationship against already developed theories, as it would not align with the explorative objectives of this study, making the deductive approach less suitable as well. Therefore, neither a deductive nor an inductive approach will be pursued by this research, rather a third option was instead considered, namely the abductive approach. Van Hoek et al. (2005) explains that the abductive approach is a mix between the two aforementioned approaches as it collects data and theories simultaneously rather than keeping the processes separate. It originates from the idea that

research is neither perfectly inductive nor perfectly deductive (Van Hoek et al., 2005) and it serves as a response to the limitations of the established approaches. For instance, deductive reasoning is often not considered flexible enough, meanwhile inductive reasoning is critiqued because there is no certainty that the empirical data will enable theory building (Bell et al., 2019). Thus, abductive reasoning is proposed to be a response towards these limitations (Mantere & Ketokivi, 2013) and it is suggested to be a suitable research strategy when it is not appropriate to start from either empirical findings or theory, which then necessitates an alternative approach (Bell et al., 2019). Therefore, in line with the arguments presented above and the explorative nature of this research an abductive approach was deemed to be the most suitable approach to answer the research questions and aim of this paper.

3.3 Research strategy

Once the research approach had been determined, the research strategy needed to be developed, which was influenced by the relationship between theory and research (Bell et al., 2019). Two ways of conducting empirical research are often discussed, quantitative or qualitative research strategy. Arguably, the most distinct difference between these two prominent research strategies is that qualitative research tends to be more concerned with words rather than numbers which is in stark contrast to the quantitative approach (Bell et al., 2019). Also, another key difference between the aforementioned strategies is their position in regard to epistemological and ontological beliefs. A quantitative research strategy often adopts a more natural scientific model and views reality as objective which makes it less interested in understanding interpretations and subjective experiences (Bell et al., 2019). On the other hand, the qualitative research approach aims to understand complex psychological issues by examining the interpretations of its participants and (Bell et al., 2019; Marshall, 1996).

The suitability of these two approaches depends much on the aim of the research (Marshall, 1996). This thesis, for instance, is concerned with studying several key factors of new technologies' role in the retail investor environment. The identified phenomena involve behavioral influence; subjective experiences regarding a set of social issues connected to the role new technologies play in the retail investor environment are of abstract, subjective, and tacit characteristics. Amalgamated with the study's purpose to explore people's experiences with technology in their everyday life, a qualitative research strategy was chosen. A quantitative strategy would be more suitable if the research objective involves studying a cause-and-effect relationship, which involves use of quantifiable data collection in order to prove statistical measures of significance for the results (Bell et al., 2019). On the contrasting side, a qualitative data collection and analysis is more concerned with gathering and evaluating perspectives, experiences, and behaviors, which has the

common denominator of being unquantifiable types of data. (Bell et al., 2019). As the research context involves a recently emerging phenomena that we wish to create more knowledge about, the qualitative research strategy was chosen partly because of the interpretivism nature of this research, but also because it is a favorable strategy to use in abductive research (Bell et al., 2019)

However, it must be acknowledged that qualitative research has its deficiencies, where the main concern in this particular study includes the researchers' subjectiveness enhanced by their personal experience's tangent to the research objectives, which in turn could influence e.g. the interpretation and analysis of the empirical data collection. As interviews were conducted as a measure of qualitative data collection, the risk also existed that respondents would provide biased and even false answers, which respectively may result in an overall low degree of validity of a qualitative study, in terms of e.g. non-generalizable conclusions and non-replicability of the study (Bell et al., 2019).

3.4 Research design

New technologies in the context of retail investing can be resembled as a general societal phenomena, involving multiple human and non-human stakeholders, e.g., different dispersed entities. As subjective experiences are in general unique and inconsistent from person to person, we aim to catch variations within a specific entity, e.g., different retail investors. Hence, this research objective aligns with the suitability of a cross-sectional research design (Bell et al., 2019).

According to Bell et al. (2019), cross-sectional research design in qualitative studies involves semi- and unstructured interviews as well as qualitative methods of data analysis, which further aligns well with the choice of a grounded theory approach for data analysis (see section 3.6). A strength of this cross-sectional design for our particular study is that it requires data to be collected at one point in time, which can provide a snapshot of the contemporary retail investment environment. However, this is also an infirmity as e.g., experiences may change from the point of data collection, where the researchers have opportunity to assess these, compared with an experimental study, where an interview objectives' state is evaluated in several phases (Bell et al., 2019). Hence, causal relationships may be difficult to prove.

3.5 Data collection

The data collection in this research consists of a combination of primary and secondary data. Primary data will be collected through a number of in-depth semi-structured interviews with retail investors and industry experts. The way primary data is collected in this research is consistent with

the chosen research design and the interviews will allow for a detailed investigation to be made about the researched phenom (Bell et al., 2019). In line with the abductive reasoning of this thesis, secondary data will be used in conjunction with empirical data to form an understanding of the subject. The secondary data will consist of academic articles for the theoretical framework, as well as reports and other empirical relevant material.

3.5.1 Primary data

Due to the complexity of the phenomena under study, interviews were considered suitable for the research to collect primary data, as it would allow for detailed encounters with the interview subjects (Bell et al., 2019). The grounded theory approach adopted by this research is especially suitable given the ambition to do in-depth interviews with individuals (Charmaz, 2014). Conducting deep and detailed interviews was essential in order to uncover the underlying aspects and motives of investment decisions amongst retail investors. Hence, the research approach influenced the decision on primary data collection and interviews were therefore chosen as the most suitable alternative.

Both semi-structured and unstructured interviews were considered appropriate for the grounded theory approach of this research, however, the choice was made to follow the logic of the latter. Semi-structured interviews were chosen mainly because it allowed the respondents to have a great deal of leeway in responding but still offer an element of structure (Bell et al., 2019). This structure allows the responses from the interviews to be compared and contrasted as a similar set of questions was asked. The interviews were conducted with a set of questions which were compiled into an interview guide which mitigated the risk of the respondents getting off topic during the interviews. Additionally, the semi-structured approach allowed the researcher to ask follow up questions or supplementary questions when needed (Bell et al., 2019). Therefore, more detailed, yet still relevant, answers could be extracted which arguably could have been more difficult if unstructured interviews were conducted instead. Hence, semi-structured interviews were chosen over unstructured interviews mainly because they offer flexibility but still allow for a structure to be followed which in turn allows for a comparison to be made (Bell et al., 2019).

3.5.1.1 Interview process

To accommodate the chosen semi-structured interview approach an interview guide had to be constructed to serve as a base for the interviews (Bell et al., 2019). The interview process of this thesis was divided into two parts, one block of interview consisted of experts in various fields related to retail investing and technology meanwhile the second block consisted of interviews with retail investors. Hence, more than one interview guide had to be constructed in order to accommodate the varying questions asked during the two separate interview blocks. For instance,

the expert interview guides varied quite substantially between interviews as it needed to be changed based on the expertise of the interviewee. For instance, when discussing the attributes of retail investors with Professor Tommy Gärling one set of questions were used, meanwhile a different type of question was used when discussing responsibilities with Avanza CEO Rikard (a complete list of the experts and their area of expertise can be found in the section “sampling”). As a result, the interview guide for expert interviews varied quite a lot and was adjusted based on the expertise area of the interview subject.

In contrast, the interview guide used during the retail investor interviews only differed slightly as few major alterations were made between them. The interviews followed a similar structure, firstly, an introduction about the topic, the purpose, and the role of the respondents, was explained. The purpose of this was to eliminate any confusion about what the data would be used for and how the respondents' answers would contribute to the research. Once the introduction had been made the main part of the interview revolved around the question posed in the interview guide, see appendix A. Questions were put into three categories which were based on the main themes presented in the theoretical framework of this paper, namely, *Stock market psychology*, *New technologies*, and *Corporate social responsibility*. Combined, these three categories of question allowed for an in-depth discussion to be held with the subjects which were grounded in theory but still allowed for new theories and themes to emerge as well. To end the interviews, the respondents were asked if they wanted to reiterate any answer they had given or if they wanted anything clarified regarding the questions asked.

Due to the current Covid-19 pandemic most interviews were held via the online platform Zoom to limit the need for physical interactions. The main advantage of conducting interviews online is the flexibility it provides in terms of allowing late adjustments to be made and to limit the need for travel (Bell et al., 2019). However, the downside of online interviewing is that it's more difficult to observe the behavior of the respondents given that body language and facial expression might not be as easy to notice (Bell et al., 2019), especially if no video camera was used. Luckily, most participants in this research were able to communicate by video which alleviated this problem somewhat. Furthermore, the interviews were mostly conducted in Swedish due to a preference from respondents to speak in their native tongue. Naturally, this presented challenges as expression or words run the risk of being lost in translation, however, measures were taken to ensure accurate translation by allowing respondents to make changes if they felt misinterpreted.

Respondents were also asked for permission to record so that detailed transcripts could be constructed. This allowed the researcher to revisit the interviews and extract the necessary information given by the respondents. Thus, emphasis could be put on understanding and asking follow-up questions during the interviews instead of focusing on taking notes (Bell et al., 2019).

This became even more important in the interviews that were conducted in Swedish as translating the transcript was vital in order for the data to be comparable to the other interviews. Also, the respondents were offered anonymity to make them more comfortable in sharing personal experiences.

3.5.1.2 Sampling

In contrast to sampling in quantitative research, the aim of qualitative sampling is not to pick a sample based on its generalizability towards the greater population (Marshall, 1996). Rather, qualitative sampling is more concerned about gathering data from a set of individuals who are likely to provide useful information to answer the research question (Marshall, 1996). Hence, qualitative research focuses more on understanding an issue rather than ensuring generalizability of the results. Additionally, sampling in qualitative research can be conducted in various ways, for instance, Marshall, (1996), explains three fundamental sampling strategies in qualitative research, namely: *Convenience sampling*, *Theoretical sampling*, *Judgment sampling*.

The first strategy is arguably the least costly strategy and involves selecting subjects based on accessibility, The second strategy describes an iterative process where theories from the emerging data dictates the selection of new samples, meaning that a new set of subjects are chosen based on the emerging theories from the first sample (Marshall, 1996). Lastly, judgment sample, referred to by Bell et al. (2019) as purposive sampling, is a process where the researchers actively select subjects based on how productive they are in answering the research question. The goal of purposive sampling is to select participants in a strategic manner, so that those sampled are relevant to the research question (Bell et al., 2019). The purposive sampling strategy is commonly used when the researcher wants to collect a sample that has a good deal of variety where subjects differ in terms of characteristics to each other (Bell et al., 2019). As this thesis is concerned with understanding the influence of technological developments on retail investors, a decision was made to include a varied sample to capture the variety of different retail investors. Hence, in line with the abductive approach of this research in combination with ambition to capture variety, a purposeful sampling strategy was pursued.

The sample used in this research was divided into two blocks as previously acknowledged. Participants in the expert category were interviewed to get an overall understanding of the subject at hand. These people were not retail investors, but rather more informed individuals who either had expert knowledge on the chosen subject or were important stakeholders in the industry (a list of participants and their role can be found below). The aim of these expert interviews was not necessarily to enable comparison to be made, rather their role was to establish a foundation of knowledge that could be compared and contrasted to the experiences shared by retail investors. This in turn led to a more holistic view of the researched phenomena where several perspectives

could be pursued which could have been difficult if only interviews with retail investors were conducted. Hence, the expert interviews played an important role in exploring specific knowledge areas which offered new insight and allowed for more perspectives to be considered.

