Kristianstad University
SE-291 88 Kristianstad
+46 44-250 30 00
www.hkr.se

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"Following" The Herd

How Social Media and *External* IDMFs Influence Novice Retail Investors' Decisions in Financial Markets

Simon Aronsson & Markus Nilsson

Authors

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Title

"Following" the Herd – How Social Media and *External* IDMFs Influence Novice Retail Investors' Decisions in Financial Markets

Supervisor

Martin Abrahamson

Assessing teacher

Elias Bengtsson

Examiner

Heléne Tjärnemo

Abstract

The purpose of this thesis is to investigate the influence of social media and *external* investment decision-making factors (IDMFs), including herd behavior, investor sentiment, and salience, on novice retail investors in Sweden. To do this, a conceptual model was created, building on elements from the *Four-Stage model* and the *Dunning-Kruger effect*, with a specific focus on social media and *external* (IDMFs). The conceptual model was utilized to understand the learning process of novice retail investors and gain insight into how their financial decisions are influenced by social media and *external* IDMFs. The approach used to investigate this was a qualitative approach, and the data collection was carried out by conducting 10 semi-structured interviews. The respondents were recruited mainly through a combination of convenience and snowball sampling. All respondents recruited had started actively investing in connection to the COVID-19 pandemic. The findings indicate that novice investors heavily rely on social media and use it as a shortcut to quickly gain financial knowledge and investment advice. Moreover, this reliance, combined with the influence of *external* IDMFs, results in irrational financial decisions. The first conclusion is that the inability of novice investors to filter valuable information from social media contributes to irrational financial decisions. The second conclusion is that novice investors must prioritize the development of a solid investment framework and financial foundation to prevent the risk of blindly following others' investments without understanding the associated risks.

Keywords

Financial markets, Investment behavior, Herd behavior, Social media, Modern financial theory, Dunning-Kruger effect, Four-Stage model, *External* IDMFs

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Markus Nilsson

Simon Aronsson

Table of Content

List of Figures:

List of Tables:

1. Introduction

> *Clara E: Well, I believe it was, [...] In January, February last year. Because prior to that everything had been so pumped up, and it felt like a house of cards crashing down. [...] Somewhere around then I understood that everything is not just going up and you have to, well, be ready that it can get volatile.*

On Monday the 24th of February 2020, the financial markets started to plummet (Appendix F: Index; Heyden & Heyden, 2020). During the weekend the spread of the COVID-19 virus increased and its future impact on global trade had now entered the minds of investors (Smales, 2021). Flight to safety was activated and a rapid sell-off started that made the S&P 500 and OMXS30 drop more than 30 percent in 23 trading days (from 2020-02-19 to 2020-03-23) (Appendix F: Index; Ali *et al.*, 2020; Heyden & Heyden, 2020; Smales, 2021). For many, what looked like the end was also the opportunity of a lifetime. A generation had grown up in the aftermath of the great recession and had seen a 10-year-long bull market that gave rise to tech giants, social media, and cryptocurrencies which made friends millionaires (Olya, 2021; Shiller, 2020; Umoh, 2018). In the panic, many asset prices started to be perceived as low, and individuals who previously stood on the sidelines were now ready to enter the markets (Avanza, 2021; Fitzgerald, 2021; Jankiewicz, 2022). The rapid sell-off, combined with lockdowns, gave aspiring retail investors the time to educate themselves about financial markets and gain enough confidence to create their own accounts and press "buy."

Fast-forward three years to the spring of 2023, and there has been a large inflow of novice retail investors together with the to-date biggest liquidity injection from central banks and governments resulting in a rapid market comeback (Heyden & Heyden, 2020; Narayan *et al.*, 2021). Most markets printed new all-time highs within a few months after the crash, and then finally peaked at the end of 2021 (Appendix F: Index). Two of the things that defined the past three years are high market volatility and speculation bubbles. Some of the most common bubbles were found in clean tech (Ghosh *et al.*, 2022; Lehnert, 2022), cryptocurrencies (Chowdhury *et al.*, 2022; Maouchi *et al.*, 2022; Mnif *et al.*, 2022), and pump-and-dump schemes in smaller illiquid stocks (Costola *et al.*, 2021; Philander, 2023). One of the reasons

behind the increased volatility is the media attention financial markets have been receiving since the COVID-19 crash (Costola *et al.*, 2021; Haroon & Rizvi, 2020). The bubble literature (Aliber & Kindleberger, 2015; Li *et al.*, 2022; Shiller, 2002) agrees that the final run-up of the markets before a major downturn is usually catalyzed when the media focuses more on financial markets, which makes ordinary people start to invest. This increase in novice retail investors creates a liquidity inflow that drives prices well above reasonable value (Aliber & Kindleberger, 2015; Shiller, 2002).

Today, most of the speculation bubbles that were created during the pandemic euphoria (from the summer of 2020 to the winter of 2021) have been busted (Chowdhury *et al.*, 2022; Ghosh *et al.*, 2022; Maouchi *et al.*, 2022), which has resulted in a decline for most major indices from their peaks (Appendix F: Index). Thereafter, the first 10 months of 2022 were a grim period for novice investors... driven by fear of inflation, rate hikes, and hawkish central banks, combined with the war in Ukraine, investors have pivoted from risk assets to safer alternatives (Andersson, 2023; Forbes, 2022). The indices decline lasted until October 2022 and has since rallied (Appendix F: Index). In other words, it has been a turbulent time to enter the markets for novice retail investors, yet a record number have done so (Aggarwal *et al.*, 2021; Avanza, 2021, 2022; Chiah & Zhong, 2020; Smales, 2020).

It can be an emotional experience to invest in the stock market, mainly for novice retail investors who lack prior experience and knowledge (Chiah & Zhong, 2020; Griffith *et al.*, 2019; Nareswari *et al.*, 2021). The recent COVID-19 pandemic has brought unprecedented market volatility (Aggarwal *et al.*, 2021; Heyden & Heyden, 2020), and at the same time, led to an increase in retail investors in Sweden (Avanza, 2021, 2022; Chiah & Zhong, 2020; Smales, 2021), particularly among young adults aged 20-30 (Avanza, 2022, 2023). It is crucial to understand the emotional spectrum of these investors during high market volatility, as it can impact their investment decisions and overall financial well-being (Griffith *et al.*, 2019; Nareswari *et al.*, 2021). Previous studies suggest that investment decisions may not be fully rational and influenced by behavioral factors such as investor sentiment, over- and underreactions, overconfidence, salience, and herd behavior (Metawa *et al.*, 2019; Nareswari *et al.*, 2021). To simplify the use of investment decision-making factors (IDMFs) in this thesis, they were categorized into two groups: *external* and *internal* IDMFs. *External* IDMFs consist of herd behavior, investor sentiment, and salience, which are influenced by the investor collective and not controlled by individual investors. *Internal* IDMFs consist of overconfidence

and over- and underreactions and come from the investor's own decisions and are shaped by their knowledge, experiences, and goals.

1.1 Swedish Novice Retail Investors

This thesis focuses on the Swedish financial market and novice Swedish retail investors who started investing around the pandemic. One of Sweden's most popular brokerages, Avanza, had a record inflow of new customers during the pandemic (Avanza, 2021, 2022). Of these new customers, the mean age was 35 (Avanza, 2022) and approximately 35 percent were female (Euroclear, 2020, 2021). The largest increase was seen in the age range between 18 and 30, with 18-year-olds increasing unusually much (Avanza, 2023; Euroclear, 2022). In 2019, Avanza had a total of 976,400 customers and 222,222 of these were daily active users (Avanza, 2020). Then, in 2021, this number grew to 1,660,100 customers, where 500,000 were daily active users. (Avanza, 2022). One explanation for this increase in customers and daily active users is that the Swedish government recommended its citizens to work, study, and stay at home as much as possible. This pseudo-lockdown created more time spent online while the stock market received significant attention in the news and social media (Claeson & Hanson, 2021).

Avanza's customers will act as a proxy for the average Swedish retail investor's portfolio, which consists of most Swedish large-cap stocks, followed by US stocks, and then Norwegian stocks (Andersson, 2020). Around 57 percent of the portfolio consists of stocks, 27 percent of funds and ETFs, 11 percent of cash, and the remainder is a combination of other assets (Andersson, 2021, 2023). Of all customers, about 20 percent had only one company in their portfolio, 22 percent had between two and three, and 19 percent had between four and six different companies (Andersson, 2022). Furthermore, cryptocurrencies have become more popular among retail investors. About 25 percent of retail investors aged 18 to 30 have traded crypto during 2021 (Philander, 2023; Samsung Electronics Nordic AB, 2022). However, it is difficult to determine the exact average share of cryptocurrencies in Swedish retail investors' portfolios, due to limited information and anonymity.

In this thesis, the focus is on novice Swedish retail investors (hereinafter referred to as "novice investors") between the ages of 18 and 30 who entered the market during the pandemic. The minimum portfolio size should be 25,000 SEK based on the median portfolio size of investors in the chosen age span (Andersson, 2021). This study disregards whether the investor had any

prior savings accounts or funds and concentrates on those who actively opened an account to start to invest and/or trade on a regular basis.

1.1.1 Social Media and Novice Retail Investors

Social media has become a major source of financial information for young adults aged between 18 and 30 (Fekrazad *et al.*, 2022; Griffith *et al.*, 2019; Ricci & Sautter, 2023). According to Ricci and Sautter (2023), about 60 percent of millennials and GenZ investors belong to an online investment community where they develop a form of camaraderie and mutual trust among each other. Facebook, YouTube, and WhatsApp are the most used social media platforms in the world as of 2023-01-01 (Appendix G: Statista). Other popular social media platforms are TikTok, Instagram, Twitter, and Discord (Fekrazad *et al.*, 2022; Appendix G: Statista). To distinguish the different platforms and their purpose, they are categorized into two groups.

The first group of social media works as forums or online groups, where Facebook, Reddit, Discord, and Twitter are most prominent. In this group, the users can post and discuss specific topics related to the stock market (Ricci & Sautter, 2023). For example, the users can discuss a certain stock, or give each other recommendations. One of the biggest financial Facebook groups in Sweden has more than 142 thousand followers (Appendix H: Aktieraketer). The purpose of this first social media group is to provide a space for retail investors to discuss and together build a better collective understanding of financial markets (Ricci & Sautter, 2023). In contrast, the second group of social media is platforms such as Instagram, YouTube, and TikTok, where retail investors follow one or more individual investor(s), or "finfluencer(s)" (influencer who focuses on finance). A finfluencer functions as a leader that is perceived to possess more knowledge about a financial topic or company (Ricci & Sautter, 2023). It is common to see finfluencers sharing educational and informational recommendations with their followers, as well as openly sharing their portfolios, active trades, and providing specific company analyses (Ricci & Sautter, 2023). Social media accounts with 10 or 100 thousand followers are common, and one of Sweden's biggest Instagram finfluencer has more than 214 thousand followers (Appendix I: 100miljonersmannen).

The increased use of social media as a popular source of financial information (Fekrazad *et al.*, 2022; Griffith *et al.*, 2019; Ricci & Sautter, 2023), has led to herding and imitation of other investors, without fully understanding the risks (Costola *et al.*, 2021). Herd behavior, similar

to the other *external* IDMFs, is a phenomenon where people are influenced by the actions and thoughts of others, which makes them behave similarly without considering their own objectives (Ayoub & Balawi, 2022). This has emerged as a significant driver behind retail investors' decision-making in the financial market. According to Ayoub and Balawi (2022), herd behavior together with investor sentiment and salience, has a major impact on the stock market and its prices, as investors tend to make similar decisions as other investors without any fundamental change in the underlying asset (Long *et al.*, 2021; Metawa *et al.*, 2019; Nareswari *et al.*, 2021). A possible factor behind this increase of *external* IDMFs is that investors do not trust themselves and believe that they know less than other investors (Ayoub & Balawi, 2022).

1.2 Problematization

There has been a growing body of research on the behavior and psychology of experienced investors (Chiah & Zhong, 2020; Choijil, 2022; Metawa *et al.*, 2019; Nareswari *et al.*, 2021), however, not on novice and inexperienced investors. One area is researching herd behavior in financial markets, which has exponentially increased in the past three decades (Choijil, 2022). Rubesam and de Souza Raimundo Júnior (2022) researched herd behavior in ten countries' financial markets during the pandemic. They found limited evidence of herd behavior during this period, with only Italy, Sweden, and the United States displaying signs of herd behavior. The result that Sweden was one of the deviating countries, suggests that this is worth examining further. The concluding results from the literature indicate that there is no consensus regarding the causes of this phenomenon (Chiah & Zhong, 2020; Choijil, 2022; Metawa *et al.*, 2019; Nareswari *et al.*, 2021; Rubesam & de Souza Raimundo Júnior, 2022). Other studies have found that social media may be an underlying factor behind today's increase in *external* IDMFs where inexperienced retail investors tend to blindly follow investment recommendations without conducting any own research (Ayoub & Balawi, 2022; Costola *et al.*, 2021; Fekrazad *et al.*, 2023; Griffith *et al.*, 2019; Ricci & Sautter, 2023), although there is limited evidence why this is.

Scanning social media has become an important strategy for institutional and retail investors to gain insights into the sentiment and views of the investor collective (Fekrazad *et al.*, 2022; Griffith *et al.*, 2019). A recent study found that this might have severe consequences for the financial literacy of the general population, where only 30 percent of young retail investors demonstrate a basic understanding of financial concepts such as interest rates, inflation, and risk diversification (Ricci & Sautter, 2023). Moreover, 67 percent of novice investors consist

of millennials and GenZs, whereas 77 percent of these investors rely on social media for financial information (Ricci & Sautter, 2023). Liu *et al.* (2023) and Affuso and Lahtinen (2018) found that social media may have a major influence on investor sentiment, which in turn influences stock market quotes more than a real-time perception of the stock market does. Griffith *et al.* (2019) found that this effect of investor sentiment and emotions combined with the influence of media has become a key player in understanding financial markets. Although there is a consensus that social media have an impact on financial markets, there is no consensus regarding whether following investor sentiment, salience, and herd behavior on social media is an edge or a shortcut (Metawa *et al.*, 2019; Nareswari *et al.*, 2021).