Table 2: Expert participants

Name	Date	Role	Organization	Format	Duration
Tommy Gärling	5/3 - 2022	Emeritus Professor Behavioral finance	Gothenburg university	Zoom	60 Minutes
Thommy Eriksson	11/3 - 2022	PhD Digital Design	Gothenburg university/ Chalmers	Zoom	60 Minutes
Per Nordkvist	24/3 - 2022	Deputy head of banking	Finansinspektionen (Financial Supervisory Authority)	Zoom	40 Minutes
Rikard Josefson	13/4 - 2022	CEO	Avanza	Zoom	50 Minutes
Alexander Gustafsson	13/4 - 2022	Investment coach	Nordnet	Zoom	50 Minutes

The second block of interviews were conducted with people who define themselves as retail investors according to the delimitations in section 1.4. In line with purposive sampling, inclusion and exclusion criteria were established to ensure the sample was relevant to answer the research question (Bell et al., 2019). For instance, one sampling criteria used dictated that participants had to align with the characteristics of retail investors. It was important for the researcher to have a sample that was somewhat knowledgeable about financial markets and most importantly was participating in it. Therefore, one sampling criteria used in the research was that participants had to have some investment in financial markets. Also, the participants had to be active in the market and had to at least manage their portfolio on a quarterly basis. Furthermore, an aim of this research was to include a varied sample that consisted of individuals in different age brackets, stages in life, social and economic status. Thus, subjects were chosen partly based on personal characteristics to

ensure variety, which is coherent with the purposive sampling approach adopted by this research (Bell et al., 2019).

Other than that, no other criteria were used in the sampling of participants, as it could dismay people from participating in the research. This is in line with the chosen purposive sampling approach which dictates that the units of analysis are selected in terms of what will allow the research question to be answered (Bell et al., 2019). Also, as a measure of the grounded theory approach, interview transcripts were continuously analyzed as to provide flexibility in evaluating the proposed sample of participants (Charmaz, 2014; Bell et al., 2019). Furthermore, the number of retail investor respondents in the research was dependent on the amount of new information each new respondent contributed, hence a process of theoretical saturation was applied. This process, which is a key element in the chosen grounded theory approach, entails that researchers carry on collecting data until a category has been saturated with data (Bell et al., 2019). As a result, six interviews with retail investors were conducted as the researchers felt that after coding the sixth interview no new codes were generated and no new theories emerged. A list of all the retail investor participants can be found below.

Table 3: Retail investor participants

Name	Date	Language	Occupation	Form	Duration
R1	28/3 – 2022	Swedish	Law student	Physical	32 Minutes
R2	31/3 – 2022	Swedish	Construction worker	Zoom	21 Minutes
R3	1/4 – 2022	Swedish	Business student	Zoom	23 Minutes
R4	5/4 – 2022	Swedish	Accounting assistant	Physical	21 Minutes
R5	5/4 – 2022	Swedish	Store worker	Zoom	32 Minutes
R6	8/4 – 2022	Swedish	Office worker	Zoom	26 minutes

3.5.2 Secondary data

In combination with the empirical data gathered from the interviews, secondary data sources were used in to form an overall understanding of the researched phenomenon. The secondary data used in this research were compiled into the theoretical framework whose main purpose was to examine

the current literature on relevant areas concerning retail investing and technology. The literature consisted mostly of articles and journals found via scientific databases online. For instance, Google scholar and GU super search was used extensively by the authors to find relevant articles on the researched topics but other search engines such as Web of Science and Science Direct were also used when necessary. Once relevant literature had been identified, it was categorized and compiled into different blocks depending on its topic.

The initial research area considered mostly literature about the retail investor and its role in contemporary society. This was considered an appropriate starting point for secondary data collection as it allowed the researcher to understand how retail investors act and what may influence their behavior. Keywords used during this step of the secondary data collection process were words related to *retail investors*, *risk behavior*, and *stock market psychology*. Later, once a theoretical foundation had been established about the retail investors, other areas of interest were explored. For instance, the effect of digitalization and the emergence of the digital economy was explored in conjunction with primary data collection on the same topic. Hence, in line with the abductive reasoning of this thesis, this section was heavily influenced by the collection of primary data as theories and literature were chosen based on the topics brought up during interviews. Lastly, articles regarding CSR theory were reviewed which focused on establishing well-known CSR theories which could be applied and contrasted to the empirical findings of the interviews. Thus, once again the choice of literature and the empirical data from the interviews highly influenced each other and allowed this research to compile theories and adjust keywords according to new themes that emerged throughout the process. A list of the most used keywords is summarized in figure 4 below, each main theme of the theoretical framework section has its own column of keywords used.

Stock market psychology	New technologies	Corporate social responsibility
<ul style="list-style-type: none"> • Retail investing • Risk behavior and attitudes • Anxious investors • Herding behaviour • Rationality • Mobilization of masses 	<ul style="list-style-type: none"> • Digital economy • Digitalization • App-ecosystem • Persuasive technology • Gamification • Delayed gratification • Social media and investing 	<ul style="list-style-type: none"> • CSR theory • Stakeholder theory • Shareholder theory • Responsible investing • Gambling • Responsible enterprise

Figure 4: Summary of keywords

Several aspects were considered when choosing which articles to use as, for example, the impact of digitalization and new technological developments is constantly evolving and thus there was a preference for recently published articles. However, the articles used to describe the behavior of retail investors and their physiological aspect were significantly older as these theories were argued to still offer relevance. For instance, prominent studies on risk behavior were often several decades old but it was argued that these studies still offered insight into risk behavior even today. Thus, this thesis did not adopt a strict age limit on the articles used but instead opted to choose literature based on its relevance to the research area. However, when choosing articles to describe new technologies, digital economy, social media etc. there was a strong preference to use newer studies given the drastic changes that have happened in the last 10 years. However, as this area is constantly developing the amount of research was sometimes found to be insufficient and therefore some sources that were deemed to still be relevant were used even if they were written more than 10 years ago. Lastly, the articles used in this thesis were overwhelmingly peer reviewed, however, a limited number of non-peer reviewed papers were also used when there did not exist a wide range of studies on a specific topic. A summary of our inclusion and exclusion criteria can be seen below.

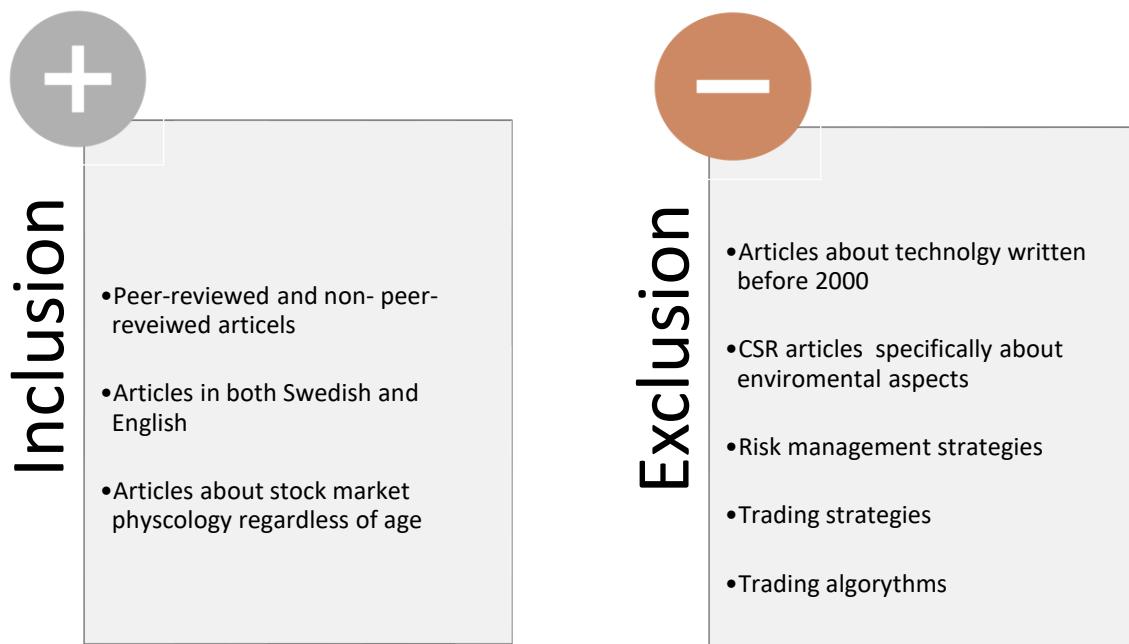


Figure 5: Inclusion and exclusion criteria

3.6 Data analysis

Grounded theory is a suitable method for analyzing data when the main goal is generation of new theories, which aligns with the objectives of this study (Bell et al., 2019). It was deemed to be a suitable approach in this thesis as it enables the researcher to reach the creation of new theory more accurately (Charmaz, 2014). It is also an approach which is favorable in various phases of the qualitative research, not least for conducting in-depth interviews and accurate data analysis (Charmaz, 2014). Grounded theory was therefore considered applicable to the research objective as it involves apprehending intersubjective experiences from retail investors.

As part of this grounded theory approach, a thematic analysis was deployed by this research to compile the large amount of data produced by the semi-structured interviews. A thematic analysis describes a process of constant identification and organization of patterns, or themes as they often are referred to, in the data set (Bell et al., 2019). The identified themes are then used to answer the research question and enables the authors to build an understanding of the researched phenomenon (Bell et al., 2019). However, worth acknowledging is that a thematic analysis is not a process of specified procedures, rather, it can bear several meanings as there is yet a consensus about what defines a “theme”. Some argue that a theme is merely a code meanwhile others define it as a cluster of codes, this research however, will consider the second interpretation, namely that a theme is a cluster of codes and align with the thoughts of Bell et al. (2019).

The coding process followed the reasoning of Gioia et al. (2012) where a systematic presentation of first-order analysis in terms of codes and second-order analysis in terms of researcher-centric concepts was presented. The qualitative data analysis tool ‘Atlas.Ti’ was used for the coding process. Gioia et al. (2012) explain that a coding process should start with a first-order analysis that tries to adhere faithfully to the expression and terms expressed by the respondents. This resulted in large number of initial first-order codes as the strategy of line-by-line coding, where every sequence of the interview transcripts was assigned a first-order code (Charmaz, 2014), was applied. The codes were mostly based on repetitive talking points brought up by the interviewees which Bell et al. (2019) argue to be the most important criteria for establishing patterns in the data set. After the initial coding process, the first-order codes were grouped to form a more manageable number of second-order themes, allowing the data to be organized further (Gioia et al., 2012). Lastly, in order to make the data more comprehensible, a data structure was constructed which is an essential part of the grounded theory approach, as it shows the dynamic relationship between the discovered concepts (Gioia et al., 2012). The data structure follows the logic of Gioia as first-order codes were constructed to form second-order themes, which were finally compiled to aggregate dimensions (Gioia et al., 2012). Eventually, three aggregate dimensions were created by eleven themes. The complete data structure can be found in appendix B.

3.7 Research Quality

In quantitative research, quality is often discussed in terms of reliability, replicability, validity, scalability etc., however, it is not as clear on which basis qualitative research can be evaluated on as the aforementioned terms mostly relate to criteria that are hard to use on qualitative research (Bell et al., 2019). For instance, even though validity is important in qualitative studies, the meaning of the term must be altered as it carries a connotation of measurement, which is not a concern of qualitative research and thus offers limited value (Bell et al., 2019). Arguably, one way of assimilating reliability and validity into qualitative measures is to downplay the role of measurement to make it more appropriate. Another approach proposed by Lincoln and Cuba (1985) is to assess the quality of the research based on trustworthiness and authenticity. In order to do so, qualitative works should consider four criteria, *Credibility, Transferability, Dependability, Confirmability* (Lincoln & Cuba, 1985). These four criteria were used to determine the quality of the research presented by this thesis; these aspects will be discussed in detail further below.

The first aspect to consider is **credibility**, it concerns the presentation of findings which are rooted in information drawn from the data and ensures that the respondents' viewpoint was represented correctly in the analysis. It's common in business research to reflect on the plausibility and legitimacy of the presented results as this will affect the acceptability amongst readers (Bell et al., 2019). This thesis acknowledged the importance of instilling credibility and therefore made efforts to alleviate the problem by incorporating respondent validation. Bell et al. (2019) describes respondent validation to be a process where researchers provide participants with an account of his or her findings. For instance, in this thesis, respondents were offered to read the empirical findings as well as the transcripts of the interviews so that they could notify if something had been misinterpreted. By doing so, the researcher ensured that what the respondents had shared during interviews was representative of their true experience and that the empirical findings corresponded to that reality.

Another important criterion as argued by Lincoln and Cuba (1985), concerns **transferability**, or generalizability which it sometimes is referred to, which concerns to what extent the results of the research can be transferred to another situation or setting (Bell et al., 2019; Anney, 2014). In general, qualitative research is more concerned with depth rather than breadth and as a result tends to have findings that are contextualized. Therefore, ensuring generalizability in qualitative research can be difficult and may not be a top priority, however, Lincoln and Cuba (1985) argue that it should not be ignored because of that. Rather, qualitative research should produce rich accounts and details which provides the opportunity for others to make judgments about the possibility of transferability (Bell et al., 2019). Naturally, this research suffers from the same fallacy as other qualitative work in terms of enabling transferability. However, offering information regarding

interview subjects, data collection methods, analysis processes, interview transcripts etc. can increase transferability somewhat (Shenton, 2004). Also, it should be noted that this thesis investigated the effects of digitalization in the context of retail investing, however, it is suggested that some of the findings could be transferred to another setting given the large impact digitalization has on contemporary society which in turn allows for some transferability of results.

Thirdly, **dependability** refers to the extent of description of the phases in a study, for instance, how descriptive the problem formulation, interview process, sampling, analysis etc. are (Bell et al., 2019). It allows for a type of auditing approach where complete records are kept of all the stages in the research which in turn can facilitate transferability by enabling others to replicate the process (Shenton, 2004; Bell et al., 2019). An ambition of this thesis was to describe and argue for the choices made and present the reader with an insight into the thought process of the research to increase dependability. Also, an effort was made to ensure readers had access to the data used in the analysis by for instance providing interview transcripts which could increase dependability.

Lastly, **confirmability** concerns the impact of the researcher's own imagination or personal values on the interpretation of the results of the study. It's important to acknowledge that complete objectivity is impossible in business research even if the intention of the researcher is pure (Bell et al., 2019). Therefore, it was important in this research to try to be objective and not inflict personal values or theoretical inclinations which could have an impact on the research or its findings (Bell et al., 2019). Also, admitting to our own biases was important as well as admitting weakness in our methodological choices (Shenton, 2004). Therefore, by acknowledging our own limitations and biases, the confirmability of this study could be increased.

3.8 The relationship between methodology elements

Throughout this methodology section, the proposed methodology choices have been thoroughly motivated with respect to the nature of the research, where each specific choice of method in addition has been coherently related to other methodological choices. For instance, the overall chosen qualitative *research strategy* is enabled by a grounded theory approach towards *data collection* and *data analysis*, as a measure of incorporating an abductive research approach. With regard to this, the *research design* was chosen to be of a cross-sectional type, which is suitable for e.g., conducting in-depth interviews as measure of the grounded theory approach, which is connected to the iteration process of grounded theory within *data collection* and *data analysis*. In *data collection*, literature reviews are also conducted as a measure of theoretical sampling (part of grounded theory), in order to be used in the thematic analysis within *data analysis*. The relationship between methodology elements is summarized in the figure 6 below.

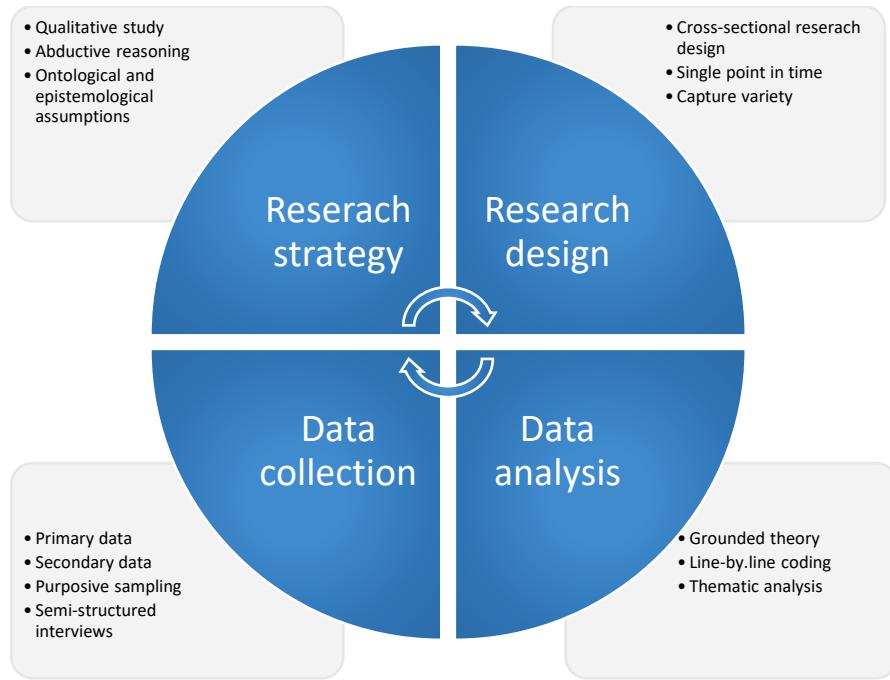


Figure 6: Relationship between methodology elements

4. Empirical findings

The following sections contain empirical findings from the conducted interviews. The first two sections aim to consolidate findings oriented in mainly answering the first research question, while the last main section concerns answering the second research question. Sections and subsections follow the aggregated dimensions and second-order themes correspondingly and are structured to follow an order similar to the theoretical framework.

In greater detail, section 4.1 aims to capture retail investors' perceptions of their surroundings, while section 4.2 concerns retail investors' personal habits and decision-making process. This distinction is necessary as the respondents' attitudes and perceptions did not solely originate from their own decision-making process and investing habits, but rather from being exposed to various impressions, where some impressions eventually resulted in a decision. Section 4.3 concerns explaining the findings in 4.1 and 4.2 in terms of responsibility from a stakeholder perspective. Moreover, the term "respondents" is used when interview findings concern retail investors as a group, and referred to as "R1", "R2" correspondingly when mentioned in an individual manner. Experts and industry interviews are always referred to with name and title.

4.1 The new information landscape

The contemporary retail investor can easily access any type of information on demand, as well as passively being exposed to it, especially in the first encounters with investing: Respondent R2 was recommended by a colleague to start investing while R5 and R3 first was influenced by their family. When R1 lost his part time job due to the beginning of Covid-19 pandemic, he initially searched for basic information regarding personal finance and quickly noticed that even the most basic information funneled him to the area of investing:

“It always leads to; ‘You should always invest what’s left’. Every source today tells you that you should invest any money that you have.”

When a person takes the step into becoming a retail investor, a premise is established to access different types of investment-related sources of information, each with its own key characteristics. The respondents mainly identified social media such as Facebook, Instagram and Twitter, Reddit and YouTube as heavy sources of information; according to R1, the information flows’ everywhere.

4.1.1 Possible hidden agendas on social media

Although financial institutes like stockbrokers also have their social media channels, the respondents mainly concentrated their experiences concerning information hosted by ordinary retail investors like themselves. R3 thinks it is interesting to see how people with interest in a certain stock exchange ideas in online communities, for example Discord. Some retail investors have taken their social media engagement one step further by becoming public figures with investment related content. R5 describes podcasts where different publicly traded companies are discussed in terms of fundamental factors that can make the stock rise in value, while R1 follows YouTube channels with similar characteristics.

Hence, this type of information is mostly perceived as tips and recommendations, which the respondents have mixed feelings about. R3 believes that platforms and communities where people can exchange ideas are important for learning and gaining more knowledge, while at the same time highlighting cautiousness regarding potential market manipulation:

“At the same time, you have to be a little careful as you never know who is sitting on the other side. It could be someone having a less good intention with what they write.”

The picture of market manipulations is shared among more respondents. R2 explains the phenomena of manipulating a stock’s price as “pump & dump”, implying that some people act in

collusion by buying shares at a low price, hyping the stock on social media, and later initiate a profitable sell-off when the masses have “pumped” the stock price to a certain price. As a result, the price rapidly declines (“dumping”), causing the people falling for the scheme to lose money, or as R2 calls it, “burn themselves”. A similar problematization is given by R1 who highlights additional dimensions of people’s hidden agendas:

“Today, you hear from everywhere that you should buy this or buy that. And you hear it from people who show how much they have achieved with their investments, but who always make money on their recommendations, one way or another.”

Other incentives that finance profiles on social media have is to get people to use their affiliate links in order to e.g., receive bonuses when signing up at a certain broker, which according to R1 is highly inappropriate:

“They are deliberately aiming for a target group that should not invest without reading a lot more before risking money.”

However, R1 does not think traditional finance related newspapers are much better in objective reporting; “They are either super positive or super negative”, implying that people may act on such info.

4.1.2 Social media in diffusing trends

Tips and recommendations flowing on social media do not always exclusively aim to benefit at the cost of poorly informed retail investors. In some cases, the aim is to outplay institutional investors: R2 observed how retail investors coordinated to “short squeeze” the GameStop stock on Reddit. R2 further emphasizes the magnitude of social media in leveraging the power of herds by commenting that “this would probably not happen if social media did not exist”.

However, R2 does not believe that monetary gains were solely the driving power of the outcome. Instead, he portrays the contemporary climate of retail investing in terms of the financial markets withgoing a shift:

“It feels like after crypto as well as these meme stocks like GameStop and stuff, the stock market is now for a completely new audience. There are more young people joining because when something is trending, young people want to be there and see what happens. It is a bit like that with GameStop and it is more like, it is more than just money; it becomes a cultural thing.”

The emergent trend of GameStop and meme stocks is also noticed by R6, who with a slight hint of irony reasons that young people do understand the stock markets in some senses, considering all their frequent “panic buying and selling”. Moreover, R6 describes Elon Musk, CEO and founder of Tesla, as a “memelord” who posts “all kinds of weird stuff” on social media, implying that people do not necessarily invest based on company fundamentals. Rikard Josefson, CEO for the Swedish stock broker Avanza, thinks that digitalization has sparked new interest in stocks amongst younger people since the IT-bubble burst in the beginning of the 2000’s. Apart from the simplicity inherent in buying stocks today, he also emphasizes access to information, curiosity and the ongoing trend of Americanization as potential factors for this development and exemplifies by mentioning that Tesla was the most bought stock on their platform during a limited time. However, he disagrees that younger people would be more prone to hold assets associated with more risk by arguing that Avanza customers invested in GameStop on average bought 3 700 SEK worth of GameStop shares, implying that it is a relatively small amount.

4.1.3 Stock brokers as a source of information

The stockbroker such as Avanza and Nordnet also has a social media presence. Rikard Josefson, CEO of Avanza, describes that their content aims to inform and educate the investor on topics such as what investing actually is, for example by contrasting the differences between investments and speculations:

“If you buy a stock that rises 100 percent based on a tip you got, you have not been a good investor. You rather speculated and happened to win.”

R2 says he has listened to Avanza’s podcast and perceives topics regarding the risks with investing as helpful. R4’s experience with Avanza’s podcast is that she has gained tips and inspiration regarding stocks that she otherwise would not have heard of, for example in an episode where the electric automotive industry was analyzed. She also values that the podcast hosts seem knowledgeable.

The stockbroker platform itself is identified as another essential host of various types of information by the respondents. R6 sometimes checks Avanza’s performance lists, which is a set of lists ranking stocks and mutual funds based on top gainers and top losers in terms of price. R6 perceives the lists as tips for example to buy a mutual fund that has performed well during the year. He also checks “today’s winner” and “today’s loser” in order to buy a dip or to keep an eye on a potential “rocket”. Both Avanza and Nordnet, host information in direct relation to the corresponding stock. R3 expresses appreciation that he can easily access press releases from companies, as they are instantly published in a news flow at the company’s stock page in stockbroker application. At the same time, R3 experiences that not all types of information

published in the news flow is objective, explaining that companies own press releases are subject to strict regulations. He refers to news written by different financial institutes and perceives them as recommendations, as they are often characterized by a target price for the actual stock. R3 problematizes these kinds of news as misleading even for knowledgeable retail investors as himself:

“If I do not understand the implication of when Carnegie [investment bank, edt. note] changes a target price from 80 to 110 SEK, then some other individuals may perceive this as ‘it is going up to 110 SEK’. I think the problem lies there.”

Rikard Josefson, contrasts that Avanza works to improve the quality of the content published on their own information flows, as fact-checked information may be more valuable to the users rather than “some joker’s opinion on Twitter”.