To the best of our knowledge, no research focuses on the reasons behind the investment decisions of novice retail investors in Sweden, especially regarding social media and *external* IDMFs. The fact that Swedish investors differed from other countries during the pandemic (Rubesam & de Souza Raimundo Júnior, 2022) makes it worth exploring further. Previous studies have primarily used quantitative methods to explore this subject (Affuso & Lahtinen, 2018; Fekrazed *et al.*, 2022; Metawa *et al.*, 2019; Nareswari *et al.*, 2021), however, these methods cannot capture the complexity and nuances of emotional experiences (Griffith *et al.*, 2019). A qualitative approach is particularly relevant for novice retail investors, who are likely to have a more diverse range of emotional experiences than experienced investors. The problem with the lack of research on the emotional spectrum and influence of *external* IDMFs is that it can lead to an incomplete understanding of the psychological impact of market turbulence on the target group (Griffith *et al.*, 2019). It cannot be ruled out that some literature has been overlooked. Efforts were made to revise and single out the most relevant articles for the purpose of the thesis, which is to contribute to the existing literature by investigating how novice Swedish retail investors' financial decisions were influenced by social media and *external* IDMFs during the recent stock market volatility (2020-2023).

1.3 Purpose and Research Question

This study aims to understand the influence of social media and *external* IDMFs (herd behavior, investor sentiment, and salience) on the financial decision-making of novice Swedish retail investors during the recent stock market volatility (2020-2023).

The research question is: How do social media and external IDMFs influence novice retail investors' decisions in financial markets?

2. Theoretical Background

In the second chapter, two theoretical models are introduced to understand how novice retail investors (hereinafter referred to as "novice investors") learn about financial markets, and then use these insights to understand what influences their investment decisions. The first model is the *Four-Stage model* (also known as the *Four Stages of Learning*), introduced by Noel Burch (1970), which describes investors' approach to learning. The second model is the *Dunning-Kruger effect* introduced by David Dunning and Justin Kruger (2000), which illustrates investors' relationship between confidence and experience. In addition to these two models, *internal* and *external* investment decision-making factors (IDMFs) are presented. Finally, the models have been integrated into a conceptual model that illustrates the stages novice investors experience when they enter the financial market and how their financial decisions are influenced by social media and *external* IDMFs.

2.1 The Four Stages of Learning

The *Four Stages of Learning*, or the *Four-Stage model*, proposes that when humans initially try to learn a new skill, they are unaware of how little they know (Burch, 1970). According to Biswas (2018) and Burch (1970), the first stage of the *Four-Stage model* is *unconscious incompetence*, where a learner does not know what to do and has no direct experience. The first stage can be explained by the sentence "I don't know that I don't know how to do it." In this stage, the learner does not realize that there is a gap in their skill or knowledge (Biswas, 2018; Burch, 1970). The second stage is *conscious incompetence*, where the learner becomes aware of the skill or knowledge gap and understands the importance of acquiring the new skill. The second stage can be explained by the sentence "I know that I don't know how to do it, and it bothers me." The second stage marks the beginning of the learning process (Biswas, 2018; Burch, 1970). In the third stage, *conscious competence*, the learner knows how to use the skill or perform the task, though it still requires practice, conscious thought, and hard work. The sentence for the third stage is "I know that I know how to do it, and it took me time." (Biswas, 2018; Burch, 1970). Finally, the fourth stage is *unconscious competence*, where the learner has enough experience with the skill that they can perform it easily and unconsciously. The

sentence for this final stage is "I know that I can do it, and it is second nature to do it" (Biswas, 2018; Burch, 1970).

According to Biswas (2018), everyone goes through the four stages in the *Four-Stage model* when they learn something new. Awareness of these stages can help new learners to better accept that learning can be a slow and frequently uncomfortable process (Burch, 1970; Chang *et al.*, 2000). When people begin to recognize their incompetence, they consciously strive to acquire the skill. Finally, people learn and develop the skill to such a level that they can execute it unconsciously (Burch, 1970). Biswas (2018) used the *Four-Stage model* to investigate how human resource managers could use the model to better understand their employee's development. During this investigation, Biswas (2018) proposed the *Four-Stage model* as a cyclical framework, which implies that humans are never done learning.

2.2 The Dunning-Kruger Effect

In 1999, Dunning and Kruger (2000) created a model which describes psychological behavior in the early stages of learning. The cognitive bias is called the *Dunning-Kruger effect* and describes how people tend to over- or underestimate their expertise. The research showed that people with low expertise often lack the knowledge and skills to accurately evaluate their own performance, leading them to overestimate their expertise. Contrary to people with less knowledge, people with more knowledge and high expertise tend to underestimate themselves and never stop trying to attain more knowledge (Dunning & Kruger, 2000).

The *Dunning-Kruger effect* is illustrated in a diagram with confidence (low to high) on the vertical axis and knowledge (low to high) on the horizontal axis (Appendix: Dunning-Kruger Effect; Dunning & Kruger, 2000). When people learn something new, they usually have low confidence and low competence. However, when the learner gains a little more experience and competence, their confidence tends to increase rapidly. According to Dunning and Kruger (2000), this rapid increase in confidence results in the learner overestimating their own competence, which can lead to irrational and risky decisions. Furthermore, these decisions usually lead to a mistake that makes the learner understand that they do not know as much as they thought they did. This realization leads to a significant fall in confidence and ends in a trough called the *Valley of Despair* (Appendix: Dunning-Kruger). After the *Valley of Despair*, the learner's confidence slowly starts to regain as the individual continues to learn and gain more experience in the specific area, which is called the *Slope of Enlightenment* (Appendix J:

Dunning-Kruger Effect). In the end, the individual reaches the *Plateau of Sustainability* (Appendix: Dunning-Kruger). This stage represents a high level of competence which also justifies a higher level of confidence (Dunning & Kruger, 2000).

2.2.1 Development of The Dunning-Kruger Effect

The *Dunning-Kruger effect* has been used and developed by multiple researchers in the last 20 years. An article by Schlösser *et al.* (2013), investigated an alternative explanation for the *Dunning-Kruger effect*. The authors investigated "signal extraction" which suggests that individuals with lower competence in a particular area are not necessarily overconfident. Instead, individuals with less competence are rather less able to accurately extract relevant information from their environment to assess their own abilities. The results of the investigation and development of the *Dunning-Kruger effect* were that people with low competence tend to overestimate themselves and have difficulty separating their own performance from the performance of others.

The *Dunning-Kruger effect* has been used in a wide range of topics, such as how the relationship between experience and confidence can be applied to financial markets (Balasubramnian & Sargent, 2020; Fleming & Mazor, 2021; Gignac, 2022). According to Gignac (2022), people who have higher levels of financial knowledge tend to have higher levels of confidence in their financial decision-making. Furthermore, another study by Balasubramnian and Sargent (2020) examines and presents how people's overconfidence in their financial literacy can impact their financial decision-making. The result exhibits that the participants who overestimate their financial literacy made riskier financial decisions and were more likely to fall for financial scams. Likewise, a study by Fleming and Mazor (2021) reveals that highly confident finance professionals were more likely to make risky investment decisions that yielded poor results, as they overestimate their abilities. Fleming and Mazor (2021) also suggest that this may explain why some finance professionals rely too heavily on intuition and therefore miss crucial information necessary to make well-informed and rational decisions. Moreover, Fleming and Mazor's (2021) study demonstrates that investors with high confidence in their own judgment and abilities were less likely to seek advice from others or accept feedback. Finally, the *Dunning-Kruger effect* suggests that self-awareness and willingness to learn and improve are key factors in moving from early stages with a lack of knowledge to later stages with high expertise (Dunning & Kruger, 2000).

2.3 Investment Decision-Making Factors (IDMFs)

Investment decision-making is the process of analyzing information to make optimal investment decisions, *i.e.*, buy, sell, and/or hold certain assets, with the goal of maximizing financial returns (Abrahamson, 2016; Metawa *et al.*, 2017; Nareswari *et al.*, 2021). Traditional literature assumes that investors make rational decisions based on the expectation of updating their beliefs on new information and maximizing expected returns for a given level of risk (Metawa *et al.*, 2017).

The two main investment decision-making theories are *classical financial theory* and *modern financial theory* (Nareswari *et al.*, 2021). The classical financial theory is based on fundamental analysis and the efficient market hypothesis, which assumes that investors make rational decisions and that market prices reflect all the information available to investors (Nareswari *et al.*, 2021). On the other hand, modern financial theory suggests that investors sometimes make irrational decisions due to behavioral biases and emotions (Griffith *et al.*, 2019), which emerge due to the investor's limited ability to perform technical and fundamental analysis (Nareswari *et al.*, 2021). Furthermore, studies have shown that psychological and behavioral factors play a more dominant role in investment decisions than fundamental or technical analysis (Griffith *et al.*, 2019; Nareswari *et al.*, 2021), which increases the likelihood of irrational decisions. However, as investors gain more investment experience, they tend to become less influenced by their emotions (Metawa *et al.*, 2017). According to Metawa *et al.* (2017) and Nareswari *et al.* (2021), the most significant factors that determine an investor's decision-making process are investor sentiment, investor overconfidence, salience, over- and underreactions, and herd behavior. There are also other factors that determine investment decisions, such as age, gender, income, and education level (Abrahamson, 2016; Metawa *et al.*, 2017).

2.3.1 Investor Sentiment

Investor sentiment is the investors' confidence in financial markets and companies' future prospect, cashflows, discount rates, and trends, that is not supported by fundamentals (Metawa *et al.*, 2017; Nareswari *et al.*, 2021). According to Lee *et al.* (1991), investor sentiment is a key factor that affects an individual investor's decision-making. Moreover, Brown and Cliff (2004) found that investor sentiment is highly correlated with the volatility of market returns. Market returns are in turn closely related to a high level of optimism or pessimism from an investor regarding individual stocks and market conditions (Brown & Cliff, 2004). Mian and Sankaraguruswamy (2012) found that sentiment moves stock prices in response to news in the

direction of the sentiment, however, this price response is more apparent in the case of small, volatile, young, non-dividend paying, and distressed stocks (Metawa *et al.*, 2017; Mian & Sankaraguruswamy, 2012).

Liu *et al.* (2023) found a significant synergy between investor sentiment and stock prices, however, this synergy could be positive, neutral, or negative, depending on specific time periods. Liu *et al.* (2023) also found that although social media sentiment tends to be forward-looking, specific stock price indices do not have a higher synergy with real-time social media sentiment. In contrast, Fekrazad *et al.* (2022) found that positive (negative) Twitter posts about a specific company led to higher (lower) returns and an increase in volume for the company's stock; suggesting that social media impact investor sentiment in timeframes larger than one hour. Studies have looked at how previous returns influence investor sentiment, which influence future returns, creating a feedback loop that makes positive (negative) news increase (decrease) the stock's return beyond the fundamental change (Fekrazed *et al.*, 2022; Griffith *et al.*, 2019; Liu *et al.*, 2023). It was observed that Twitter influence stock trading, mainly among smaller and illiquid stocks, which are primarily traded by retail investors (Fekrazad *et al.*, 2022). McGurk *et al.* (2020) found that Twitter-based investor sentiment can improve forecast accuracy and that investor sentiment plays a role in determining the cross-section of abnormal stock returns (Fekrazad *et al.*, 2022; Liu *et al.*, 2023; McGurk *et al.*, 2020). The increased usage of social media provides information on individual investor's feelings and opinions, which makes investor sentiment more easily accessible for researchers and other investors (McGurk *et al.*, 2020).

2.3.2 Investor Overconfidence

Overconfidence is a phenomenon where investors tend to overestimate their chances of success and underestimate the risks involved in their investment decisions (Hirshleifer *et al.*, 2012; Metawa *et al.*, 2017). Overconfidence can lead to an overestimation of individual skills and prospects, which can negatively impact investment decisions and lead to irrational investments (Dittrich *et al.*, 2005). However, Wang (2001) suggests that moderate overconfidence can be beneficial in certain scenarios. The author found that moderately overconfident investors can survive or even dominate the market in a large risk-taking scenario. Conversely, Besharov (2004) found that in the absence of accurate information, overconfident choices do not necessarily lead to suboptimal outcomes (Metawa *et al.*, 2017). Investors who perceive themselves as having high competence in financial markets tend to trade more frequently

(Christanti & Mahastanti, 2011). Furthermore, overconfidence can also result in biased market prices, inaccurate stock market predictions, and low investment returns due to a failure to diversify portfolios appropriately (Kufepaksi, 2007; Nareswari *et al.*, 2021).

Gervais and Odean (2001) found that traders, in the early stages of their careers, tend to overestimate their own success. This overestimation may lead to overconfidence which later diminishes as the trader gains more experience (Dunning & Kruger, 2000; Metawa *et al.*, 2017; Schlösser *et al.*, 2013). Gender differences in investment behavior have also been observed, where male investors tend to be more susceptible to overconfidence (Abrahamson, 2016; Barber & Odean, 2001). Furthermore, young, male investors that have lower portfolio value and come from less developed regions in terms of education and income tend to display even higher levels of overconfidence and bias in their trading behavior (Metawa *et al.*, 2017; Tekçe *et al.*, 2016). According to Ricci and Sautter (2023), personal finance education does not increase financial literacy. The authors suggest that this might lead to overconfidence and over-optimism, which results in worse financial decisions compared to investors with academic financial education.