4.1.4 Information's role in democratizing investments

Admittedly, the wide variety of available information is both a curse and a blessing according to some respondents. R5 characterizes the contemporary retail investment environment with the presence of both “good information” and “bad information”, emphasizing that the challenge lies in determining what is good and what is bad. Consequently, he thinks it is great that index funds have been recognized as an incredible way of passively investing, supposedly decoupling the retail investor from active information seeking. R1 and R2 believe that access to information has democratized investments as it has allowed regular people to participate in the markets, hence creating something that can be resembled as a people's movement. Alexander Gustafsson, investment coach and public figure for the stockbroker Nordnet, is of the same opinion, describing that qualitative financial information has historically been reserved to people with the right network or people of wealth. He exemplifies by referring to stock analysis with target prices made by institutions, similar to the one's R3 previously criticized:

“But in the past, it (information) [edt. note], was behind closed doors for ordinary investors. Now, it is more open and democratic, and we see an emerging interest in seeking information, because you want to know what everyone else is acting on.”

4.2 Modern retail investor behavior

So far, the empirical evidence in section 4.1 has desiccated retail investors' perceptions and experiences of their surroundings in terms of illustrating an emergent contemporary information landscape. This section tangents the previous section by aiming to immerse in their experiences

and perceptions from a behavioral perspective, particularly by capturing the decision-making mechanisms through interaction with technological systems when exposed to information.

4.2.1 Poorly informed decision making

Information and impressions originating from podcasts and social media are in some cases passively assessed, while in other cases, it plays a significant role in the retail investors' investment decisions. R5, who initially invested in index funds, is currently fully invested in two stocks, as a result of change in his risk appetite. His investments are referred to as "underdog stocks", which were analyzed and recommended as "cases" on a podcast and social media. R5 trusts the fundamental "triggers" that will potentially make his investments profitable, although having conducted a limited amount of research himself, implying that knowledge barriers and speculative scenarios makes the information difficult to fact check:

"I want to understand the case motivating the price [target price of the stock, edt. note], but as in this situation, the case relies on a legal process, and I do not have much legal knowledge. I still try to think about how much I invest."

Similarly, it is widely believed among other respondents that a general problem with modern retail investing is that people do not know what they invest in. R3 have previously made investments of the same nature as R5, which according to him "often ended in tragedy". Although acknowledging the broad availability of both information and educational content, R2 as well as R6, believe that few people are prone to do the research. Hence, R2 considers himself "too poorly informed to actually be investing" as a result of being uninterested in researching, resembling his and other retail investors' decisions as probable gamble rather than actual investing:

"It feels like I gamble a little more rather than having a serious saving, and I think many can relate to that, regardless of if they think so themselves or not. There is a lot to read about if you are going to do this."

Moreover, information and knowledge deficiencies are also present regarding the asset types available on stockbroker applications. Undoubtedly, several respondents associate modern stockbroker applications with fast and easy processes in gaining access to the markets and buying the first stocks, as well as more complicated products. Perhaps a bit *too* easy according to some respondents, referring to the set of questions a user must answer and pass prior to buying assets such as financial derivatives and regular stocks. As the nature of the tests is multiple choice questions, R1 easily passed the "quiz" for a leveraged product, simply by using the exclusion method. In reality, he did not even know the implication of holding a leveraged product when he accidentally bought it, which caused his position to get liquidated due to erosion. Although R1

eventually became knowledgeable the hard way, he still perceives the quizzes insufficient due to the distinction between theoretical knowledge and actual trade with leveraged products. This is implied by R5, who suggest that it is difficult to understand the information regarding how a specific product actually works.

4.2.2 User-experienced centered broker applications

Another aspect of the respondents' reflections and experiences regarding their perceived behavior is derived from interacting with the technology itself. A common denominator is that all respondents mainly manage their investments through modern, user-experiences centered brokers such as Avanza and Nordnet. The basic rationale for choosing these brokers involves factors such as instant buying and selling, access to news and information in the broker app, as well as lightning deposits. R6 contrasts the differences to his traditional bank SEB:

“I have tried my bank SEB, and it was terrible. A purchase of a foreign stock took on average three days and I thought it was completely bizarre that it would take so long. So I switched. I got a tip about an Avanza, or I think I heard it on social media.”

R5 who also uses Avanza suggests that a reason for its widespread popularity may originate in Avanza being the first user-friendly app, although clarifying that the competitor Nordnet have improved a lot throughout the years. Accordingly, R2 experienced discomfort when navigating in Nordnet as a result of already familiarizing himself with the navigations Avanza.

Despite perceiving Avanza's interface as fresh and modern, R4 also appreciates that Avanza has more functions compared to her traditional bank. Functions such as dashboards and interactable graphs provide insights for the retail investor to track returns and portfolio development, which contributes to the user experience. R3 implies that these functions facilitate reevaluation and management of his current positions for him to reach his goal of “beating the index”. Tommy Eriksson, doctor in digital design, perceives similarities between finance applications and exercise applications, as both make use of information visualization and statistics in order to quantify and measure progress. Tommy refers to this type of deliberate design choice as gamification and resembles its effectiveness in influencing a certain behavior to social media, for example when a user is exposed to another user's progress. Hence, Tommy is ambivalent when reflecting on the implications of gamification: He perceives gamification useful as it can influence sound decisions, for example pursuing a user of an exercise app to exercise, while at the same time perceiving interfaces that trigger the user in taking chances and risk as problematic, particularly referring to online casinos.

Most respondents are unaware of gamification as a concept; however, several respondents reflect that their investment habits would probably look different in a scenario where modern user-experience centered brokers would not exist. This is exemplified by R6, who anticipates he would do less frequent investments through his regular bank application which he previously mentioned as inferior from a user experience perspective - with due to its inferior in user-experience. According to R3, it could be a positive thing as it would mitigate rushed decisions.

4.2.3 Technology in facilitating non-fundamental decision-making

When fundamentals are poorly assessed or neglected, decisions may originate from a non-fundamental basis instead, for example by taking advantage of market inefficiencies in order to make arbitrage, as described by Tommy Gärling, Emeritus Professor in behavioral finance. This is commonly referred to as trading and has become easier for retail investors to engage in due to the access that modern brokers provide, as described in the previous subsection. However, R6 believes that stock trading is solely a “glorified form of gambling”, referring to his trading attempt the time he went “all-in” on Tesla-stocks. Similarly, R1 does not perceive any differences with his first investments and going to a casino when reflecting on his impulsive and uninformed decisions, causing him to lose a lot of money. By contrasting a scenario where he would win, he concludes that he “probably would feel like a genius” and continue to rapidly risk more money as incentives for properly learning investments would be low, emphasizing the risk of eventually developing something comparable to a drug addiction.

In the extension, both trading attempts and genuine intentions of investing can be subject to non-fundamental sources of influence; instincts and emotions. Fear, nervousness, and anxiety are common words used by the respondents in describing emotions connected to their investments. For example, when Tesla's share price declined 20% due to a stock split, R6 panicked and sold all his Tesla stocks. Some days later, he proceeded to re-buy the stocks, however, at a 40% premium compared to his selling price. Tommy Gärling, professor emeritus in behavioral finance, conceptualizes such investment behavior in terms of the disposition effect:

“It's about selling winners earlier than selling losers. There are reasonable psychological explanations for this. If the prices go up, you want to take home a profit, if the price goes down, you hope that it will go up again.”

However, making costly mistakes can sometimes be positive in terms of learning from them. As a result of acknowledging and processing his emotional incapability in coping with the stress inherent in solely holding highly volatile stocks such as Tesla, R6 began investing in mutual funds and “low-risk stocks”. “In the end, you will understand that you can burn yourself, this is not a

game” explains R3, implying that retail investors will eventually be forced to be more thoughtful in their decision making.

Although learning from mistakes is considered as a natural step in shifting from speculations and gambling towards becoming an investor, some respondents still experience struggle to decouple their emotions from their investments. R4 tries to continue being long term when experiencing fear connected to market declines during the Covid-19 pandemic, while R2 and R1 felt an urge to constantly track the development of their respective portfolios, implying that being exposed to real-time price fluctuations in combination with news reporting made them anxious. As a result, R2 skipped one month of planned investing, while R1 seized the opportunity to buy more, declaring that “crisis is the best time to invest”.

To not get emotional or feel tempted in buying every dip when portfolios decline in value, the respondents have successively developed different coping mechanisms. For example, R6 now only checks Avanza once a day, although previously enjoying the element of checking the application several times every hour during Tesla’s bull run. R5, who solely invested in two stocks, tracks the real-time development of his stocks through other applications, which makes him psychologically relieved when not viewing his own portfolios during red days. Tommy Gärling (beh. fin.) is not too enthusiastic of this tactic, emphasizing that decisions based on mood and emotions may not always be exclusively irrational by explaining the mechanism and implications of myopic loss aversion:

“There are two opposite tendencies. One is that when the market goes down or stalls, you do not check your stocks, but when it goes up, you do. This means that you do not balance your finances.”

Tommy further nuances the concept of emotions within the investment sphere by challenging the normative narrative of institutional investors as rational, emphasizing that decisions based on mood and emotions may not always be exclusively irrational, e.g., in cases where fear is involved.

4.3 Responsibility within retail investing

So far, the empirical evidence in section 4.1 and section 4.2 has dissected the influence of the emergent contemporary information landscape and explored retail investors' perceptions and experiences in terms of contemporary retail investing behavior. This next section will complement the past findings and immerse into a discussion about the responsibilities of stakeholders in the financial markets and their role in the current investment climate. The aim is to explore how

stakeholders experience responsibility and what type of responsibility actors can be assumed to have.

4.3.1 Technology Stakeholder responsibility

Recent technological developments have made the financial market more accessible than ever before which is something that R6 and R7 regard as a positive direction for the industry. The increased accessibility made possible by new technologies is something Per at Finansinspektionen perceives as a net positive for most users, however, it is important to acknowledge that it may be damaging to some investors. This highlights the importance for stakeholders to consider the ramifications of technology use and consider what kind of responsibilities the accessibility they offer may entail. This is something Avanza has reflected on as exposure to e.g., real-time data, notifications, and graphs through our phones present a challenge in terms of keeping investors from buying on impulse. However, Avanza believes their main responsibility lies with promoting long-term strategies and diversification to combat such behavior, rather than limiting accessibility:

“Our whole approach is that our customers, in peace and quiet, should visit us, acquire knowledge, read on and when they feel ready, invest.”

The increase in accessibility seems to have made investing more available than ever, however R6 expressed concern about how people use this newfound accessibility to make investment decisions as he, as previously mentioned, considers the current investment climate to resemble “glorified gambling”. R4 also expressed concern about how gamification features may affect individuals who are more receptive to gambling behavior. This concern is shared by Avanza as the inclusion and development of gamification features on apps and platforms is somewhat worrisome according to Rikard at Avanza:

“There is a lot that is good about this development, but there is a danger. I have been quite active in this issue and I am a bit worried, Avanza is a part of it and we have that debate internally, but there is a concern that saving is becoming a deviation of the gambling industry, so the whole gamification trend I think is very dangerous.”

Furthermore, Tommy Eriksson, doctor in digital design, expressed concerns about current gamification trends as websites and apps can be designed to trigger risk taking amongst users and use push up notifications to accumulate additional sales, something often used by online casinos. A huge part of the responsibility therefore falls on the designers of the technology and the platforms using it according to Tommy:

“Online casinos are a good example where you use design to trigger more risks. You get caught up in some kind of ethical problem quite quickly. So, I absolutely think that the designers have a big responsibility there”

Similarly, Alexander Gustafsson at Nordnet expressed a concern regarding the worrying elements of gamification and instant accessibility, stating that the excessive gamification, which can be seen in other countries, is not preferable. However, Alexander at Nordnet also highlighted potential benefits of sound gamification as it has increased interest in investing.

“Reasonable gamification that makes you get involved can be positive, a lot of people today have an interest in saving, they literally think it's fun to save, it's fun to see that money machine grow”

This is partly attributed to gamification and the ease of access to investment enabled by modern technology which has sparked interest among investors, says Alexander at Nordnet. However, the representatives at both Nordnet and Avanza believe they have a responsibility, especially considering the recent influx of new investors, to help their customers make informed decisions, and avoid excessive gamification which may trigger unnecessary risk behavior.

4.3.2 Stock broker responsibility

The digitalization of financial markets has made online brokers such as Avanza and Nordnet notably more popular in recent years as they are miles ahead of traditional brokers in terms of accessibility according to R6. This begs the question of what type of responsibility brokers of financial instruments have towards its customers and users in the digital era. R3 highlighted the importance for brokers of financial instrument to take responsibility:

“I believe that many of these platforms, for instance, Avanza, have a great responsibility to be an informant of what it means to trade with financial instruments”

Similarly, R1 stressed the importance of broker firms to inform about what they are actually selling, stating that oftentimes people don't fully understand financial products and trading platforms therefore have a responsibility to inform. Also, given the “high risk” stock trading can entail, R3 argues that firms such as Avanza, or Nordnet, should have an obligation to work actively with informing users about the risks associated with trading. The complexity of financial products, and its associated risks, is one of the reasons Avanza is working with educational tools for its customers according to Richard, CEO of Avanza. He believes that one of the core responsibilities of Avanza is to inform, inspire, and educate its users while simultaneously highlighting the risks associated with investing. Alexander at Nordnet shares this view on responsibility, he further explained that

he, and the company in extension, feels a great deal of responsibility towards its customers to acknowledge the risks, he states:

“It is important to highlight the risk for investors. There is a big difference between investing in a large cap company that has been on stock exchanges for over 20 years and investing in a completely new company that was started three years ago, but once again this is a task for us at Nordnet to illuminate, educate and inspire our customers.”

The need to inform is also something Per Nordqvist at Finansinspektionen highlighted as they feel there is a need to strengthen information requirements so that customers can make more educated decisions on the financial markets, given the complexity of the products. One way Avanza and Nordnet works with informing its customers is by offering information directly on their website or app, so that customers can gather information regarding particular stocks or funds without leaving the application. Whilst this has been appreciated by R1 who regularly gathers financial information on Avanza, R3 instead expressed a concern about how the accessibility of information may affect certain people, a concern shared by Tommy Eriksson who argues that more information is not always better. Alexander at Nordnet, however, is skeptical towards this sentiment and instead argues that it's better to have the information easily accessible than keeping it behind doors:

“It is better for the information to be available to everyone, the right information, because that has not always been the case. Historically, information has been reserved for those who have contacts or wealth. Now it is more open and democratic”.

Alexander also explained that there is an incentive for platforms such as Nordnet to provide accurate information and educational tools to their customers as it can increase their longevity on the market. If people are ill-informed or uninformed then it's likely they will burn themselves out and exit the market, which is not good for the investor or for Nordnet. Thus, by informing and educating its customers a “win-win” situation can be achieved as investors manage to stay longer on the market which in the end also makes them better customers according to Alexander.

4.3.3 Information-oriented responsibility

Another important aspect of responsible investing in the modern era is the influx of information through digital means, namely social media. It has previously been established that respondents, to a large degree, use social media as an information source, however, less has been observed regarding the responsibilities of information givers, or “financial influencers” as respondents often refer them as. R4 have noticed that social media profiles that show off their portfolios and publish information that can be perceived as recommendations often have a disclaimer that their ideas are not buying recommendations which acquits them from legal responsibilities. Similarly, R1

acknowledges that financial influencers do in fact have some legal responsibility not to manipulate but also states that they have a moral responsibility towards others as well. R6 further expressed frustration regarding the lack of responsibility and accountability for people making financial tips online:

“On Tik Tok there are a lot of videos about new cryptocurrencies, completely unknown currencies. And then someone can urge others to buy some useless crypto or stock and then they pump it up, and those who gave the tip makes a fortune, such behavior should be incriminating”

However, as previously mentioned, it's not just individual financial influencers that use social media, stockbroker firms also engage in information channels such as blogs, pods, forums, and news feeds. Both R4 and R5 single out Avanza to have a distinct responsibility to ensure that the blogs and forum posts on their platform are fact checked. However, it may be difficult to check every post according to Alexander at Nordnet, and it may not be a goal either. Similarly, Avanza also reflected on its responsibility over the information shared on its forum, something they admittedly have had problems within the past. To combat this, Avanza will now require identification on the forums which may help to alleviate some of these problems. Nevertheless, both Nordnet and Avanza believe their main responsibility is not to be a “fact checker”, rather, their respective companies' main responsibility is to educate investors sufficiently in order to differentiate between information as well as encourage people to do their own research, Richard at Avanza states:

“We have a social responsibility that we try to take, and it's not just us, because Twitter and social media has exploded, but what we are trying to preach is that one must fact check the source”

This is a sentiment shared by many of the respondents, both R3 and R4 state that while firms and financial influencers have a great responsibility it's ultimately up to the retail investor to take responsibility over the tips they follow. Additionally, R2 explains that as a retail investor you have the ultimate responsibility over the financial decisions you take, and if you choose to follow tips from others without doing your own research you only have yourself to blame. However, the amount of responsibility different actors should take is dependent on the size and outreach of the financial influencer argues R4:

“It depends on whether the person acted as an individual or company. If a person gets enough followers, they will be a bit like a company and have more responsibility, but if you take advice from someone with 10 followers, then maybe you have to stand for your choices yourself”

Alexander at Nordnet also believes they differ from other financial “influencers” as they do not give any financial advice by telling people what to buy or sell. They instead want to focus on equipping its users with the right information and educating them enough to know what kind of advice might be worth pursuing. Similarly, Avanza explains they are not in the advice business, rather the purpose of their blogs and pods etc. is to educate investors to not make costly mistakes and therefore their main responsibility is to help investors make better choices.

4.3.4 Government responsibility

The last type of responsibility acknowledged by respondents is the role of the government and the regulatory body which R1 argues to have the greatest responsibility of all concerned stakeholders. Many respondents have brought up the lack of regulation on financial markets which is something Tommy Gärling also acknowledged as there is insufficient consumer protection in the industry, at least compared to other consumer products. This is further emphasized by the shift in responsibility from the state to the individual as privatization of many forms of savings has been made in Sweden, explains Rikard at Avanza:

“If we agree that the stock market and private savings have increased and that society's responsibility has decreased, it is quite interesting that society has transferred more responsibility to the individual”

Whilst the shift has resulted in more financial freedom and choice, it is worrisome that this transition has occurred without any corresponding change to the educational system to increase financial literacy, explains Rikard at Avanza. Therefore, a call for more financial literacy in early education is preferable according to Rikard who believes society can take a larger responsibility and role in educating people about financial markets. Tommy Gärling expressed a similar sentiment as he is skeptical towards this shift in responsibility from the authorities to the individual investor, especially considering the complexity of financial products which makes him wonder why there is so low consumer protection on financial markets relative to other markets.

However, Per at Finansinspektionen argues that they have a responsibility to regulate in a way that helps investors, but that doesn't necessarily mean more regulation per say. Per believes that there must be a level of freedom for consumers to make their own decisions and adapt their investment to their own interests, it's therefore not the role of governments to dictate those decisions. Rather, the main responsibility of Finansinspektionen is to look after and protect investors by using the tools available through current regulatory frameworks, but it's clear there is a preference for stakeholders to find a common solution together. This is something Richard at Avanza spoke deeply about, he states that they have a strong partnership with other stakeholders, such as Finansinspektionen and other lawmakers to find ways to protect investors. Richard states:

“We have a very close collaboration and a very good collaboration with Finansinspektionen. Both we, and Nordnet, and all of us, have an interest in keeping manipulation away. Both gamification and price manipulation, it does not build confidence in the capital market.”

Nordnet also strongly emphasized the need for close collaboration between actors in the industry and government bodies such as Finansinspektionen. Alexander praised the Swedish model which he describes as heavily self-regulated to be a preferable way of ensuring protection for investors as compared to strict regulations:

“I believe more in that model instead of legislation that is very far from the industry, where they set up a kind of line where on one side is everything is right and on the other side it is all wrong, reality is not that black and white”

In contrast, Tommy Gärling, Emeritus Professor in behavioral finance, offers an opposing view as he believes authorities are responsible and should therefore set the rules for companies, not the other way around. He believes the lack of consumer protection in financial markets is worrisome and explains that government institutions such as the EU have set rules for how consumer products are supposed to be but left out financial products. Finansinspektionen on the other hand argues that there is a good reason for the slow legislative process, Per explains:

“Legislation is notoriously slow. And so it should be. It must be predictable. It is not desirable that it should be so flexible that it must be adjusted all the time and you must have long-term sustainable rules of the game in the market”

Hence, the government should not rush to regulate markets or information channels as they have a responsibility to get it right according to Per at Finansinspektionen. However, Per also states that it is probable that some regulations about gamification or information flows will be introduced in the future which may broaden the responsibility of the government further.

5. Analysis

The following section will put the empirical findings into the context of the current literature on the subject of retail investing, technology development, and CSR. It will compare and contrast the empirical finds of this research to prior literature on similar topics as to further the understanding of the researched phenomenon. It is divided into three separate parts that follows the structure of the empirical findings and highlights the most important and relevant aspects of this research.

5.1 New information landscape

Regardless of how the respondents were introduced to retail investing, whether it would be through friends and family or active search for managing personal finances on the internet, a conceptual understanding for the purpose and value of investing is present amongst the respondents. In terms of Weber (1978), such a mindset towards investing would perhaps fulfill an initial level of value-oriented rationality as it can be considered a decent and ethically justifiable approach in potentially making money. Consequently, Weber's goal-oriented rationality may in this context concern the measures retail investors take in trying to fulfill the value-oriented rationality. The subsections in this chapter intend to initially examine and discuss the retail investor environment in order to determine the premises on which goal-oriented rationality can be developed.

5.1.1 Vertical information asymmetries

New technologies have enabled retail investors unprecedented accessibility to the financial markets, particularly as the internet has enabled various types of financial information to flourish and be instantly accessed by anyone. In accordance with Chen et al. (2014), the respondents are heavily reliant on information originating from social media, which consequently can be identified as a facilitator for this emergent development. In addition, financial information in the form of press releases and company news are instantly available on modern broker platforms, which is highly appreciated amongst most respondents.

As a result, several respondents as well as representatives from Avanza and Nordnet, share the picture that investments have become democratized for regular people, as financial information no longer is exclusive to certain groups such as institutional investors or people of serious wealth. Although retail investors in most cases must rely on publicly available information sources compared to institutional investors, this new information landscape would supposedly share

attributes of an internet economy; mitigating some of the information asymmetries between ‘larger’ investors and retail investors, as well as facilitate transparency (Bukovina, 2016; Rezabakhsh et al., 2006).

At the same time, paying attention to specific firms’ announcements on social media may give the investor an advantage, which according to Jung et al. (2014) is a type of engagement mostly larger investors engage in. On this notion, it is possible that information asymmetries between institutional investors and retail investors have not necessarily decreased, as none of the respondents have experience in directly engaging with firms (Snow, 2015; Jung et al., 2014). Contrastingly, the theoretical conceptualization of this proposed asymmetry is yet based on the same premises as with all information on social media, i.e., public accessibility; this rather becomes a question of selective information retrieval than an argument for increased asymmetries. Although it may not be explicitly argued that vertical information asymmetries have increased or decreased, the perceived reduction of vertical asymmetries among retail investors is an important contributor to their investor experience.

5.1.2 Horizontal information asymmetries

Another perspective of the modern retail investor environment involves understanding the tacit rationale behind retail investors’ assessment of information. Traditional financial information in the form of magazines and news channels have existed before the rise of modern retail investing, yet it does not seem appealing to the respondents. Amongst social media, the respondents rather value other types of information that can be accessed instantly, such as real-time company press releases and analyzes in the broker applications. Although new technologies have changed the information landscape in terms of *who* can access information, the *type* of information accessible, and *how* the information is assessed, previous research in this area is contracted in studying information asymmetries solely on a vertical level, i.e. retail-to-institutional investor gap: Compared to traditional sources of information, for example news and financial magazines, social media leverages the power of two way communication (Dootson et al., 2016). This has enabled efficient assessment and exchange of information through channels identified by the respondents as Discord communities, Facebook groups, Reddit forums and podcasts, to name a few (Chen et al., 2014; Snow, 2015; Bukovina, 2016). R3 emphasized that communities are important for gaining knowledge and insights, which also is suggested by Chen et al. (2014). Conversely, it has also been found that social media can be a facilitator for diffusion of false and misleading information, as some respondents experienced market manipulation, ‘pumps & dumps’, as well as other hidden agendas (Snow, 2015).