Today, most millennials and GenZs receive their financial education from social media (Ricci & Sautter, 2023). Philander (2023) studied the behavior behind investors that traded highly speculative "meme stocks" based on information from social media and found that they had a higher tendency to either gamble or be overconfident, which is most likely due to a lower understanding of financial markets. If a respondent did not own any meme stocks, they displayed low confidence in their investment abilities, while the more meme stocks a respondent owned, the higher the probability of overconfidence (Philander, 2023).

2.3.3 Salience

Salience is the tendency to choose a familiar (salient) option over an unfamiliar one, which has been shown to have a significant influence on short-term and long-term investment decisions (Chaudary, 2018; Yalcin *et al.*, 2016). Investors may use salience to simplify investment decision-making, especially in times of high volatility or when choosing among several options that require judgment, analysis, and effort (Chaudary, 2018; Nareswari *et al.*, 2021; Yalcin *et al.*, 2016). Studies have shown that investors tend to invest in companies they are more familiar with, which increases their confidence and optimism (Abrahamson, 2016; Huberman, 2001). Salience is particularly evident among less experienced retail investors who are more receptive

to signals such as positive media (social or traditional) attention (Suatter & Ricci, 2023; Yalcin *et al.*, 2016). According to Fekrazad *et al.* (2022), scanning social media sentiment and topics on forums such as Reddit has become an important strategy for both institutional and retail investors. The tendency of salience suggests that investors rely on shortcuts to simplify their decision-making process and do not collect all the relevant information (Nareswari *et al.*, 2021).

2.3.4 Over- and Underreaction

The impact of investors' over- and underreactions on investment decision-making has been debated in the literature for several decades (Metawa *et al.*, 2017; Nareswari *et al.*, 2021). De Bondt and Thaler (1985) argue that investors systematically overreact to unexpected news, violating market efficiency, as they assign high importance to past performance and ignore mean-reversion tendencies (De Bondt & Thaler, 1985; Metawa *et al.*, 2017). Griffith *et al.* (2019) found that investors overreact to good news while underreacting to bad news, which indicates that investors are not fully rational in their investment decisions. In addition to this, investors tend to overvalue positive or negative news, causing excessive fluctuations in stock prices (Nareswari *et al.*, 2021). According to Griffith *et al.* (2019), two of the most famous financial anomalies—momentum and price reversal—can be explained by investors' over- and underreactions. Furthermore, this factor combined with overconfidence, results in investors overestimating their understanding of the stock's value, while underestimating public signals, which leads to reinforced bias that leads the investor to make irrational financial decisions (Daniel *et al.*, 1998; Metawa *et al.*, 2017).

The increased use of social media has made it an essential player to communicate financial information. According to Griffith *et al.* (2019), the use of wording and tone in influential posts impacts investors' investment decisions. It was found that high media pessimism predicts a downward pressure on market prices, and negative wordings about a stock's fundamentals have in the short run higher predictive power than earnings, which may lead to overreactions (Griffith *et al.*, 2019).

2.3.5 Herd Behavior

Herd behavior, or herding, is a phenomenon where people are influenced by the actions and thoughts of others in a group, which leads them to behave similarly without considering their own objectives (Ayoub & Balawi, 2022). Herding is common in financial markets where investors tend to follow the actions of other investors (Metawa *et al.*, 2019; Nareswari *et al.*,

2021). Previous studies have observed herd behavior in a range of investors, from novice or experienced retail investors to professional and institutional fund managers (Metawa *et al.*, 2017; Nareswari *et al.*, 2021). Social media is discussed to be an underlying factor behind today's herd behavior in financial markets (Costola *et al.*, 2021; Griffith *et al.*, 2019; Ricci & Sautter, 2023), where inexperienced retail investors tend to blindly follow investment recommendations without conducting any own research (Ayoub & Balawi, 2022). According to Ayoub and Balawi (2022), herd behavior has a major impact on the stock market, as investors tend to make similar decisions as other investors without any fundamental changes in the stock (Ayoub & Balawi, 2022; Long *et al.*, 2021). The authors suggest that an underlying factor behind this is that investors do not trust themselves and believe that they know less than other investors (Ayoub & Balawi, 2022). Moreover, when herd behavior is overconfidence, it may encourage investors to take excessive risks that can result in increased market volatility (Metawa *et al.*, 2017).

Rubesam and de Souza Raimundo Júnior (2022) researched herding in ten countries' financial markets during the pandemic and found limited evidence of herding during this period, although it was an intense period of high volatility, uncertainty, and panic. Only Italy, Sweden, and the United States displayed signs of herding. Nareswari *et al.* (2021) state that herding is more common in developed markets, while Hwang and Salomon (2004) state that herding is more common in bull markets and does not tend to be present in times of panic. Based on this, Rubesam and de Souza Raimundo Júnior (2022) concluded that the severity of the pandemic and the intervention of governmental policies affected the degree of herding in the respective market. However, studies describe a problem with examining herd behavior in financial markets. It is difficult to define whether the actions from investors happen because they follow other investors (the herd), or simply react in the same way to the same information (Choi & Skiba, 2015; Mohamad & Stavroyiannis, 2022). Previous studies have discussed herd behavior as a way for investors to find comfort and certainty in periods of information overflow... that investors use herd behavior to confirm their own biases as well as a filter to better interpret the quality of released information (Bikhchandani & Sharma, 2001; Hirshleifer, 2001; Metawa *et al.*, 2017).

2.3.6 External vs. Internal IDMFs

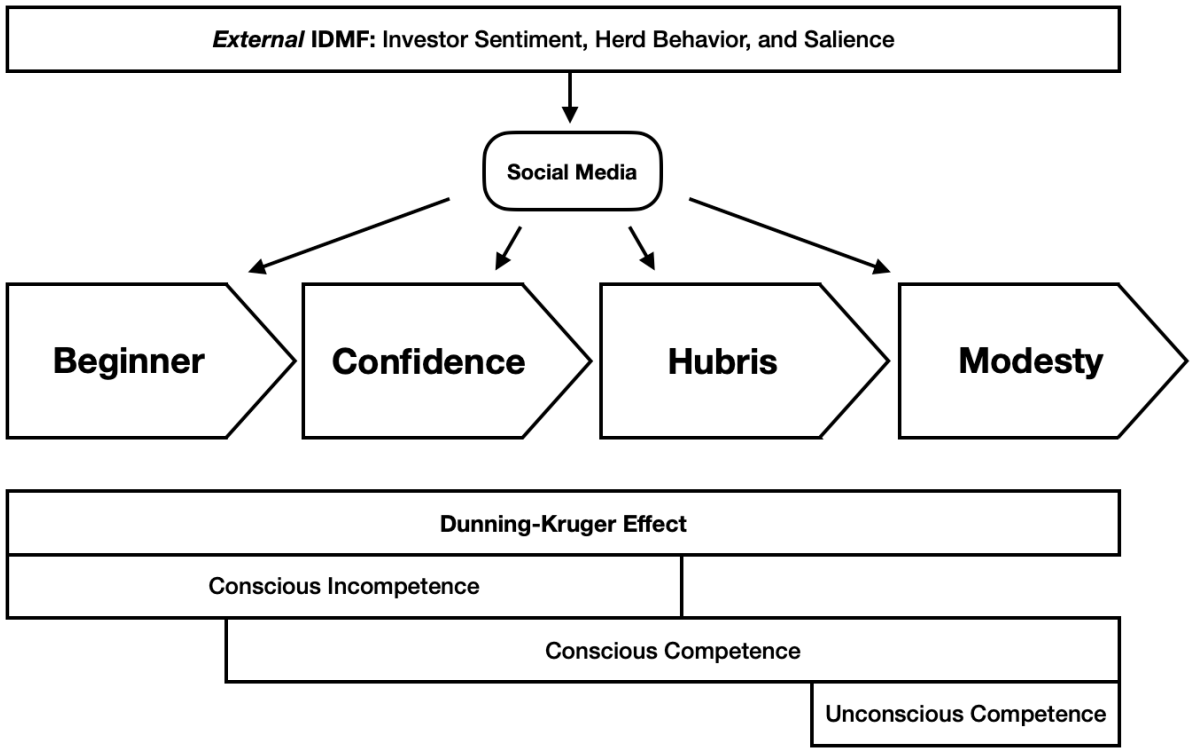
To simplify the future use of investment decision-making factors (IDMFs) in this thesis, they were categorized into two groups: *external* and *internal* IDMFs. The *external* IDMFs consist of herd behavior, investor sentiment, and salience. These factors are categorized together because they result from the investor collective, and individual investors can decide to follow or go against them. The individual investor does not control the *external* IDMFs, however, they can be influenced by them. For example, the investor may be influenced by general investor sentiment, such as whether the market views are optimistic or pessimistic. An investor can also be influenced by herd behavior in a specific stock, such as whether most investors are deciding to buy or sell. Finally, salience refers to situations where an investor might only find a stock due to increased attention in the media or a financial forum. These *external* IDMFs are happening outside the control of the investor yet are likely to influence their decisions. Social media becomes an important tool to access *external* IDMFs signals since they happen outside the investor's sphere.

In contrast, the *internal* IDMFs, such as overconfidence, and over- and underreactions, result from the investor's own decisions and come from within. If the investor has had previous success, they might gain more confidence, which could result in overconfidence. If the investor reads an annual report or hears about an economic event they do not fully understand, they might over- or underreact to the signal. These *internal* IDMFs come from the investor and result from their experiences, goals, and knowledge. Social media is not necessary for *internal* IDMFs to occur. However, if an investor decides to share their interpretations and decisions through social media, then their *internal* IDMFs can become another investor's *external* IDMFs.

2.4 Conceptual Model

To answer the research question, it is important to first understand how novice retail investors learn about financial markets, and then use these insights to understand what influences their investment decisions. For this reason, a conceptual model was created that consists of a sequence of four stages: *Beginner*, *Confidence*, *Hubris*, and *Modesty*. These stages are based on elements from the *Four-Stage model*, the *Dunning-Kruger effect*, and *external* IDMFs: investor sentiment, herd behavior, and salience. From the *Four-Stage model*, the three last states: *conscious incompetence*, *conscious competence*, and *unconscious competence*, were used. These stages describe how novice investors understand what needs to be learned, complemented by self-reflection over the learning process. From the *Dunning-Kruger effect*, the relationship between experience and confidence is used to understand the emotional journey a novice investor experiences when entering financial markets. Finally, the *external* IDMFs are used to explain how other investors' actions and opinions through social media influence the novice retail investor's investment decisions.

Figure 1:
Illustration of the Conceptual Model



Note: Figure 1 illustrates the conceptual model, showing the sequence of the four stages (*Beginner, Confidence, Hubris,* and *Modesty*) in order. Above the sequence are the *external* IDMFs, that connect to each stage via social media. Below the sequence are the two academic models: the *Dunning-Kruger effect* and the three stages *conscious incompetence*, *conscious competence*, and *unconscious competence*, from the *Four-Stage model.*

Figure 1 illustrates the conceptual model, showing the sequence of the four stages (*Beginner, Confidence, Hubris,* and *Modesty*) in order. Above the sequence are the *external* IDMFs, that connect to each stage via social media. All *external* IDMFs are prominent at each stage, however, they become less influential after *Hubris* and have little influence in *Modesty*. Below the sequence are the two academic models: the *Four-Stage model* and the *Dunning-Kruger effect*. Both academic models are relevant throughout the entire sequence, however, different stages from the *Four-Stage model* are prominent at different stages, as illustrated by the model.

2.4.1 Beginner, Confidence, Hubris, and Modesty

The *Beginner* stage is characterized by a lack of knowledge and experience of financial markets. From the *Four-Stage model*, *conscious incompetence* is applied, which means that the novice investor is aware of their lack of knowledge, however, unaware of what they do not know. In the *Dunning-Kruger effect,* both experience and confidence are low. Investment decisions are influenced by all *external* IDMFs, which leads to over- and underreactions (due to the novice investor not understanding the market signals). At this stage, it is rational for the novice investor to take advantage of *external* IDMFs and access them using social media, since they can learn from more experienced investors while trying to navigate financial markets.

As the novice investor gains more knowledge about financial markets and possibly has succeeded in previous investments, confidence starts to grow, which can lead the novice investor to start taking more risks. The *Confidence* stage is characterized by the investor's growing confidence and a willingness to take on more risk, which may lead to an impatient pursuit of financial gains. From the *Four-Stage model*, both *conscious incompetence* and *conscious competence* are applied, where the increase in confidence bridges the gap between these two stages. From the *Dunning-Kruger effect*, there is a rapid increase in confidence as the investor gains more experience, which is likely to lead to overconfidence. Investment decisions are still influenced by all *external* IDMFs and are most likely accessed through social media due to their convenience. Although the novice investor relies on the *external* IDMFs, due to the increase in confidence, the novice investor starts to use the *external* IDMFs more to support their own biases. Additionally, there is an increased risk of making irrational investments due to over- and underreactions, overconfidence, and trusting the investor collective (the herd).

In the *Hubris* stage, the novice investor has achieved peak overconfidence and believes that financial markets are "easy." The novice retail investor takes higher risks, has limited diversification, and makes more irrational investment decisions. From the *Four-Stage model*, *conscious incompetence* transitions into *conscious competence*, where the investor starts to feel more in control and believe that they understand the markets well. However, based on the *Dunning-Kruger effect*, this is the peak in confidence that precedes the *Valley of Despair* (*i.e.*, the mistake that leads to the realization that it was not as easy as perceived) (Appendix J: Dunning-Kruger Effect). In this stage, investment decisions are still influenced by all *external* IDMFs and accessed through social media. However, the difference in this stage, compared to previous stages, is that the novice investor is using the *external* IDMFs to reinforce their own bias. Due to the increase in confidence, there is a high probability of irrational investment decisions due to overconfidence, increased risk-taking, limited diversification, and over- and underreactions.