Simplified, some groups of retail investors have financial information and intentions that they do not entirely disclose, while some other retail investors have genuine intentions with their exchange of analyses and discussions on social media. Although not explicitly expressed by the respondents, this can fundamentally be resembled as an information asymmetry existing among retail investors themselves, i.e. horizontal information asymmetries: As implied by Armonte and Avalos (2021), the practical implication for the average retail investor is that he may have a hard time differentiating between ‘good or bad’ information, where the complexity increases by research suggesting that stock prices may also move due to naive retail investors reacting on misleading information (Pagano et al., 2021; Chen et al., 2014). Hence, it also becomes possible that even if a retail investor does not initially act on information displayed on social media, he may later act in FOMO (fear of missing out) when the price starts to move, which eventually causes retail investors to “burn themselves” as stated by R2. In terms of Bikhchandani and Sharma (2000), this can be resembled as a herding behavior, which historically have been fairly under-researched amongst retail investors. Considering that herding is acknowledged by the respondents as a conventional element of the contemporary retail investor environment, it provides further support for the occurrence of horizontal information asymmetries.

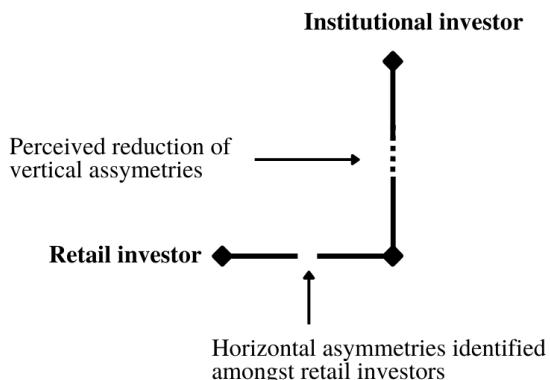


Figure 7: Illustration of the identified development of information asymmetries

Aligned with Deloitte (2021) findings regarding retail investors extensive use of social media, it can be implied that it is to the retail investor’s disadvantage to completely disregard information on social media, as it automatically reduces the probabilities of finding something valuable to zero. Retail investors’ extensive use of social media may be described in terms of Petsas et al. (2013), suggesting a Pareto effect determining certain application’s popularity and their corresponding likelihood to be downloaded. At the same time, it is also feasible to believe that a modern retail investor may already be familiar with using social media applications prior to investing. Hence, it is possible that social media exposes the retail investor to financial information even when he is

not actively looking for it. Such reasoning may provide additional support to understand some respondents' habits in passively assessing social media in order to discover which stocks or sectors that are 'hot' at the moment, as well as to 'keep up' with internet culture trends, e.g., "Memestocks" as explained by R6. Nevertheless, the volatile (and for some, lucrative) nature of particularly the latter investments would perhaps not be an acquainted element of the modern retail investment environment if it was not for the network effects, in this sense resembled as herding (Deloitte, 2021; Katz & Shapiro, 1994; Bikhchandani & Sharma, 2000). In an additional sense, instantly accessible financial information through e.g., social media would only be valuable if retail investors are able to take an equivalent measure of action when reacting to it. Thus, as expectations, coordination, and compatibility present in this setup, an interconnection between modern information flows and modern retail investor brokers are identified, which in turn can be resembled as an ecosystem (Petsas et al., 2013; Katz & Shapiro, 1994).

Concludingly, retail investors may initially access the financial markets on a monetary basis of value-oriented rationality, while impressions from social media might influence the investor in engaging in less goal-oriented behavior (Kannadhasan, 2015; Weber, 1978). The implications connected to such behavior is perceived by the respondents to often result in monetary inadequacies, which is further discussed in the following section.

5.2 Mechanisms of modern retail investor behavior

So far, the analysis has processed respondents' perceptions of the retail investor environment as well as their perceptions of other retail investors. Following the previous discussion regarding application ecosystems and network effects, two key characteristics amongst the respondents is that they make use of (1) modern information sources such as social media and data in the broker application and (2) a modern retail investing broker application to buy and sell financial assets. The following section focuses on analyzing the respondents' own described habits and behavior regarding these two elements from a technological and psychological perspective.

5.2.1 Information in value-rational decision making

From the interviews, three main types of information can be identified:

1. Informal sources of information hosted on social media by either various financial profiles ("influencers") or by ordinary people on forums.
2. Educational information often hosted by a broker platform on social media or in their corresponding blogs and podcasts.

3. Institutional analysis, real-time price info and firm press releases hosted and accessed by retail investors on the broker platform.

The broad availability of educational content regarding risks, asset types and more professional industry analysis rather than “some jokers’ opinion on Twitter ” according to Richard Josefson, CEO of Avanza, is acknowledged as valuable by the respondents. However, information type 1) and 2) are more preferable amongst the respondents, where tips and recommendations originating from 1) are perceived as most influential in the decision-making process, even if retail investors do not partly or entirely understand the information, which can be a result of motivational or cognitive deficiencies (Fisch & Wilkinson-Ryan, 2014). Among the respondents, this characterization can be identified as the generally uninterested R2 who admitted that he was “too poorly informed to actually be investing”, or as R5 who lacked knowledge regarding legal processes which was the fundamental behind one of his investments. These findings align with the human nature of seeking the most technically efficient way in reaching a measurable goal, i.e. goal-oriented rationality (Weber, 1978). Hence, it can in some senses be argued that acting on other people’s recommendations would be more goal-rational than spending time and energy doing extensive research, only to still risk being wrong.

Nevertheless, this reasoning prerequisites that the retail investor perceives that a certain recommendation has underlying fundamentals, regardless of if it is written by someone that takes advantage of other retail investors cognitive deficiencies in understanding the fundamentals of motivational unwillingness to do their own research (Fisch & Wilkinson-Ryan, 2014). Following the track of “Memestocks” in section 5.1.2, the alleged GameStop short squeeze orchestrated on Reddit, or buying Tesla stocks based on the company CEO making fun posts on Twitter, can in terms of Armonte and Avalos (2021) be identified as investments based on non-fundamental firm information. However, Rikard Josefson, CEO of Avanza, questions if this should be called investing rather than speculation, where the latter could possibly be derived from any non-fundamental factor, such as mood (Hirschleifer & Shumway, 2003). Hence, trends and culture may rather be a cognitive disguise for legitimizing non-fundamentally based investments in cases where the retail investor loses money, which can be exemplified with the absence of indifference when R6 made and lost money on his Tesla stocks: By giving such ‘investments’ an additional purpose than solely being monetary, investing becomes subject to goal-displacement, which consequently jeopardizes the value-oriented rationality, i.e. the underlying ‘why’ of investing (Weber, 1978). When further considering Hirschleifer and Shumway (2003) implication that almost any non-fundamental factor (e.g., the weather) is tradable and potentially profitable, the barriers for self-justifying that a non-investment is an investment lowers to the extent that investing in its truthful term becomes an illusion. Therefore, this rationale may also be applicable for non-sophisticated forms of trading, which was resembled as gambling and betting by some respondents.

As previously exemplified with R6, investments based on non-fundamental firm information may be emotionally exhausting for the retail investor (Engelberg & Parsons, 2016). Hence, respondents such as R3, R5 and R6 describe a learning process from making investments of a non-fundamental nature as well as buying on other's recommendations without flinching, to eventually start making more conscious and fundamental-based investment decisions, such as 'safer' stocks and mutual funds. Although the respondents perceive more peace of mind with this approach, intimidation by market fluctuations is to some extent still present, which results in emotional imbalance and affectional decision-making behavior, e.g. to deviate from a monthly investing strategy as in the case of R2, or to try 'buying the dip'. Considering that a dominant share of market fluctuations occurs on a non-fundamental basis according to Cutler et al. (1988), it can be argued that the market is quite unforgiving even for the retail investor who tries to make thoughtful investment decisions. Fortunately, the psychological damage that the respondents have experienced, particularly when engaging in non-fundamental investing, have not led to hospital admissions as in Engelberg and Parsons' (2016) study. Yet, the mechanisms of compromising present well-being with expectations of future consumption highlights how goal-rational actions conflict and diminishes the value-oriented rationality behind investing. Hence, following the findings of Fisch and Wilkinson-Ryans (2014) suggesting that retail investors are likely to lose out on returns in cases where cognitive limitations are low and motivational limitations are high within accessing information, it can additionally be argued that retail investors may still suffer in cases when these limitations are non-present.

5.2.2 Implications of technology in facilitating accessibility

Modern retail investing as an ecosystem may further be described as the general trend of increased accessibility to the financial markets identified by Deloitte (2021). Thus, the term *accessibility* becomes a key factor in understanding the respondents' experiences, as accessibility can be defined and identified on various levels. The smartphone can be recognized as a prerequisite level of accessibility, as it allows the respondents to instantly access applications for investing and finding information almost anywhere and anytime. A second level of accessibility could be instant access to financial information through the internet, particularly identified among the respondents as social media, real-time data, and firm's press releases. Eventually, a third level may involve access to managing investments in terms of instant order execution and real-time portfolio monitoring through a broker application, which also aligns well with the nature of the respondent's choice of information sources as in the second level of identified accessibility.

Modern broker applications are preferable amongst the respondents due to its functions, user-friendliness, the neat user-design, and the perception of being in control of one's finances; elements that in terms of Fogg (2002) can be regarded as social cues, which makes it viable that

retail investors are subject to persuasive technology (PT). In terms of Albarracín et al. (2014), the act of persuasion is to manipulate one's beliefs and values in taking a certain action, which is similar to the idea of using gamification in designing applications described by Tommy Eriksson, professor in digital design. Hence, when considering the respondent's acknowledgment of modern broker applications influencing their investment decisions, broker applications may serve as a facilitator in influencing goal-rational actions. Gamification and PT can be positive when it helps the retail investor in reaching a measurable goal with one's investments, for example R3 in beating the index, or perhaps to pursue a user in taking the first steps of towards pursuing the value-rationale behind investing in terms of buying simple mutual funds suggested by R2.

Nevertheless, it should not be neglected that the social cue concerning physical attributes in interactive user-interfaces is powerful given its effectiveness in pursuing the user to continue using the interface, exemplified with its frequent use in the gambling industry (Fogg, 2002). Consequently, the types of non-fundamental investments resembled as bets and gamble by the respondents may in addition gain a literal implication due to the presence of the physical cue and gamification elements in the broker application identified by the respondents. Hence, PT and gamification may also influence goal-rational actions that diminish the value-oriented rationality following the previous reasoning in 5.2.1.

However, the respondents that resembled their initial experiences with the financial markets as bets and gamble had no deliberate intention in accessing the financial markets on such premises. Rather, their value-oriented rationale for investing was fairly consequent with Engelberg and Parsons (2016), implying that investing is a function of present sacrifice in generating expectations of future consumption, which in terms of Mischel et al. (1989) can be seen as a form of delaying gratification. Thus, when considering some respondents' history with impulsive and reckless casino-like behavior, it can be implicated that the accessibility inherent in modern retail investment sphere gives the retail investor an unprecedented possibility to instantly gratify himself, which is fundamentally equal to the fundamental logics of the Stanford marshmallow experiment (Sanbonmatsu et al., 2013 reproduced in Wilmer et al., 2017; Mischel et al., 1989). From the interviews, additional habits connected to instant gratification have been identified as the ability to find and react to financial data and information, or by constantly monitoring and measuring the performance of one's stock portfolio. With regard to Kannadhasan (2016), it can be implicated that it is possible that instant gratification and PT in new technologies may lower the barriers for a retail investor to engage in an increased risk-taking behavior (FRB).