If the novice investor stays in the *Hubris* stage long enough, they will eventually make a bad investment decision or become subject to a major market downturn. This can work as a wake-up call that the markets are not as easy as previously perceived and can either result in an increase in respect for the unpredictability of financial markets or an exit. If it leads to an increase in respect the novice investor advances to the *Modesty* stage. The *Modesty* stage is characterized by a heightened awareness of risks and a disciplined approach. The stages of *conscious competence* and *unconscious competence* from the *Four-Stage model* are applied. From the *Dunning-Kruger effect*, the *Modesty* stage is illustrated by the *Slope of Enlightenment* (Appendix J: Dunning-Kruger Effect), which comes after the *Valley of Despair* and turns into a stable and moderate increase in confidence as the investor gains more experience. However, the novice investor is not likely to return to the same peak levels of confidence as in the *Hubris* stage. This is because, after the downturn, the investor will be more conscious of the potential risks and rewards of investing and is less prone to acting on impulse, emotions, or unfounded recommendations and analysis. Now, the investor understands the importance of diversification and risk management and is more likely to take a long-term approach to investing. Furthermore, the novice investor's financial decisions are still influenced by all *external* IDMFs. However, it is now done in a more balanced state where the investor can better understand *external* signals in symbiosis with their own analysis, and how these *external* IDMFs interact and influence the market. This rational view makes the novice investor less

prone to following the herd, has fewer over- and underreactions, and can more easily decipher whether social media discussions are informative or attempted manipulations.

2.4.2 Summary of the Conceptual Model

In the conceptual model (Figure 1), the novice investor starts in the *Beginner* stage, moves through *Confidence* and *Hubris*, and finally ends in *Modesty*. However, although this is the most likely sequence, the investor might stay in the *Beginner* stage throughout their entire investment career without advancing to the next stages. At the same time, the investor might reach the *Confidence* or *Hubris* stage, and then make a poor investment decision that detracts the investor back to previous stages or forces them to exit the financial market. It is likely a bad investment decision that is going to end the *Hubris* stage, however, whether the novice investor learns from their mistakes becomes key to whether they will advance to *Modesty* or retract. Finally, once the investor reaches the *Modesty* stage, there are no guarantees to stay there. It is important to note that this is not a static and simple concept, but rather a continuously evolving model where the novice investor might iterate multiple times through the different stages, influenced by their investment decisions and *external* IDMFs.

Table 1 presents the conceptual framework of this thesis, with the four stages and their respective *external* IDMFs, theoretical models, descriptions, and references. The conceptual framework and model will be used to answer the research question of how social media and *external* IDMFs influence novice investors' decisions in financial markets. The theoretical models will serve as an understanding of how novice investors learn about financial markets, while the *external* IDMFs will serve as a basis to explain how other investors' actions and opinions through social media influence the novice retail investor's investment decisions.

Table 1:
Summary of the Conceptual Framework

Stages:	*External* IDMF*:*	Theoretical Model:	Description:	References
1. Beginner	Major Influence	Dunning-Kruger Effect Four-Stage Model: Conscious Incompetence	*Beginner* is characterized by a lack of knowledge and experience in financial markets. At this stage, the investor is unaware of what they do not know. Here it is more advantageous to follow more experienced investors and use social media as a tool to find information.	Burch, 1970; Balasubramnian & Sargent, 2020; Dunning & Kruger, 2000; Gignac, 2022; Metawa *et al.*, 2017; Nareswari *et al.*, 2021)
2. Confidence	Major Influence	Dunning-Kruger Effect Four-Stage Model: Conscious Incompetence; Conscious Competence	*Confidence* is characterized by the investor's growing confidence and a willingness to take on more risk, which may lead to an impatient pursuit of financial gains. Investment decisions are still influenced by all external IDMFs and are most likely accessed through social media due to their convenience.	Burch, 1970; Balasubramnian & Sargent, 2020; Dunning & Kruger, 2000; Gignac, 2022; Metawa *et al.*, 2017; Nareswari *et al.*, 2021)
3. Hubris	Less Influence	Dunning-Kruger Effect Four-Stage Model: Conscious Competence	*Hubris* is characterized by "peak overconfidence", and the novice investor believes that financial markets are "easy." The novice retail investor takes higher risks, has limited diversification, and makes more irrational investment decisions.	Balasubramnian & Sargent, 2020; Dunning & Kruger, 2000; Gignac, 2022; Metawa *et al.*, 2017; Nareswari *et al.*, 2021)
4. Modesty	Small Influence	Dunning-Kruger Effect Four-Stage Model: Conscious Competence; Unconscious Competence	*Modesty* is characterized by a heightened awareness of risks and a disciplined approach. Here, the novice investor has developed a modest approach towards risk, financial markets, and diversification, which sets a solid foundation for future success.	Burch, 1970; Balasubramnian & Sargent, 2020; Dunning & Kruger, 2000; Gignac, 2022; Metawa *et al.*, 2017; Nareswari *et al.*, 2021)

Note: This is the thesis's conceptual framework, presenting the stages in the conceptual model (*Beginner, Confidence, Hubris, and Modesty)* and how these are linked with the *external* IDMFs and the two theoretical models (the *Four-Stage model* and the *Dunning-Kruger effect*). Column four presents a description of each stage, and column five consists of the relevant references.

3. Methodology

In the third chapter, the data collection method is presented and discussed. The *qualitative* method interviews were deemed most suitable since the aim of this thesis was to study how social media and *external* investment decision-making factors (IDMFs) influence novice retail investors' financial decisions. Ten interviews were conducted to gain insights into the respondents' investment experiences and decision-making processes. The interview guide as well as the selection of respondents are presented and guided by relevant literature. Finally, the analysis of the empirical data, limitations, and trustworthiness with the utilized method is presented.

3.1 Research Design

In the following section, the methodology adopted in the thesis is presented. Moreover, the research purpose and design, philosophy, and approach are discussed, as well as the link between the theory and the empirical findings.

3.1.1 Research Purpose, Approach, and Philosophy

The research purpose of this thesis was to examine how social media and external IDMFs influence novice investors' decisions in financial markets. To achieve this, an exploratory design was employed, which involves the use of questions to gain an understanding of the subject (Bryman & Bell, 2011). The use of an exploratory design also implies that the study was not intended to provide final conclusive solutions to the research question and is therefore receptive to new information which depends on the results and insights gained (Ahrne & Svensson, 2015).

An *abductive* approach was considered most suitable since it combines prior knowledge within the field with the study's unique findings. Previous studies were either inconsistent or had not explored how different *external* IDMFs combined with social media influence the financial decisions of novice investors. According to Bryman and Bell (2011), the different research approaches—*inductive*, *deductive*, or *abductive*—serves as the connection between the theory and the conducted research. An *inductive* approach derives theories from empirical findings,

while a deductive approach utilizes hypotheses based on existing literature within the field in question. However, an *abductive* approach can be described as a hybrid between the *inductive* approach and the *deductive* approach and is used when the literature provides mixed results on a given topic (Bryman & Bell, 2011), which aligns with the topic of this thesis.

A qualitative approach was deemed most suitable since the aim was to gain knowledge about how social media and *external* IDMFs influence novice retail investors. Previous research within the area is mainly quantitative; therefore, a qualitative approach would contribute to a better understanding of the respondents' experiences and emotional journeys in financial markets. The qualitative approach emphasizes the importance of words and is typically associated with smaller-scale studies, where the researcher can gain more in-depth knowledge from fewer respondents (Denscombe, 2019). On the other hand, the quantitative approach is focused on quantifying the empirical data of a larger sample size (Denscombe, 2019) and aims to identify explanations for the current state of the world and the intentions of the people within it (Bryman & Bell, 2011). Furthermore, there is a difference between research philosophies (how the researchers view the world), based on whether the study is qualitative or quantitative (Bryman & Bell, 2011). Qualitative research's main concept is epistemology, which refers to researchers' views on the theory of knowledge and how knowledge about reality can be sought (Bryman & Bell, 2011). On the other hand, in quantitative research, the main concept is ontology, which focuses on what exists and how reality is constituted (Bryman & Bell, 2011).

An epistemological philosophy was adopted since the research question is addressed using qualitative methods. Epistemology can be further categorized into *positivism*, *interpretivism*, or *realism* (Bryman & Bell, 2011; Denscombe, 2019). These philosophical perspectives would determine the choice of research strategy and methods. *Positivism* uses methods from natural science and applies an objective approach to understanding the world. *Interpretivism* focuses on the respondents' experiences and beliefs to generate knowledge (Bryman & Bell, 2011). Finally, *realism* assumes that an external reality influences humans' perception of the world (Bryman & Bell, 2011). The concept of *interpretivism* was considered most suitable since the purpose was to understand novice investors' experiences and what influence their financial decisions.

3.2 Data Collection

This section will discuss the research method used when the study was carried out. It will also provide information on how the data was collected and describe the selection of respondents. Lastly, it describes the interview guide and the interview practices.

3.2.1 Research Method

To gain a more in-depth understanding of the respondents' investment experiences and how they were influenced by *external* IDMFs and social media, interviews were chosen as the qualitative data collection method. According to Denscombe (2019), interviews are ideal when the researcher aims to obtain more in-depth knowledge from fewer respondents. There are advantages and disadvantages to consider when using interviews. The advantages include the ability to receive qualitative answers, where respondents explain in detail how they behaved during certain investment situations and decisions. This level of detail is not possible in surveys, where respondents are limited in their choices or need to provide written answers. During interviews, respondents can freely express themselves and use their voice and body language to convey emotions and feelings. Additionally, the gain of in-depth knowledge from fewer respondents is believed to be more valuable for addressing the thesis's purpose compared to broader empirical data collection from a larger sample size (Bryman & Bell, 2011). Furthermore, Denscombe (2019) states that the interviewer has control over the entire interview, which enables the interviewer to clarify confusion or redirect the conversation if the answer deviates from the topic.

One disadvantage to consider is the interview effect, which refers to the influence of the interviewer on the respondent. Factors such as nervousness, social desirability bias, or pressure to impress the interviewer can affect the validity and reliability of the results (Denscombe, 2019). To minimize this effect, efforts were made to create a relaxed atmosphere with all respondents. Our goal was to make the conversations and questions feel natural and resemble a friendly conversation, rather than an interrogation. Denscombe (2019) states that there is a difference between a good interview and a friendly conversation; therefore, the interview guide helped to keep the interviews on track and provided a predetermined structure. Additionally, the audio and video of the interviews were recorded through Zoom, which allowed for the analysis of body language and the identification of signs of discomfort or distress. According to Denscombe (2019), recorded interview sessions can initially make the respondent uneasy. The advantage of using Zoom is that it has become a common meeting tool during the

pandemic, which increases the likelihood that the respondents are accustomed to this type of setting and feel more relaxed in the comfort of their homes. The advantages of using Zoom mainly include the convenience it offers, as well as the ability to record body language, which can provide further insights into the respondent's attitudes and feelings toward specific topics and highlights any potential interview effects.

Another option considered was focus groups. Focus groups have the advantage of facilitating spontaneous discussions among respondents and encouraging them to reevaluate their opinions to gain new insights into the subject (Denscombe, 2019). However, in focus groups, there is a risk that respondents may be influenced by others, which increases the risk of herd behavior (Denscombe, 2019). Another disadvantage of focus groups is that this thesis's topic revolves around personal finance and investment decisions, which can be sensitive to discuss in groups with strangers. There is a risk that some respondents may boast about substantial gains, which could discourage those who have experienced significant losses from sharing their experiences. After careful consideration, interviews were chosen because the goal is to allow respondents to openly discuss their experiences, including gains, losses, and encounters with pump-and-dump schemes. Thus, individual interviews which consisted of three participants (both interviewers and the respondent) were deemed optimal to ensure that the respondents felt safe to share their experiences.

A semi-structured approach was used in the interviews, which means there is a structure of topics and questions, yet with some flexibility to add or skip questions if needed (Bryman & Bell, 2011; Denscombe, 2019). The questions were divided equally between us, and we took turns asking questions. One advantage of this approach is that it makes the interviews more relaxed and natural, rather than an interrogation. Another advantage is that it allows the respondent to engage and become familiar with both interviewers, creating a more relaxed environment compared to solely interacting with one interviewer. Finally, the division of questions provides each interviewer with a better understanding of the questions asked, potential follow-ups, and more experience in those specific questions.

3.2.2 Selection of Respondents

The aim of the recruitment of respondents for the interviews was to include individuals who actively invested during or in connection with the COVID-19 pandemic. According to Euroclear (2020, 2021), there was a significant increase in young adult investors during the

pandemic, with approximately 65 percent male and 35 percent female. Therefore, it was deemed appropriate to target individuals between the ages of 18-30 for this thesis. Ten respondents were interviewed, which consisted of seven males and three females. The selection criteria required respondents to have been active during the pandemic and possess a minimum portfolio of 25,000 SEK based on the median portfolio of investors within the chosen age range (Andersson, 2021). Additionally, respondents from diverse socioeconomic backgrounds and education levels were sought. Furthermore, the aim was to reach respondents beyond Kristianstad and cover all of Sweden. Although not fully successful, we achieved a good distribution of respondents from various locations such as Gothenburg and Umeå.

According to Denscombe (2019), the recruitment stage of interview respondents can be a challenge. However, we were successful in recruiting respondents that accurately reflected the distribution of investors within our target group. The recruitment strategies of the respondents were convenience and snowball sampling. Convenience sampling involves the selection of easily accessible respondents, such as those in the researcher's proximity (Bryman & Bell, 2011). Initially, a random sampling approach was intended, which strengthens the transferability of the study and eliminates biases according to Denscombe (2019). Attempts were made to reach respondents outside of the immediate social circles by posting in Facebook groups and Discord servers. Although one respondent was obtained through this method, the overall response rate was low, which made us shift to convenience sampling. To identify the remainder of the respondents, friends, and acquaintances were contacted and asked if they knew anyone who met the criteria (*i.e.,* snowball sampling).

According to Bryman and Bell (2011), it can be difficult to achieve a statistically significant representation of a population through interviews, due to time constraints. Hence, the focus was to obtain a diverse range of respondents with different ages and backgrounds to identify differences and similarities. In terms of analysis, validity, and trustworthiness, it was deemed appropriate to conduct between eight and ten interviews to increase the likelihood of differences. The mean age of the 10 respondents was 23.3, with the youngest being 20 and the oldest 27. The demographic makeup consisted of 70 percent males and 30 percent females. Most respondents started to invest during the pandemic, however, three respondents started at the end of 2019, which was deemed acceptable for the study. There was one respondent who actively started investing in 2018. Initially, it was assumed that this respondent started during the pandemic, though it was clarified during the interview that this was a misunderstanding.

Nevertheless, this respondent provided valuable insights and served as an example of what one more year's experience looks like. Moreover, the respondents had different backgrounds and experiences. Although eight of them were students, likely due to the age range, they were studying various majors such as medicine, IT, philosophy, and business. However, the goal was not to conduct a comparative analysis based on age or gender. Instead, the aim was to have diverse respondents to gain different perspectives and compare similarities and differences.

Table 2 presents the respondents with fictional names to ensure their anonymity. The fictional names are derived from the four stages of the conceptual model: *Beginner*, *Confidence*, *Hubris*, and *Modesty* (see 2.4 Conceptual Model). All respondents in the *Beginner* stage are assigned names starting with "B," such as "Bengt" or "Benny." Those in the *Confidence* stage received names starting with "C," while those in the *Hubris* stage received names starting with "H," and respondents in the *Modesty* stage received names starting with "M." Additionally, if a respondent received an "E" after their fictional name, such as "Clara E," it indicates that the respondent had exited the markets and is no longer an active investor. On the other hand, if a respondent received a "P" after their name, for example, "Harry P," it represents a temporary pause from investing.

Table 2:
Table of the Respondents

Fictional Name:	Age:	Sex:	Education:	Work:	City	Started
Bengt	22	Male	Sport Mgmt	Student	Staffanstorp	2019
Benny	24	Male	IT-Engineer	Student	Lund	2020
Bjorn E	26	Male	Music, Philosophy	Student	Gothenburg	2021
Carl	20	Male	High School	Banking Advisor	Malmö	2020
Clara E	26	Female	BSc Business Ad.	Student	Kristianstad	2019
Hannah	20	Female	Construction Eng.	Student	Flyinge	2020
Harry P	24	Male	IT-Engineer	Student	Malmö	2020
Magnus	22	Male	BSc Finance	Student	Umeå	2019
Maja	27	Female	IT/Business Ad.	IT Consultant	Malmö	2021
Mikael	22	Male	Medicine	Student	Lund	2018

Note: The table shows the respondents, their age, sex, education, work, city, and which year they started to invest. The names of the respondents are derived from the conceptual model. The respondents in the *Beginner* stage have names starting with "B," while those in the *Confidence* stage have names starting with "C," *et cetera*. The "E" after a respondent's name symbolizes an exit from financial markets, and a "P" after a respondent's name symbolizes an investment pause.

3.2.3 Interview Guide

To prepare and organize the topics covered in the sessions, we compiled an interview guide (see Appendix A: Interview Guide). The guide follows a semi-structured format and consists of 25 main questions accompanied by optional follow-up questions. This approach allows for flexibility to ask additional questions, clarify points, or redirect the conversation back to the main topic if necessary (Bryman & Bell, 2011; Denscombe, 2019). The interview guide was developed based on the theoretical framework, which links the questions to the conceptual model (Figure 1). To streamline the interview process, a brief questionnaire was created (Appendix B: Questionnaire) in Google Forms. The respondents were required to complete the questionnaire before the interview. The questionnaire's first series of questions regarded personal information, such as name, education, *et cetera*. The questionnaire's second series of questions consisted of multiple-choice and short-text answers related to the respondents' investments and portfolios, such as when they started to invest, which markets and assets they invest in, how this has changed over time, *et cetera*. These responses provided an overview of the respondents' investment portfolios and financial situations, which saved valuable time as these questions would otherwise have consumed 10-15 minutes of the interviews.

The interview guide begins with warm-up questions. These questions aimed to understand the respondents' interest in financial markets, investment goals, overall enjoyment, and how they conducted financial research. This section also covered whether the respondents felt they had a good understanding of economics, business, and finance when they started to invest and if they desired better financial education during elementary and high school. Then, the investment journey was discussed and included how respondents had invested during the recent market volatility and whether they had changed their behavior. These questions aimed to gain insight into the respondents' experiences, knowledge, and behavior to map them according to the *Four-Stage model* and the *Dunning-Kruger effect*.

The following part of the interview guide addressed how the respondents used social media to research financial topics and their investment strategies. The next step was to present the respondents with two cases (Appendix C: Case 1; Appendix D: Case 2). The first case (Appendix C: Case 1) was a fictional social media post about a well-known Swedish investment company, Latour. This company is known for trading at a premium to its intrinsic value, and the case simulated a post showing that it was now trading at a discount due to a market overreaction to the current macroeconomic climate. *Case 1* primarily evaluated investor

sentiment, salience, and social media, based on the conceptual model and theoretical framework. After the respondents had read the case, we asked for their thoughts and likelihood (rating from 1 to 10) of investing. Then, the case continued by simulating that two weeks later, Latour's stock decreased an additional 10 percent, which resulted in an increased discount. The respondents were now asked what they would do. Here, there were two follow-up options, that depended on whether the respondents would have invested or not. If the respondents would have invested, it was simulated that "everyone" on social media agreed that the negative trend would continue with an additional decrease of 10-20 percent. On the other hand, if they would not invest, it was simulated that "everyone" on social media agreed that the stock would increase and most likely surpass its intrinsic value and reach its normal premium levels (about 20 percent above its intrinsic value). The focus of this case was to capture the respondents' thought processes and reasoning, and further analyze the aspect of herd behavior in social media.

The second case (Appendix D: Case 2) was an extensive fictional social media post regarding a typical micro-cap MedTech company. The premise was that in two weeks, the company would present its Phase 3 results, which would be the final step before a significant expansion and could potentially result in a rapid increase of five to ten times the current stock value. However, if the Phase 3 results were disappointing, then the company would likely need to issue more stock and experience devaluation over the coming years. The idea here was to simulate an option-like scenario where there was a strike date within approximately one to two weeks (10th of May), meaning that the respondents had a short timeframe to decide and were more likely to act impulsively. The asymmetrical upside of five to ten times in a short time frame should be considered a tempting bet with a limited downside. The case was posted by a fictional finfluencer who presented both the upsides and the downsides of the case. However, the post was influenced by the finfluencer's positive bias towards the company and that they had already made an investment. After the post, 23 comments were added (Appendix D: Case 2), taken from real social media posts, made anonymous, and slightly adjusted to fit the case. These comments were mainly positive and supported the case or thanked the finfluencer for previous successful recommendations. The idea was to give the finfluencer a good track record and social authority. However, a few negative posts were also added, which claimed that the case was a scam and a pump-and-dump scheme. The purpose of this case was to observe the respondents' thought processes and incorporate investor sentiment and herd behavior in the context of social media. After the respondents read the second case, they were asked to think

out loud, react to the post and comments, and indicate how likely they were to invest on a scale of 1 to 10. After that, the respondents were asked if they had previously invested in a similar case and to provide an explanation of why they invested and what the triggers and thought processes were.

Both cases (Appendix C: Case 1; Appendix D: Case 2) were simulated social media posts on either Twitter or Instagram, depending on which platform the respondents used as their primary one. The texts were slightly adjusted to fit the jargon of Twitter and Instagram; however, the content remained the same. The cases were sent as images and PDFs optimized for viewing on smartphones. The aim was to make the cases look as real as possible and viewed on the respondents' own devices to capture their subconscious thought processes. After discussing the two cases, an image of both cases was shared (Appendix E: Case 1 vs Case 2), and the participants were asked how much of their portfolio they would invest in each case. This question was included to "trick" the respondents because we assumed that they would be cautious to give a high rating on either case since both cases were solely based on social media (*i.e.*, the interview effect). Our interest was to observe whether they favored one case over the other and if this was consistent with the discussions. For example, if a respondent said they would not invest in one of the cases yet still allocated a percentage of their portfolio to the stock, it would show an inconsistency and suggest that they might actually invest. This comparison also examined the respondents' risk appetite and how their experience influenced their decisions. For example, whether they would opt for the case with a higher potential reward yet a higher risk (*Case 2*) or if they would prefer the safer value case (*Case 1*).

The last part of the interview guide involved the respondents' experience with social media and how it influenced their investment decisions. The questions revolved around their portfolios, diversification strategies, and how they reacted when an investment significantly increased or decreased in value. Then, the focus was on how they reacted to negative news, whether from social media, the company itself, or published analyses. The focus of this last part was to further explore how different investment decision-making factors (investor sentiment, herd behavior, salience, overconfidence, and over- and underreactions) influenced the respondents. Before the interviews were concluded, the respondents were asked if they wanted to add any new information that had come to mind or if they wanted to correct any of their previous answers. Finally, the research topic was briefly explained, and they were asked if they could think of anything from their experience that they wanted to share or if anything important had been

overlooked. This was done to decrease the risk of missing any crucial information or overlooking any critical aspects of their experience related to the research topic. Once the interviews were completed, the respondents were thanked, and it was clarified that the cases were fictional.

3.2.4 The Practice of the Interviews

The aim of the interviews was to have a duration of around 40-45 minutes. The ten interview sessions ranged from 34 minutes to 83 minutes, with an average and median time of ~50 minutes. Before the interviews, the respondents completed the questionnaire (Appendix B: Questionnaire). The sessions started when the respondent entered the Zoom meeting room. Next, there was a test for audio and video, to see if the connection worked. After that, a short explanation of the schedule was given, stating that the interviews would be recorded and that there were no right or wrong questions. The purpose of this was to make the respondent comfortable and inform them about what to expect. When the respondent accepted the schedule and conditions, the recording started. The first part of the recording involved obtaining the respondents' permission to record the audio and video. After that, we asked the questions from the interview guide in an open manner. Our role as interviewers was to encourage the respondents to give honest and genuine answers and to share their insights and thoughts. We tried to stay neutral to avoid giving the impression that we expected a certain answer (*i.e.*, the interview effect). However, if an answer became too long or deviated too far from the main topic, follow-up questions were asked to redirect the respondents back on track.

In summary, all respondents contributed to the research and seemed to enjoy the interviews. All respondents were aware of the topic and had a relation to investing and using social media and *external* IDMFs in their strategies. The interviews also had interesting developments. For example, some respondents with certain views at the beginning changed these views when presented with the cases and gave reflections on how social media and *external* IDMFs can have different impacts depending on where they are in their investment journey.

3.3 Analysis of Empirical Data

After all the interviews were conducted, the recordings were transcribed. The transcriptions took approximately two to three hours per interview and resulted in a total of 111 pages of material. The first step in the transcription process was to provide a draft by using the dictation and transcription tool in Microsoft Word. After Word provided a draft, the draft was read while re-watching the interviews and correcting errors. Once the transcribed material was complete, the material was read multiple times to gain new perspectives, highlight important quotes, and add comments. According to Bryman and Bell (2011), this process is important as it can help find details that may have been missed during the sessions. Denscombe (2019) emphasized the importance of categorizing the data to better understand the material and identify patterns. The next step was to discuss the material in accordance with the conceptual model. This was done by isolating the responses most relevant to the thesis and research question. These responses were then sorted and placed under headings related to the conceptual model and their respective interview questions, which facilitated a comparison between the different participants' replies. The focus was to find similarities and discrepancies. Furthermore, when the data was analyzed, patterns in the material were thought of as a whole, and without the findings being limited to a specific question. If a respondent answered a question in the *external* IDMFs realm that related to their investment experience or social media, their answer was added to the corresponding part in the model.

The answers received from the questionnaire were transformed into an overview table in Google Sheets. This facilitated a comprehensive overview of all responses from the questionnaire and enabled easy access to the relevant information for each category. The result of the questionnaire was that it streamlined the data-gathering process and provided a more efficient method to review the responses. To gain a comprehensive understanding, various perspectives of the responses and their implications for the thesis were discussed during the analysis process. Finally, the answers from *Case 1* and *Case 2* were analyzed. This was done by manually inserting the numbers into the overview table (Table 3) to examine the respondents' ratings for each case and the respective portfolio allocation. The answers were then analyzed in combination with the discussions to determine whether the ratings aligned with the respondents' views. This analysis was performed on an individual basis and as a pattern among all respondents to identify any similarities between ratings and portfolio allocation for each case and to understand how this related to the discussions as well as the conceptual model.

3.4 Trustworthiness

This section presents the four criteria of trustworthiness in qualitative studies: *credibility*, *transferability*, *dependability*, and *confirmability*, as defined by Bryman and Bell (2011).

Firstly, *credibility* entails ensuring that the research is conducted according to the canons of good practice. According to Bryman and Bell (2011), the acceptability of the research is determined by how credible or feasible the account provided by the researcher is. Denscombe (2019) states that researchers can influence the outcome of qualitative studies simply through their presence and involvement. During the interviews, the aim was to remain neutral and avoid influencing the opinions of the respondents. To ensure honest and valuable responses, it was emphasized before the interview that there are no right nor wrong answers.