Yet, when the respondents eventually became aware of their habits and more knowledgeable about investments, they still experienced a need to decouple themselves from stockbroker applications on days with market declines, in order to not be triggered in making impulsive and emotional-

based decisions (Sanbonmatsu et al., 2013 reproduced in Wilmer et al., 2017; Hadar et al., 2015 reproduced in Wilmer et al., 2017). The complexity increases with Tommy Gärling resembling this behavior as myopic loss aversion, implying that not evaluating the stock portfolio due to red days might also make returns suffer. Hence, it can be reasoned that PT synergizes with the possibility for instant gratification in making financial risk tolerance (FRT) more difficult to handle, potentially enhancing the risk of making a retail investor subject to goal displacement (Kannadhasan, 2015; Weber, 1978). This highlights that the presence of the physical que and gamification within investing can be more problematic compared to the acknowledged success it has in areas such as education and exercise (Huang & Soman, 2013; Hamari & Koivisto, 2013).

It can be acknowledged that new technologies have made retail investing effortless in terms of lowering or erasing traditional barriers for retail investing in terms of who, when and how, which may serve as an explanation towards understanding why modern retail investing has gained popularity today (Deloitte, 2021).

5.3 Role and responsibility of stakeholders

The analysis has up to this point focused on exploring the effects of new technologies on the contemporary retail investor experience on financial markets. This last part, however, will shift focus onto the actors within the industry that have been suggested to have a notable role to play in influencing retail investors behavior and thus can be argued to have a responsibility, for good or for bad. Hence, the following section will delve deeper into three main actors that are proposed to play a crucial part in the retail investing experience, that being the *government, broker firms, and technology applications*.

5.3.1 Government responsibility

Arguably one of the most important stakeholders in the financial industry is the government which, according to Carroll (1991) and Singhal (2014), has a responsibility as a regulator to ensure companies follow the rules and norms of society. However, there seems to be some disconnect between what the regulatory framework requires and what retail investors think is appropriate. Several respondents argued that the government should take a larger responsibility in today's digital trading climate as the way investors gather information has changed drastically in the last decade, something Snow (2015) acknowledges. However, Per at Finansinspektionen explained that the legislative process often takes time, as it should do given the impact it can have on the market. It is probable, given the fast pace of innovation, that it's difficult for lawmakers to keep up with current trends, hence, a sense of caution is practiced by the government.

Moreover, respondents seem to support greater government involvement in regulating information channels as stated above, however, there seems to be a strong sentiment amongst both retail investors and market actors to avoid more regulations that infer on the openness and freedom present on financial markets. Thus, once again governments may need to carefully navigate new regulations as to not disturb the well appreciated accessibility and opens accelerated by digitalization.

One way the government, in Sweden in particular, has viewed its role seems to be as a coordinator that works closely with the market to ensure sufficient protection of retail investors. A great deal of collaboration between market actors and government agencies were expressed by respondents which seem to indicate that the current set up of self-regulation and close collaboration is mutually beneficial. These findings seem to support the views of Singhal (2014) who explains the importance of governments to be more than a regulator as it needs to act in a support role enabling sustainable development in industries. It is also highly related to the point brought up by Freeman and McVea (2001), and Moore (1999) who highlights the importance of stakeholders, such as governments and firms, to actively work together. By having a close relationship with market actors, the government can avoid imposing regulations that are difficult to implement and enforce, meanwhile the market actors avoid having to abide by market rules instigated by people with little real knowledge of financial markets. Therefore, there is a strong incentive for market actors such as Avanza or Nordnet to act responsibly as to avoid the need for further government intervention. This approach is similar to what Du et al. (2010) describes as a “carrot and stick approach” as governments choose to reward good corporations and punish bad ones.

Beyond its regulatory responsibilities, the government might also have a distinct social responsibility to promote CSR and protect investors from costly mistakes. A concern expressed by many respondents relates to the financial illiteracy amongst investors as people often don't understand what they are buying, which is acknowledged by Fisch and Wilkinsson-Ryan (2014). This might be somewhat problematic as the Swedish government, to a large degree, has transferred a substantial amount of the responsibilities from the government to the individual investors. This has resulted in retail investors having much more freedom over their financial strategy than they historically have had, however, not all investors are equipped to deal with that extra responsibility. The proposed problem with this is not the shift itself, rather that the shift has occurred without additional training and education for the retail investor. It is therefore suggested by some respondents that governments should work to increase financial literacy by incorporating the subject into the educational system, and therefore take a more active role as an informer and educator. This is similar to what Singhal (2014) suggests governments should do, namely, to act as a social enabler rather than a legislature. Hence, the government has a responsibility that goes

far beyond solely enforcing laws, it arguably also has a responsibility as an information giver, and most importantly as an educator.

5.3.2 Broker responsibility

Generally, two schools of thought are prominent in the discussion about corporate responsibility where one either confines with the *Stakeholder theory* advocated by Friedman (1971) or the *Shareholder theory* as discussed by (Freeman & McVea, 2001). Respondents in this research highlighted aspects of both these prominent theories as reality seem not to be as black and white as these theoretical assumptions about responsibility of firms suggest it to be. R3 explained that broker firms are highly responsible over its users as they are the providers of the accessibility and the means to trade. Therefore, they have a distinct responsibility over the effects their platform has on retail investors, be it good or bad. This seems to indicate that respondents such as R3 suggest that firms, especially broker firms, have a responsibility that goes beyond their economic objectives as they are deemed to have a unique responsibility to care for its user. This is similar to the ideas of Freeman (1984) who argue that firms have a social responsibility to take care of its stakeholders, especially customers.

Whilst many respondents and market actors recognize this inherent responsibility, there is also a sentiment that people must take responsibility for their own decisions and that firms cannot be expected to “hold hands” with all retail investors. For instance, R6 expressed a sense of satisfaction with the current investing climate as he did not see a need for firms to take more responsibility than they do at the moment, rather they may need to scale it back. Some aspects of the opinion of R6 can resemble the views of Friedman (1971) who argue that firms should not be responsible for the actions of its customers, as they are not forcing anyone to use their service. Hence, as Friedman (1971) states, the main responsibility of firms should therefore be to adhere to the interest of the firm, not to the interest of society.

However, this line between firm interest and society interest seems to have become increasingly blurred as customers in the 21st century demand corporations to act in a responsible manner, something Du et al. (2010) concluded. These findings seem to be supported by the answers of the respondents as retail investors expect broker firms to act responsibly, as the opposite would not be tolerated and force an exodus from that particular platform as R6 explained. Hence, it is possible that broker firms such as Avanza and Nordnet engage in CSR partly to avoid being penalized by customers as firms are expected to act in a certain way in today's modern society. However, it might not solely be the possible downsides of abstaining from CSR that incentivizes firms to act more responsible, rather it may also be the potential benefit as well. Lee and Shin (2010) and

Galbreath (2010) both conclude that firms may benefit from engaging in CSR to create a favorable firm reputation which may translate to a better financial performance.

Hence, it might not be a case anymore that firms either abide by a strict shareholder perspective or a strict stakeholder perspective as CSR objectives and financial objectives are increasingly interlinked. For instance, Alexander at Nordnet explained that there exists a monetary incentive for the firm to protect investors from “burning themselves out” as these investors often exit the market. Thus, by taking responsibility and educating, inspiring, and promoting longevity on the market two objectives can be achieved, firstly they help to protect investors and secondly, they produce long-term customers.

5.3.3 Technology responsibility

The final section in this part of the analysis regards the role and responsibility of technology providers such as broker applications and social media. As has previously been established, many respondents and market actors expressed concern over the excessive use of gamification and the instant accessibility retail investors nowadays have to the financial markets, something Deloitte (2021) acknowledges to influence retail investors. This may prove problematic as gamification, which has been given notable attention in the literature (Fogg, 2002; Hamari & Koivisto, 2013) is something the respondents of this research have hinted at without mentioning the often unknown concept itself. This begs the question of what type of responsibility actors that enable such technologies have, which in this research context would be broker platforms, financial apps, and social media applications.

Market actors such as Avanza and Nordnet expressed concern about gamification trends in the industry and acknowledged they have a role to play in it. Also, there seems to be a shared view amongst market actors that gamification should be contained as to not negatively influence the retail investing experience and therefore avoid unethical business practices. Hence, in line with the ideas of Du et al. (2010) broker firms seem to favor a good public image and acknowledge that it is not in their direct interest to use excessive gamification as it does not align with their view of being a responsible corporate entity.

However, worth acknowledging is that whilst gamification often comes with a negative connotation it is not inherently a bad concept of design. For instance, Hamari and Koivisto (2013) and Huang and Soman (2013) explain that gamification has proven to be effective in areas such as education or exercise applications, which may imply that gamification can be used to spark interest in investing and make educational tools offered by broker firms more appealing. This would align with the view held by the representatives at Avanza and Nordnet as they believe their responsibility as a technology enabler is to be an informer and educator that helps investors make sound financial

decisions. Therefore, it can be speculated that the responsibility of technology providers and enablers lie mostly in balancing the positives of increasing user-friendliness and accessibility against the potential adverse social effects of excessive gamification.

Another way new technologies and gamification has changed the industry is through the usage of social media and other communication channels. It has previously been established that retail investors use social media to a large degree (Snow, 2015) which seems to be supported by the respondents in this research. The responsibility of information channels or “financial influencers” as respondents often highlighted has proven to be difficult to establish. Some respondents believe there are far too few limitations to giving stock tips, meanwhile others believe it to be mostly a personal responsibility to not blindly follow the advice of others, given the possibility of hidden agendas. Hence, it is difficult to determine if and how financial influencers should be held accountable and how to promote responsibility within social media.

What seems to be clearer however, is the responsibility one could expect companies operating on social media or through their own information channels to take. The literature suggests firms can see substantial benefits of using social media (Kumar & Devi, 2014) but there also seems to be a lot of responsibility that comes with those benefits. Companies such as Avanza or Nordnet are to a large degree expected to provide information that is useful for retail investors and that is free from any hidden agendas as users expect them to act responsibly. This seems to indicate that once again, firms engage in socially responsible actions partly to avoid being scrutinized by an ever more demanding customer base (Bukovina, 2016). However, it has also been suggested that Avanza and Nordnet have a responsibility for the communication it enables through their platform, for instance through their forums. The proposed problem with user forums on broker apps or social media is that it's not uncommon for people to directly follow the advice posted on the sites (Chen et al., 2014) and thus the providers of such functionality may be responsible for its effect.

6. Conclusion

The final chapter of this thesis will discuss the most important findings and results presented in the research. It will start off by answering the two stated research questions and then go on to elaborate on the practical and theoretical contributions of this research. Lastly, some suggestions regarding future research will be presented to show what areas of this research could be interesting to study further.

6.1 Answering the research questions

Although Swedish people have a history with stock and particularly mutual fund savings, the surge of people seeking to access the financial markets in the recent years have given retail investing an unprecedented popularity. It has been identified that the changes the financial markets have gone through in recent years is closely tied to the emerging development and introduction of new technologies, which is the background of interest for this study. Following the problematization of prominent areas within contemporary retail investing, the purpose of this study has been to explore and create more knowledge regarding the implications of new technologies and digitalization, which have been identified as a general trend in our modern society. The purpose was to be fulfilled by studying new technologies in the context of retail investing. The research questions have been answered by conducting a qualitative study with semi-structured interviews, which consequently were coded and analyzed using an abductive approach derived from grounded theory.

The first research question: ***How do new technologies influence retail investors' experience within their investment decisions and habits?*** aimed to capture retail investor experience with new technologies in their decision making process and investing habits. In the interviews, it was found that the respondents' reflections and experiences regarding their own behavior was derived from their corresponding perceptions of the retail investor environment. This environment was heavily characterized by information in various forms, particularly real-time access to financial data and reports, as well as information originating on a two-way communication basis, i.e. social media, which aligns with the findings of e.g. Dootson et al. (2016). Consequently, the respondents perceived that new technologies have democratized investments for regular people. However, as suggested by Snow (2015), information asymmetries between retail investors and institutional investors have not necessarily been mitigated to the same extent that it is perceived to have been mitigated by the retail investors. Conversely, an emergent horizontal type of information asymmetries amongst retail investors themselves was identified, as an adverse effect of retail

investors being able to spread information and easily communicate with each other through social media. This is both a result of the wide availability of specific forums, where ideas and analyses are discussed, as well as the occurrence of hidden agendas on various social medias, e.g. people conspiring by manipulating stock prices by spreading false information. Horizontal information asymmetries can further be exemplified with the respondents experiencing difficulties to differentiate between ‘good’ and ‘bad’ information, yet they still try to stay updated on their social to be as informed as possible.