Secondly, *transferability* is the ability to apply study findings to other contexts and obtain similar results, which is a key consideration in research (Bryman & Bell, 2011). However, qualitative research, as argued by Denscombe (2019), is heavily influenced by social contexts, making transferability less significant for qualitative researchers. Bryman and Bell (2011) also highlight that the applicability of findings to other contexts is an empirical matter. In this study, given the use of convenience sampling and the specific research focus, transferability is not a primary concern. The aim is to gather in-depth insights within IDMFs, rather than seeking generalizability. Thus, the focus was to obtain meaningful data within the specific sample rather than aiming for transferability across settings.

Thirdly, *dependability* in research refers to researchers being subject to auditing by an external party to establish the trustworthiness of the study (Bryman & Bell, 2011). To achieve this, Bryman and Bell (2011) recommend documenting all research steps and allowing peer auditing to ensure proper procedures are followed. In line with this, the interviews conducted in this study were recorded and transcribed, which makes the material accessible to interested parties. However, to protect respondent anonymity, fictional names are assigned.

Lastly, Bryman and Bell (2011) describe *confirmability* as the researcher's commitment to act in good faith and minimize personal biases or theoretical inclinations that could potentially influence the empirical findings. Complete objectivity is challenging to achieve, researchers should strive to maintain a neutral stance. In this study, when the transcriptions were analyzed,

an objective approach was adopted to identify patterns and themes. Although the questions align with the conceptual framework, an openness to unexpected findings was maintained. To avoid mutual influence, the coding process was conducted independently and separately by both researchers, followed by discussions to ensure agreement before the writing of chapter four.

3.5 Limitations

A limitation of this study is the use of convenience and snowball sampling in the recruitment of respondents. Denscombe (2019) stated that convenience sampling may result in researchers missing out on valuable insights and opinions from potential participants. Additionally, the sample cannot be considered representative of the entire population. However, it is believed that the respondents represent the majority of Swedish retail investors. Similar answers and explanations were received from the respondents regarding their journey, which indicates that the research will yield a novel and substantial contribution. When the respondents were asked to participate in the interview, they were informed that the overall theme was investment decisions and the role of social media in finance. However, the influence of how social media and other biases such as *external* IDMFs was not mentioned. This consideration was made to avoid that the participants knew the exact purpose of the study. The concern was that if they knew the exact purpose, there might be a risk of insincere or premeditated answers. Moreover, nine of the respondents were or had been university students, and it would have been preferred to include a greater number of participants who did not pursue higher education at the university level. However, many respondents referred to the beginning of their investment period when they did not have any advanced education, providing valuable information.

When it comes to social media, one limitation is the absence of respondents who are active finfluencers or engage in stock-hyping activities. Only one respondent actively comments on posts and in forums. As a result, there is a lack of individuals who engage in these types of activities, and their experiences and thoughts cannot be examined. Instead, most of the respondents' experiences focused on how they were influenced by these types of posts and comments. Another limitation regards the first case. It was initially thought that Latour was well-known and that all respondents would know about it. However, it was found that the level of salience associated with the company was not particularly high among the respondents, which limited the examination of salience in *Case 1*. Fortunately, salience was defined in other parts of the interviews. In the second case, it was assumed beforehand that it would not be

feasible to replicate a financial influencer that had the same influence as a respondent's preferred finfluencer. As a result, the reliability of the finfluencer was impacted due to a lack of familiarity and social authority. Seven of the respondents stated that they would likely have provided a higher rating for investing in *Case 2* if they had been familiar with the finfluencer.

3.5.1 Theory-in-use

In this thesis, scientific articles from various decades are used as the basis for the theoretical framework. The reason for this is to provide a holistic overview of the *Four-Stage model*, the *Dunning-Kruger effect*, and the different IDMFs used to create the conceptual model and framework. The conceptual model is seen as a descriptive and illustrative model of how novice Swedish retail investors acquire knowledge and are influenced by *external* IDMFs and social media. Furthermore, the aim was to primarily use peer-reviewed scientific articles within the field of finance. However, a few articles published in other areas such as economics, psychology, and law journals have also been included. The topics in these articles have been relevant to finance and the research topic and was therefore deemed suitable to use in this thesis.

It should be noted that different data sources are used to illustrate the average portfolio of Swedish retail investors. Overall, the most reliable source used for this data is Euroclear (Euroclear, 2020, 2021, 2022) and Statistics Sweden (SCB), which provide data on all Swedish investors' holdings in Swedish companies. However, do not display holdings in international companies. Another disadvantage is that Euroclear and SCB only show the average shares of stocks in all Swedish investors' portfolios, without indicating the number of holdings per investor segment. Furthermore, to be counted by SCB, the investor needs to own at least 500 shares in a specific company. Hence, to supplement the lack of international holdings and to achieve an overview of the Swedish retail investors' portfolio, public information from Avanza Bank's annual reports and blog posts is used. The information provided by Avanza is specific to their customers and not all Swedish investors. Furthermore, it is recognized that Avanza's customers might have savings at other banks, which might lead to misleading data. However, this is deemed acceptable since all respondents in the study used Avanza as a brokerage, and as of December 2022, Avanza had 1,776,700 customers (Avanza, 2022), which represents a significant portion of Swedish retail investors.

4. Empirical Findings and Analysis

In the fourth chapter, the empirical findings are presented. An analysis was conducted based on the conceptual model (Figure 1) to understand the learning process of novice retail investors and how they make their investment decisions. The model provided a framework that linked the respondents' learning approach (the *Four-Stage model*), their confidence levels and risk-taking tendencies (the *Dunning-Kruger effect*), as well as the impact of *external* investment decision-making factors (IDMFs), primarily through social media. The model categorizes novice investors into four stages: *Beginner*, *Confidence*, *Hubris*, and *Modesty.* The respondents were assigned fictional names based on their respective stages. All respondents in the Beginner stage were given names starting with "B," while all respondents in the Confidence stage were given names starting with "C," and so on (see 3.2.4 The Practice of the Interviews).

The chapter consists of four sections. The first section discusses the respondents' investment journey and experience through the *Four-Stage model* and the *Dunning-Kruger effect*. The second section discusses how the respondents are influenced by and react to the *external* IDMFs. The third section discusses the use and influence of social media, using the cases as a foundation. The fourth section links the findings and analysis to the conceptual model. The *internal* IDMFs will be linked and discussed when applicable. Quotes from the interviews are used to illustrate and facilitate the analysis, and the responses from the respondents are compared to identify differences and similarities.

4.1 Investment Journey and Experience

This part aims to analyze the respondents' investment journeys, development, and experiences, through the *Dunning-Kruger Effect* and *Four-Stage model*. According to Dunning and Kruger (2000), new learners tend to overestimate themselves in the beginning, while Gignac (2022) states that individuals with higher levels of financial knowledge also tend to have higher levels of confidence in their financial decisions. All respondents clearly stated that they lacked sufficient knowledge when they began investing, which can be linked to the second stage, *conscious incompetence* from the *Four-Stage model* (Burch, 1970). Five out of ten respondents realized this quickly and started more carefully in the beginning by adopting a low-risk

approach by investing in passive funds. These respondents later transitioned into more active stock investing. Three out of those five respondents moved quickly from passive funds to active stock picking of high-risk companies. Magnus recounted his initial cautious approach towards investing, as he acknowledged his lack of knowledge in finance. Magnus emphasized the importance of taking a prudent approach toward investments, mainly in the early stages to avoid negative outcomes. He noted that some of his early investments did not perform well, which reinforced the importance of investing with a long-term perspective and conducting thorough research and analysis before investing. The remaining five respondents acted differently in the beginning and bought several growth and speculative stocks without considering any major downside.

Seven out of ten respondents stated that they had bought a stock without conducting their own research. The reasons behind this varied among the individuals, yet they ended up with the same conclusion, which was that they did not understand that they should conduct research. Clara E[1] recounted her initial investment strategy which primarily involved investing in growth and speculative companies. She explained that in the early stages, she did not rely on key financial metrics to make investment decisions but rather based them on intuition and whether the company offered a compelling product or service. Furthermore, Clara E indicated that she often discovered these small-cap companies through Instagram. The respondents who chose to start investing in speculative stocks are categorized by a high degree of confidence and little experience in the *Dunning-Kruger* model (Appendix J: Dunning-Kruger Effect). Magnus, Bjorn E, Maja, and Clara E remorsefully explain how foolish their decisions were in the beginning. All four described that they were not fully aware of the thorough analyses required to avoid bad investments. Magnus, Harry P, and Clara E, along with several other respondents (8/10), agreed that they realized their lack of knowledge the first time they experienced a major decrease of more than 50 percent in one investment.

> *Clara E: Well, I believe it was, well right before the dip when the war started. In January, February last year. Because prior to that everything had been so pumped up, and it felt like a house of cards crashing down. [...] Somewhere around there I understood that everything is not just going up and you have to, well, be ready that it can get volatile.*

[1] The "E" at the end of Clara E symbolizes that she has (temporarily) exited financial markets.

> *Harry P: I believe you realize it the first time you get a bad burn. Then, some people have different tolerance for it. [...] For example, when covid started, then it was like, what the [intensifier] is going on? Because even if you understand that a stock can go both up and down, you do not really understand it until you sit there and see all the red numbers.*

Moreover, Mikael explained that he realized his lack of knowledge when he could not understand why some assets were going up while others were going down. Given Mikael's investment journey, where he had invested in several stocks based on recommendations that had resulted in substantial losses. Mikael is also aware that it has taken time to reach the stage he is in today. Burch (1970) and Dunning and Kruger (2000) claim that self-awareness and willingness to learn and improve are key factors in developing expertise. Mikael explained that his decision to focus on value investing stemmed from his lack of understanding of technical analysis. He stated, "I do not understand technical analysis, therefore, I started with value investing." This insight can be linked to *conscious incompetence* from the *Four-Stage model*, where all respondents started.

From the beginning, all respondents recognized the importance of conducting research. Individuals such as Mikael, Magnus, Maja, Clara E, and Carl, who had a keen interest in the stock market and a desire to expand their knowledge, progressed quickly through the *Four-Stage model* and the *Dunning-Kruger effect*. On the other hand, Bjorn E and Bengt, who were primarily focused on securing a wealthier future without a strong interest in the stock market, attempted shortcuts that ultimately hindered their progress. Furthermore, respondents with less experience and knowledge described their research as superficial. Benny relied heavily on conversations with friends and family, seeking their opinions on investment decisions. He also heavily relied on trusted social media accounts for investment guidance. Benny admitted that his personal research usually involved reading the company's provided information and, if it appeared promising, he would proceed with the investment. Another example is Clara E, who initially fixated on ratios and became overly focused on the price-to-earnings (P/E) ratio. Clara E would only consider this ratio when making investment decisions and would buy stocks based on a low P/E ratio. However, in retrospect, Clara E realized that the P/E ratio is more complex than she initially believed and that there are other important factors to consider when evaluating a company.

All respondents agreed that they wished that they had received some basic financial understanding from elementary or high school, which would have helped them avoid initial

mistakes. A basic understanding of financial markets would have helped the respondents progress more rapidly through stages two and three in the *Four-Stage model*, as well as faster progress towards *Modesty*. None of the respondents felt they had enough knowledge when they started to invest and did not know where to start to look for information. According to Ricci and Sautter (2023), most millennials and GenZs rely on social media for their financial information, and nine out of ten respondents confirmed that they initially turned to social media to educate themselves about financial markets. Hannah, who recognized the lack of basic finance classes in school, started to give public lectures at high schools through the organization "Ung Privatekonomi" (eng: "Young Personal Finances"). Maja expressed her engagement in the organization "Unga Aktiesparare" (eng: "Young Stock Investors") for similar reasons. Mikael and Clara E emphasized the importance of learning about businesses and the overall economy, rather than solely focusing on stock investments. Mikael said that due to the recent interest rate increase, it will be interesting to see how well Swedish households understand their personal finances. Clara E stated that an understanding of compounding and investing at an early age can work miracles. Harry P[2] had similar thoughts as Clara E and discussed how Swedish teenagers often receive a savings fund from their parents and grandparents when they turn 18 years old. Harry P emphasized the need for guidelines on managing these funds from the start, instead of risking significant losses by learning through trial and error.

Gervais and Odean (2001) found that inexperienced investors tend to overestimate their own success, which diminishes overconfidence as the investor gains more experience, which is consistent with Dunning and Kruger's (2000) model. Fleming and Mazor (2021) revealed that even highly confident finance professionals were more likely to make risky and irrational investment decisions that yielded poor results, due to overestimating their abilities. Wang (2001) suggested that moderate overconfidence can be beneficial in certain scenarios, which Clara E confirms "if you're always waiting to have enough knowledge to do something, then you won't do anything." Overconfidence had at some point influenced all respondents, although this was more common at the beginning of their investment career, which happened parallel to the rapid market increase of 2020-2021 (Appendix F: Index). In the beginning, most respondents did not have to consider what they bought since everything "went up," and they felt successful. Afterward, when the market started to decrease in 2022, there was a clear

[2] The "P" at the end of Harry P symbolizes that he is currently on an investment pause.

distinction between the respondents that knew how to fundamentally analyze stocks and had a systematic approach towards investing, compared to the ones that did not. The ones that had a fundamental understanding of their investments were all respondents in *Modesty* as well as Bengt and Carl, who now had the confidence to increase their holdings as they could "find bargains." In contrast, the other respondents who had based their investments on recommendations from others, either on social media, forums, or from friends, experienced decreased confidence, started to doubt their abilities, became anxious, and retracted. This reaction describes the *Valley of Despair* in the *Dunning-Kruger effect* and is the make-or-break moment for novice retail investors. Here, the respondents that had experienced overconfidence learned the hard way that financial markets are not as easy as previously perceived, and either stopped checking their portfolios or temporarily exited the markets to come back later with a more developed strategy.

Studies have discussed that overconfidence can lead to low investment returns due to a failure to diversify portfolios appropriately (Kufepaksi, 2007; Nareswari *et al.*, 2021). All respondents had during or after their trip to the *Valley of Despair* sought some form of increased diversification to limit their portfolio risk. The respondents reported that this understanding had developed over time as the markets fluctuated. A common theme among the respondents was that they had based their diversification strategies on what they had heard from others or arbitrarily on what they felt was common sense, instead of financial theory. The range of portfolio diversification was somewhere between 4-20 companies, with five of the respondents aiming for 10-15 different individual stocks, and three aiming for 7-10.

> *Benny: Actually, there is not too much consideration behind it. A lot of people talk about Tesla and believe in it, which I do as well, so I decided to invest in Tesla, then Apple, [...] then Microsoft, and [...] Google [...]. So, it just kind of happened that I ended up with 7-8 companies.*
> *Interviewer: Do you think about diversification?*
> *Benny: I have started to think about it and have a bigger range of sectors, [...] the majority is IT, mostly because that is where my interest lies.*

> *Mikael: Yes, that is something you hear as you go along... that diversification is important and that you should not put all your eggs in the same basket. However, if you diversify too much, then you might as well buy an index.*

Despite three of the respondents studied business or finance, no respondent mentioned modern portfolio theory that aims to optimize returns versus volatility and seek different asset classes with low correlation. Instead, the general opinion among the respondents was simply that different companies within the same or different sectors were good risk management. This mindset held true even for the more experienced respondents that conducted their own analysis and were more advanced in regard to the conceptual model.

4.2 Investment Decision-Making Factors (IDMFs)

This section discusses investment decision-making and *external* IDMFs. *External* IDMFs consist of investor sentiment, herd behavior, and salience, and are combined since these IDMFs happen outside the control of the novice retail investor and are likely to influence their decisions. In contrast, *internal* IDMFs consist of overconfidence, and over- and underreactions, and are a reaction to the novice investor's decisions and come from within. The *external* IDMFs are first going to be individually linked to the relation to the findings, then discussed as a group. The *internal* IDMFs are going to be linked and discussed when applicable and without their own segment.

Traditional literature divides investment decision-making into two main theories, *classical financial theory,* and *modern financial theory*. The classical financial theory is based on fundamental analysis and the efficient market hypothesis (Nareswari *et al.*, 2021). Modern financial theory suggests that investors make irrational decisions due to behavioral biases and emotions, which emerge due to the investor's limited ability to perform technical and fundamental analysis (Griffith *et al.*, 2019; Krishnamunti, 2009; Nareswari *et al.*, 2021). Based on these two theories, a pattern could be observed among the respondents. The respondents from the *Beginner, Confidence,* and *Hubris* stage, that did not conduct their own analysis and based their investments on recommendations from others, were more impulsive and susceptible to *external* and *internal* IDMFs. In contrast, the respondents from the *Modesty* stage, who did conduct their own fundamental analysis and focused on the stock's fundamentals, were less prone to be influenced by *external* IDMFs. This is in line with the concept of modern portfolio theory, that a better understanding of fundamental analysis makes an investor less reactive to biases and emotions. Furthermore, there was little evidence in the interviews that supports the traditional financial theory and the concept of rational investment through the efficient market hypothesis to maximize expected returns given a certain level of risk (Metawa *et al.*, 2017). The responses in the interviews suggest that while there was a difference between the

respondents who did conduct their own fundamental analysis compared to the ones that did not, an overall theme emerged. Most respondents attempted to use online speculations, rumors, and other investors' analyses to maximize their own returns given an arbitrarily assumed level of risk.

4.2.1 External IDMFs (Investor sentiment, Herd behavior, and Saliance)

Metawa *et al.* (2017) and Nareswari *et al.* (2021) stated that investor sentiment is driven by confidence in financial markets. Moreover, Brown and Cliff (2004) found that investor sentiment is highly correlated with market volatility, which in turn is related to investors' optimism. This was mainly observed in the first case (Appendix C: Case 1), where the fictional case decreased by 10 percent in two weeks. Here, six of the respondents either became more curious to do research or were more intrigued to make an impulsive investment in the case, solely due to the rapid decrease in price. This increase in interest is in line with Brown and Cliff's (2004) founding that sentiment correlates with the volatility of market returns and leads to the investor feeling either optimistic or pessimistic toward their investments. However, the respondents that did conduct their own analysis and focused on the stock's fundamentals, did not become as influenced by investor sentiment.

In line with previous studies (Ayoub & Balawi, 2022; Costola *et al.*, 2021; Griffith *et al.*, 2019; Metawa *et al.*, 2017; Nareswari *et al.*, 2021; Ricci & Sautter, 2023), herd behavior was observed to different degrees in all respondents. Ayoub and Balawi's (2022) found that an underlying reason for herd behavior is that the investors do not trust themselves, which is why mainly inexperienced investors tend to follow investment recommendations without conducting their own research. This pattern was observed among the respondents that had not yet developed their own investment style, and therefore, took comfort in reading social media posts by finfluencers or other more experienced investors. It was also a common theme that the respondents wanted investment support and recommendations from their friends. This further supports modern financial theory, where imitating other investors without relying on the fundamental changes in the stock, leads to irrational price movements and market inefficiencies.

Choi and Skiba (2015) and Mohamed and Stavroyinnis (2022) describe that it is difficult to examine herd behavior in financial markets since it is hard to state whether the investors invest by imitation, or by simply reacting the same way to the same information. Among the

respondents, there was a distinction between the ones that could and could not conduct their own analysis. The ones that could not conduct their own analysis followed other investors as a shortcut and supplement to their lack of knowledge. Furthermore, the ones that could conduct their own analysis (all respondents in *Modesty*) were still inclined to take recommendations from others, although they did not invest without analyzing the stocks themselves. This distinction suggests that herding is consistent among novice investors, and as they become more experienced and develop their own strategies, they are less prone to blindly follow recommendations.

Rubesam and de Saouza Raimundo Júnior (2022) recently researched herding in 10 countries' financial markets where only Sweden, the United States, and Italy, displayed signs of herding. The authors concluded that the severity of the pandemic and the intervention of governmental policies affected the degree of herding in the respective markets. Our respondents rarely mentioned the pandemic unless it was in the context of the "COVID-19 crash." This lack of COVID-19 discussions in the interviews suggests that the pandemic itself had little influence on the respondents' investment decisions and supports Rubesam and de Saouza Raimundo Júniors (2022) conclusion. The respondents in *Beginner* and *Confidence*, which were most prone to herding, stated that they were more active in 2020 and 2021, however, it was not due to the pandemic. Between 2020 and 2021, there was an overflow of investment recommendations on social media combined with a rapid market increase to new all-time highs (Appendix F: Index). During this period, the respondents confessed to investing in companies based on recommendations and without conducting any research. Furthermore, these respondents stated that they felt lost and discouraged in the market downturn. This discouragement came partly from their portfolios decreasing in value combined with the absence of investment recommendations on social media. This supports Salomon's (2004) finding that herding is more common in bull markets. In contrast, the respondents in *Modesty* were more active in the COVID-19 crash and the bear market of 2022, since they could now increase their holdings at lower prices.

Studies have found that investors tend to invest in companies they are more familiar with, which increases their confidence and optimism toward their investments (Abrahamson, 2016; Huberman, 2001). Fekrazad *et al.* (2022) and Ricci and Sautter (2023) found that salience is used as a shortcut to simplify investment decisions when choosing among several options that require judgment, analysis, and effort (Chaudary, 2018; Nareswari *et al.*, 2021; Yalcin *et al.*,

2016). The tendency of salience was found among all respondents, where they had invested in at least one or more of the following stocks: Alphabet, Apple, Investor, Microsoft, Samhällsbyggnadsbolaget (SBB), and Tesla. The arguments were that these companies were well-established and would not become subject to market manipulation and pump-and-dump schemes. When discussing the companies, no respondent brought up the companies' fundamentals. Instead, the focus was on the companies' track records and reliability, which made the companies perceived as low risk. The respondents that conduct their own analysis indicated that they also analyze more well-known companies, however, they tend to be more forgiving if the company is well-established. This tendency of forgiveness indicates an inclination to underreactions and that emotional biases influence investment decisions, which is in line with modern financial theory.

To summarize, the *external* IDMFs' influence on novice retail investors can be divided into the respondents that do conduct their own fundamental analysis (all respondents in *Modesty* including Bengt and Carl) and the ones that do not. The ones that have clear rules, or a fundamental understanding of their investments, are less prone to be influenced by *external* IDMFs as well as the opinions of other investors. Although they still became influenced to some degree, they have a system to rely on when market volatility and uncertainty increase. In contrast, the respondents that do not conduct their own analysis have to rely on *external* IDMFs unless they want to pick stocks at random. This means that they are more prone to over- and underreactions and become influenced by their emotions, which is likely to lead to irrational investments.

4.3 Social Media's Influence and Case Discussions

The following section first explains the respondents' experience of social media for financial information. This part is followed by the findings and discussions from both cases used in the interviews (Appendix C: Case 1; Appendix D: Case 2; 3.2.3 Interview Guide). The cases will first be discussed individually, showing the respondents' thoughts, and later summarized and compared.

4.3.1 Social Media as a Source of Financial Information

According to Griffith *et al.* (2019), social media has become an essential source to communicate financial information and influence investors' financial decisions. The respondents' five most common online sources for financial information were Instagram,

Twitter, Börsdata[3], and Dagens Industri[4], and Reddit. In line with Griffith *et al.* (2019) and Ricci and Sautter (2023), nine out of ten respondents had used social media to learn about financial markets. There was a significant pattern among the respondents to turn to social media or forums to take part in financial discussions. The respondents' rationalization behind using social media to follow more successful investors was to obtain a sense of security when navigating the perceived jungle of financial markets. Previous studies have discussed herding and following others as a way to find comfort and certainty in periods of information overflow. An example of this was Bjorn E who explained that he did not need to follow information from the company, instead, he let the company's news be released, discussed, and analyzed on Reddit by other investors. After that filtering process, Bjorn E would read the other investors' thoughts before making up his mind about whether the released news was positive or negative. Moreover, the respondents' methods of following online accounts often resulted in falling for some form of pump-and-dump scheme or investing in illiquid and speculative stocks, which later declined by more than 90 percent.

> *Benny: Do not trust everything you read... you have to do your own research sometimes, because, it is easy to get tricked by people hyping a stock or mutual fund or whatever it might be, and then... well, it does not turn out the way expected.*

The experience of bad investments based on online recommendations has led all respondents to become cautious and careful when it comes to social media and finfluencers, which influenced the answers in the coming cases.

4.3.2 Case 1

The first case was a fictional value case in which a well-known Swedish investment company, Latour, was presented through a post by an unknown finfluencer (Appendix C: Case 1; 3.2.3 Interview Guide). Several of the respondents had initial doubts about the post, especially about the use of the word "risk-free." For example, Harry P and Mikael pointed out that nothing is risk-free and there is likely a reason for the discount. Moreover, Bjorn E stated that the post seemed to have good intentions, however, he associated such posts with "clickbait" and had developed a strong distaste for financial posts where emojis are used. Furthermore, both Bjorn E and Bengt had difficulties to understand some of the words in the text (*e.g.*, intrinsic value,

[3] BörsData is a Swedish online stock research and screening tool.

[4] Dagens Industri (DI) is a Swedish financial newspaper.

net present assets, premium versus discount, *et cetera*). This supports Ricci and Sautter's (2023) concern regarding the basic understanding of financial concepts among novice investors. Bengt felt overwhelmed by the abundance of numbers in the post, which left him confused. Moreover, Hannah and Maja mentioned that they wished the finfluencer had described what the company does and provided more insight into why it is trading at a discount. Harry P expressed a desire for the post to be more objectively formulated, perceiving the finfluencer as a salesperson for Latour rather than an impartial disseminator of information. Bengt desired more information about the investment company's key metrics, citing factors such as increased revenue and earnings per share as important decision factors. Bjorn E and Clara E stated that they would seek information and compare it with other investment companies.

The second step in case one was a scenario that two weeks after the respondents saw the initial post, they saw that Latour was trading 10 percent lower, therefore, increasing its discount. Two of the respondents that chose not to invest in Latour, were satisfied with this choice after the stock had declined. However, other respondents became curious and were now more inclined to invest due to the increase in discount. Carl, Harry P, and Magnus mentioned their inclination to investigate and understand the reasons behind the stock's decline before investing. Magnus specified that his decision would depend on whether the reasons were rational or irrational. Hannah expressed her readiness to invest if the company's values aligned with her own. Bjorn E and Clara E admitted that they were now more tempted to invest than before the decline. Bjorn E emphasized the significant price difference in the net asset value discount, which drew him in. Clara E stated that she would have started considering investing after the decline and would have invested if her own research had been positive. After the stock's decline, the respondents' focus shifted from trusting the finfluencer to evaluating the investment and increased discount.

The final step in *Case 1* was to examine how the respondents now were influenced by the sentiment on social media. In this step, the respondents received a positive social media scenario if they had not invested, and a negative social media scenario if they had (Appendix C: Case 1; 3.2.3 Interview Guide). Fekrazed *et al.* (2022) stated that positive (negative) Twitter posts about a company led to higher (lower) returns and an increased volume in the company's stock. Ayoub and Balawi (2022) found that herd behavior has a major impact on a company's stock price, where investors tend to make similar decisions without any fundamental change in the underlying stock. Hannah who received a negative social media scenario stated that the

stock price is influenced more by the hype than the value of the company. She argued that if everyone on social media expresses an opinion, such as the stock having downside potential and a price decline, then the stock will also decline. Clara E who received a positive social media scenario became more interested in the company and more inclined to buy Latour. At the same time, Clara E remained skeptical based on previous experiences and questioned whether someone would have paid people to write positively/negatively about the company to create market hype. Harry P, who did not want to invest and received a positive social media scenario, stated that the more people wrote about a stock, the less inclined he was to buy it. Harry P further explained that if the situation were reversed and no one had written about the company, he would have become interested because then the stock price would be driven by its substantial value rather than social media hype. Magnus stated that the posts might influence him in doubting his own analysis, since "everyone" else expressed a different view.