Moreover, it was found that some retail investors engage in investments based on non-firm fundamental information, which in some cases can be resembled as a herding behavior. In some cases, these investments were justified by the investor as being for an additional cause (e.g. a trend or being part of a cultural movement) than the monetary rationale behind investing. Yet, aligned with research such as Engelberg and Parsons (2016), feelings of anxiousness and emotional damage were present when the investment resulted in monetary inadequacy, suggestively resembling this behavior as a cognitive disguise for losing money.

Acknowledged, new technologies have made retail investing effortless in terms of lowering or erasing traditional barriers for retail investing in terms of *who* can invest, *when* to invest and *how* to invest, which may serve as additional support in understanding why modern retail investing has gained popularity today (Deloitte, 2021). Nevertheless, modern retail investors may still access the markets on a feasible rationality that, ‘sacrifice today may result in greater consumption in future’, i.e. a form of delayed gratification. However, it was identified that the nature of smartphones, broker applications and the informational landscape have created a general unprecedented accessibility for instant gratification, which combined with the persuasive nature of these technologies may further trigger the retail investor in making choices he probably would not do otherwise (Fogg, 2002; Mischel et al., 1989). At the same time, it can be concluded that PT in terms of gamification and instant accessibility may indeed help a retail investor in reaching his goals on his own terms, although it can be argued that this would require a disciplined mindset. This is however achievable, as several respondents have described a learning process from accessing the markets as a casino, to successively making more thoughtful and goal-rational decisions in pursuing their purpose of investing.

With respect to the conclusions of RQ1, it can eventually be summarized that new technologies have created unprecedented opportunities for retail investors to be in charge of their finances in achieving subjectively risk-adjusted returns, while at the same time creating an equal number of possibilities to be side-tracked from one’s goal as a result of the human behavioral nature.

The second research question posed in this thesis is a derivative from the first one, however with a greater emphasis on the different actors in the industry that directly, or indirectly, can influence

the behavior of retail investors. Hence, the purpose is to understand what role the different actors have and what responsibility it may entail, the second research question states: ***How do different actors within the retail-investment sphere influence the contemporary retail-investors' experience from a responsibility perspective?*** To answer the second RQ, three main stakeholders were identified to play an important role in shaping and influencing the retail investor experience from a responsibility point of view; these were the government, broker firms, and technology providers of applications.

The **role of the government** could be argued to be two-fold. Firstly, it has a responsibility as a legislature to uphold the interest of the market and protect vulnerable stakeholders in the industry. However, it must balance the need for regulations against the impact it can have on the openness of financial markets. Secondly, governments can be a facilitator for CSR development by engaging in activities that support and incentivize responsible corporate citizens, but also penalize irresponsible ones, which align with the findings of Du et al. (2010). However, the government might also need to take a bigger informational responsibility by increasing financial literacy and educating the population to cope with the increased accessibility of financial markets driven by new technologies.

Moving beyond government responsibility, it's rather clear that **broker firms**, such as Avanza and Nordnet, have a unique and inherent responsibility to protect its users, which is something retail investors seem to expect from the broker firms. It is acknowledged that some respondents consider this responsibility as mostly symbolic with little real implications, however, there seem to be strong market forces in place to ensure responsible enterprises are rewarded, and irresponsible ones punished. Hence, the dilemma of either maximizing profits, advocated by Friedman (1971), or being a responsible enterprise that incorporates the wishes of stakeholders, as argued by Freeman and McVea, (2001), seems to be quickly disappearing, as these objectives are becoming increasingly intertwined in contemporary society.

Furthermore, the last aspect of stakeholder responsibility concerns two main aspects of **technology responsibility**. Firstly, it is suggested that the use of gamification features must be handled with caution as it's not desirable for broker applications to be designed to promote unnecessary risk-taking. Therefore, a balance must be struck between increasing accessibility and user-friendliness, whilst also avoiding excessive gamification to take root. Secondly, broker firms may need to take greater responsibility for the functionality they offer in terms of allowing information sharing through their forums. It is probable that while broker firms try to ensure that the information posted on their own forums is free from manipulation, it is exceedingly difficult to avoid it entirely, as it is on any social media platform. Their proposed solution to this is not to fact check every post, but rather to educate investors enough so that they know what

misinformation is. Thus, responsibility may come in the form of combating misinformation, but it may also come in the form of educating investors to be better at sorting out false or misleading information. These findings seem to agree with Moore (1999) as well as Freeman and McVea (2001) regarding the importance of protecting vulnerable stakeholders, while at the same time opposing the ideas of Friedman (1971) that profit maximization should be firm's sole mission.

6.2 Implications & contributions

In the following subsections, the most prominent implications and contributions, derived from the study's conclusions, are presented.

6.2.1 Practical implications

The practical implications of this study can be argued to be several, however, one of the most influential findings of this thesis is that smartphone applications, accessibility, and digitalization of financial markets, are neither entirely positive or entirely negative: It rather depends on how stakeholders such as broker firms or social media platforms, as well as regular people, utilizes these new technologies. Most respondents seem to enjoy the increased accessibility, and it's likely that digitalization of financial markets and the informational environment have had a net positive effect for the average retail investor as it has sparked additional interest in savings and investments. Nevertheless, elements such as gamification in the area of retail investing needs to be further problematized, as investing shares the monetary element of gambling and casinos compared to e.g. exercise and education applications. Hence, although the average retail investor may have a positive experience, it is important to not overlook the potential adverse effects technology can have on vulnerable investors that are in the proximity for developing long lasting gambling habits. As modern retail investing fundamentally intersects the area of gambling, a practical implication of this study calls for managers within broker firms to guide the development of new technologies in restraint and avoid excessive gamification by incorporating it in moderate amounts. Self-regulation of this sort could also be beneficial in order to avoid lawsuits as in the case of Robinhood (Gartemberg, 2021), or to mitigate the risk for government imposed regulations. In summary, this research is appropriate for stakeholders in the industry to assess, as it uncovers the potential impact technologies may have on human behavior and the consequent responsibility of those facilitating such technology usage.

With respect to the conclusions of the research questions, inadequacies have been identified between the increased degree of freedom and own responsibility that new technologies and stakeholders have imposed on modern retail investors, versus the governmental responsibility to

protect retail investors. This have been exemplified by the absence of governments taking proactive (and reactive) actions, for example by increasing financial literacy amongst the population. In this sense, it can be argued that those of a solid background of financial literacy have better possibilities to effectively seize the opportunities and freedoms of modern retail investing, while those without such background may for example not understand the rationales of investing, experience longer learning curves, or perhaps even suffer severe monetary deficiencies. Although new technologies have made investment accessible for everyone, it also becomes debatable that modern retail investing may in some senses increase societal clashes in terms of knowledge asymmetries. As general knowledge and education amongst the population can be regarded crucial for an just and equal modern society, this calls for politicians and government regulators to assign appropriate measures in further investigating the matter.

6.2.2 Theoretical implications

The studied subject in this thesis has been given relatively little attention by the literature, partly because it is investigating the effects of new technologies introduced in the last decade. Thus, this thesis contributes to the literature by offering a comprehensive overview of contemporary retail invest, furthering the understanding of how retail investors are influenced by new technologies and how their behavior has changed due to the accessibility to financial markets we have today. Furthermore, our results also contribute to a greater understanding of information asymmetries on financial markets in the digital era. Previous literature focused mostly on the assumed asymmetries between retail investors and institutions; our result, however, indicates an emerging type of horizontal information asymmetry *between* retail investors. The theoretical implications of this thesis is that it furthers the understanding of how retail investors use new information channels and how some investors are more efficient in utilizing the increased accessibility to information driven by new technologies. Therefore, it is suggested that future research focuses on exploring this aspect further and that it continues to build a greater understanding of how new technologies influence retail investor behavior, especially considering the vast pace of technology innovation in the field.

6.3 Limitations of study and recommendations for future research

This research has brought up various aspects of retail investors' experiences with regard to the influence of technological advancement and stakeholders within the contemporary retail investment sphere. The comprehensiveness of this study has been possible due to its explorative nature. Consequently, this also imposed limitations to the study, as findings and the presence of emerging phenomena could be a study subject each for their own, rather than being relatively brief

as in this study. Conversely, our study leaves various interesting topics for future researchers to study in-depth. Following are some suggestions:

- **Information asymmetries.** This research has identified that information asymmetries have become more prevalent between retail investors. Therefore, one suggestion for future research would be to further explore this informational gap and to explore the mechanisms enabling such a gap to exist. By doing so, more clarity could be offered regarding how retail investors leverage new technologies to gain an informational advantage and what effects that may have financial markets.
- **Gamification and accessibility.** As previously concluded, modern retail investing and its associated broker applications can be argued to share fundamental aspects of gambling and casinos on a holistic level. Derived from the interviews, gamification in combination with instant accessibility can influence the retail investor in his decision-making process – for the good and for the bad. Hence, gamification in the area of retail investing needs to be further researched, as investing shares the monetary element of gambling and casinos compared to e.g. exercise and education applications, which suggestively may influence some retail investors to goal-displacement (Hamari & Koivisto, 2013; Weber, 1978; Kannadhasan, 2015). Thus, future research should concern studying gamification and accessibility interconnectedly in the context of retail investing, perhaps with a quantitative nature in order to establish significance towards influencing human behavior.
- **Financial literacy.** Previous research such as Fisch and Wilkinson-Ryan (2014) have researched retail investors assessment of information, which offers a simple differentiation between motivational barriers and cognitive barriers for failure in understanding information. Our research indicates a complicated relation between knowledge, motivation, intentions, and outcome, where people with intentions to invest may get sidetracked. Following the governmental implications discussion regarding insuring financial literacy amongst the population, future research may provide a scientific approach towards by studying the effects of financial literacy in a setup that accurately reflects the contemporary retail investor environment.

Given the topic's contemporary relevance, there are far more areas within retail investing to be explored by future researchers. This research may serve as a roadmap for further research in order to contribute to society, innovation and human well-being.

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Appendix A) Retail investor interview guide

Habits:

When did you start investing? What made you interested in investing?

What are your investing habits?

- Do you have a particular savings goal? What is important to you?
- How often do you manage your portfolio and how often do you look at it?

How well do you think you are adhering to your savings goal? Do you ever get sidetracked? If so, in what situations?

What do you base your buy/sell order on? (research, tips etc.)

Do you ever feel impulsive when trading securities?

- What makes you buy a stock/fund impulsively?

If you look at your investments, what would you say is the biggest change in terms of strategy compared to when you first started investing?

Design/technology

Where do you do your trading? Is it at a regular bank or through a platform such as Avanza?

- Why is that? What do you like about it (app/platform)? Why do you choose that instead of other platforms/banks?
- How do you use the platform/bank? As a tool to make trades or as a place to also find information?
- Are there any special functionality that you use and value on the application?
- How often do you use the application?
- Do you believe you would have been as active on the financial markets if applications such as Avanza did not exist?
- Do you believe you would have been as active as you are today 20 years ago when it was not possible to check your portfolio on your phone or use applications to make trades?

- Do you think that the easy access we have today to financial markets is solely a good thing or do you see any risks with such functionality?

Market actors and investment climate

What is your perception of the current investment climate? Do you always understand what you buy?

Do you think there is enough information about the risks with different investments?

- Do you have any experience in losing a lot on the market? If so, did you understand the risks?

What actors can you identify that may have, or should have, a responsibility towards protecting retail investors?

- Do you feel there is a need for stronger protection for retail investors in terms of regulations? In what way could regulation help protect investors?
- What kind of responsibility do you feel broker firms such as Avanza have towards its customers? Are they responsible for how people use their application?

Social media:

How often do you use social media as a place to gather information or to get tips on investments?

- Are you active in any social media group that discusses financial markets?

How do you use the information you find on social media? Are you following tips posted online?

- If so, have they been good or bad?
- What kind of risks do you think following tips online can entail?
- Do you believe financial influencers have a responsibility over the tips it gives its followers? Do you think they should disclose any potential conflict of interest?

Last, do you believe there is any type of social problem with this increase in accessibility, instant access to portfolio, and social media presence in our everyday life in terms of affecting retail investors?

Appendix B) Data structure