> *Magnus: I believe that you get influenced by it [social media sentiment] and it will influence your analysis. I believe that you start to doubt yourself and think that you might have missed something, subconsciously... [...] I would probably not only look at the posts and make an investment, but I do believe I would be influenced by them.*

Although the inclination to whether the stock was a good investment or not, the respondents agreed that social media sentiment and herd behavior have an impact on companies' stock prices, which is in line with Ayoub and Balawi (2022) and Fekrazed *et al.* (2022).

4.3.3 Case 2

The second case (Appendix D: Case 2; 3.2.3 Interview Guide), was a fictional MedTech company called Pharma. The company's information was presented through a social media post from a finfluencer (named TS), followed by user comments. The respondents' initial reactions varied based on their previous experiences. Clara E mentioned that she avoids MedTech and BioTech companies due to the high uncertainty regarding approvals. Benny mentioned that he had previously invested in a similar case and was familiar with the hype in the post which made him extra cautious with this type of content. However, Benny felt tempted to invest in something that could potentially generate a short-term 5-10 times return. Magnus and Hannah reacted positively to the thorough company information in the post, making them more inclined to invest in Pharma. Magnus initially viewed the post as a pump-and-dump stock; however, Magnus appreciated the pros and cons provided by TS and felt this made the post more objective. Hannah liked the company's prospects and trusted the management's statement

(provided by TS). Hannah expressed her inclination to invest, although she would wait a week to observe the continuation of the hype. It is important to note that Hannah's lack of previous experience with hyped social media cases made her more intrigued compared to others who had encountered similar cases and suffered losses. None of the respondents mentioned the reliability of the company information and pros and cons provided by the finfluencer.

The respondents had different reactions to reading the post and the comments. According to Griffith *et al.* (2019), the wording and tone in influential posts impacts investors' investment decisions. Hannah and Bengt had a more positive perception of the stock due to comments sharing successful investments, that were the result of TS's previous recommendations. Bengt's trust in TS increased when he saw comments from individuals sharing their successful investments and validated TS's track record. On the other hand, Maja and Carl stated that they found the comments rather meaningless. Carl would have liked to see more analysis and arguments about the company for them to contribute something meaningful to his analysis. Maja expressed her desire for in-depth discussions about the company and its stock.

Eight out of ten respondents had previously invested in a similar case as *Case 2*, and seven out of these had done it by simply trusting the posts and without conducting any research. This experience resulted in more caution and risk aversion toward financial recommendations from social media posts. Carl explained that the reason he had invested in a similar case as *Case 2*, was driven by greed, which had limited his critical thinking. Benny shared a similar bad investment in a MedTech company. Benny had received the recommendation from a friend and then joined a Discord server and Facebook group that discussed the company. Benny explained that he was not actively posting in the online groups, however, he read the discussions to gain a sense of what other investors were doing to feel more secure. Bjorn E described that although he previously had not invested in a similar case, he used to spend a lot of time on Reddit where he read other users' investments and recommendations. Bjorn E stated that he preferred the Reddit atmosphere and that all users were seen as equals, which made the recommendations and discussions seem more objective.

4.3.4 Summary Cases

Gervais and Odean (2001) found that investors tend to overestimate their success in the beginning, which leads to overconfidence and more risky and irrational investments. However, this overconfidence diminishes as the investor gains more experience, which can be seen

among the respondents. In the beginning, all ten respondents fell for overhyped stock or crypto recommendations to make quick money. Consequently, they ended up participating in speculation bubbles where almost all respondents lost most of their invested capital. Based on this experience, all ten respondents have become more cautious and take a less impulsive approach toward social media recommendations. This is in line with Gervais and Odean (2001), that as investors gain more experience, they learn to not overestimate their success.

Philander (2023) studied that trading "meme stocks" based on social media recommendations leads to a higher tendency of gambling. Based on Pharma's potential upside, four out of ten respondents were tempted to place a "small bet" on Pharma, despite their previous negative experience with speculative investments. The respondents that had shown a limited knowledge of financial analysis were more likely to "bet" on Pharma based on the post and the comments. On the other hand, other respondents that knew how to conduct their own analysis were still tempted to "bet" on Pharma, however, they insisted that they had to research the company more thoroughly before. This inclination to "bet" on a speculative case despite previous losses reinforces the *modern financial theory* concept that investors sometimes make irrational decisions due to behavioral biases. It is worth noting that placing a bet on a high-risk case does not necessarily mean that it is irrational, however, placing a bet based on a social media post without further analysis, is. In addition to this, Griffith *et al.* (2019) state that investors who cannot conduct their own analysis are more prone to make irrational investments.

> *Bengt: I have invested in a small [intensifier] company, and it was because the price was like 1 SEK... I had some leftover money on Avanza, and the stock had recently increased by 30 percent in three months, so I thought, why not? And this recommendation came from the Facebook group 'Aktieraketer.'*

Metawa *et al.* (2017) stated that herd behavior combined with overconfidence may encourage investors to take excessive risks that result in increased market volatility. This pattern could be observed where the comments influenced most respondents either positively or negatively. Moreover, most respondents explained that they either had or would, make investment decisions based on what was written on social media, which would directly affect the stock's price movement and volatility.

Table 3:
Table of the Respondents' rating of Case 1 and Case 2

Fictional Name:	Case 1 (rating):	Case 2 (rating):	Case 1 (%)	Case 2 (%)
Bengt	1	2	1%	5 %
Benny	1	2-3	2%	2 %
Bjorn E	1	1	More in Latour	Less in Pharma
Carl	1	2	0%	0%
Clara E	0	0	5%	0%
Hannah	3	5	5%	1%
Harry P	0	0	3-4%	0.5-1%
Magnus	1	1	0%	1-10%
Maja	2	5-6	2%	2%
Mikael	7-8	1	90-98%	2%

Note: The table first shows each respondent, then their ratings from 1 to 10 of each case, and finally their portfolio allocation in percent toward each case. *Case 1* represents Latour, and *Case 2* represents Pharma. The *mean* and *median* rating of *Case 1* was 1.8, and 1, respectively. The *mean* and *median* rating of *Case 2* was 2, and 1.5, respectively. Mikael understood the question as he was only allowed to invest in the two cases and no other assets, which explains the 90-98% allocation in *Case 1*.

The final step of the cases was for the respondents to choose how much of their portfolio they would invest in each case solely based on the social media posts. There is a clear inconsistency between the ratings given and the percentages allocated toward each case (Table 3). Five out of ten respondents decided to give a higher percentage of their portfolio to Latour, while two out of ten favored Pharma, and the rest provided equal percentages to both cases. The respondents' arguments to invest more in Latour were that it is a more established, well-known investment company, and provides indirect diversification, compared to Pharma. However, no respondent mentioned the opportunity to buy Latour's underlying assets at a discount as a reason to invest in it.

> *Harry P: If I had to invest in Pharma, then maybe 0.5 or 1 percent... and I would consider it more of a gamble. And regarding Latour, well, based on it being an investment company it would maybe get between 3 and 4 percent of my Swedish portfolio.*

There was a higher mean and median rating to invest in Pharma, however, with a smaller percentage of the respondents' portfolios (Table 3). This difference in rating indicates that the respondents were more inclined to make a short-term investment that could yield a substantial return, compared to a long-term value investment. What is interesting is that, although all respondents had previously been in a similar situation as *Case 2*, and had come out unsuccessful, there was still a temptation to "bet" on Pharma. This temptation displays a

tendency of gambling among the respondents, which is in line with Philander (2023). In contrast, Latour which should be perceived as a safer and more rational investment, received an overall lower rating of investment (except from the respondents categorized in *Modesty*).

The difference in rating between Latour and Pharma might be explained by two reasons. First, it was harder to understand the financial terminology in Latour's post, which supports Ricci and Sautter's (2023) claim that there is a lower understanding of financial information among novice retail investors. Second, the lack of information in Latour's post made the case feel more uncertain than Pharma, which had a more detailed post and a wide range of comments (both positive and negative). Multiple respondents stated that they did not know enough about Latour to make an investment, even though Latour *should* be considered a rational investment. Pharma, on the other hand, which was a riskier and more uncertain investment than Latour, received a higher rating, although with a smaller portion of the respondents' portfolios. The lower portfolio percentage allocated towards Pharma indicates that the respondents considered it to have a higher risk of failure than Latour, which shows that the respondents had learned from previous high-risk investments to "bet" a smaller portion of their portfolio. Finally, the pattern of giving Pharma a higher rating than Latour, indicates that information in social media posts supplemented with comments does influence investment decision-making and makes it more likely to invest in companies that receive social media attention. The responses from the respondents indicate that both cases are about trust toward the person posting the case, which may be why Pharma received a higher rating. Pharma's post consisted of both comments and answers from the finfluencer, which gave a more personal impression and could therefore establish more trust from the respondents.

4.4 Conceptual Model: Beginner, Confidence, Hubris, Modesty

The conceptual model was utilized to understand the learning process of novice retail investors in financial markets and to gain insight into their investment decision-making. The model provided a comprehensive framework that linked the respondents' learning approach (*Four-Stage model*), their confidence levels and risk-taking tendencies (*Dunning-Kruger effect*), as well as the impact of *external* IDMFs, mainly through social media. Most of the assumptions made in the conceptual model (2.4 Conceptual Model) aligned with the results obtained, and the model provided a solid framework for understanding novice investors' progression.

In the *Beginner* stage, respondents like Benny, Bengt, and Bjorn E showed limited understanding and experience in financial markets. The respondents in *Beginner* rely on other investors or strategies created by others, making them susceptible to *external* IDMFs, which makes them rely more on social media to find investments. The *Confidence* stage represents growing confidence and willingness to take on higher levels of risk. Carl and Clara E were categorized in the *Confidence* stage. Carl maintains a modest and long-term approach, his exploration of alternative strategies places him in the *Confidence* stage, exposing him to short-term and irrational investments. Clara E demonstrates a healthy approach to long-term investing although she has yet to fully implement it in her investments. Reflecting on her past investments has led her to adopt a more long-term and diversified approach, aligning her with the *Modesty* stage once she acts upon her new investment philosophy. Investors in the *Confidence* stage still rely on social media to find investments, however, what differs from the *Beginner* stage is that they are better at distinguishing good posts from bad.

The *Hubris* stage represents peak overconfidence, where the novice investor believes financial markets are easy to navigate. The investor understands that they need to conduct their own research, however, fail to always take this into consideration due to their overconfidence. In addition to this, the investor acts irrationally and does not take fundamental analysis into consideration. Both Harry P and Hannah fall into this stage. Harry P is currently on an investment pause and the rationale behind this decision is his perception that the markets are no longer rational compared to the pandemic period. This indicates a tendency to struggle with adjusting and adapting to changing market conditions, and instead blame market actions solely on external factors. Hannah shows respect for market risk yet tends to make confident

predictions and overlook uncertainties, reflecting her overconfidence. Regarding social media, investors in the *Hubris* stage tend to use social media to confirm their own biases, and disregards posts that express other's opinions.

The *Modesty* stage is characterized by a heightened awareness of risks and a disciplined approach. Magnus, Mikael, and Maja exemplify this stage, demonstrating knowledge and effective evaluation methods. They have developed strategies that require recommendations to meet specific requirements, reducing their susceptibility to *external* IDMFs and irrational decisions. By progressing towards the *Modesty* stage, investors can develop a modest approach towards risk, financial markets, and diversification, setting a solid foundation for future success. However, it is important to note that being in the *Modesty* stage does not imply expertise, instead, it signifies a disciplined and informed approach that reduces the likelihood of falling for *external* IDMFs. Regarding social media, investors in *Modesty* can use social media for inspiration, however, does not rely on it. If a *Modesty* investor finds a recommendation online, the recommendation first must meet their strategy's requirements before they make an investment.

After the analysis, there were a few discrepancies regarding the conceptual model's initial assumptions (2.4 Conceptual Model). The first discrepancy relates to the assumption that the conceptual framework is an iterative process applicable throughout an investor's entire investment career. After the interviews, it became apparent that the model was more effective in overcoming initial hurdles and guiding the first steps in the learning process. However, as investors reached the stage of *Modesty*, the model showed limitations. The accuracy of the model differed when it came to assessing modesty among respondents, particularly depending on the choice of asset (*e.g.*, stocks versus cryptocurrencies, fundamental versus technical analysis). Different assets and analysis approaches have varying levels of complexity, which affects the confirmation of whether a respondent has truly reached *Modesty*. Additionally, considering that the respondents had only been investing for a few years, it is challenging to determine if the model continues to iterate as investors gain more experience or if new stages emerge.

The second discrepancy relates to the possibility of a respondent reaching *Modesty* in one asset while at a different stage in another. For example, Carl demonstrated a modest approach to long-term stock investing, aligning with the requirements of the *Modesty* stage. However, Carl

also engaged in experimentation with other asset classes and investment styles, such as derivatives and swing trading. In this aspect, Carl did not reach *Modesty* and was categorized under the *Confidence* stage. This pattern indicates that investors who allocate their investments across different assets can be at various stages within the conceptual model for each asset. Notably, due to Carl's experience in long-term stock investing, the time spent in the *Beginner* stage was minimized, and Carl had a clearer understanding of what needed to be learned to quickly adapt to the new investment style and asset class. This suggests that although investors may restart from the *Beginner* stage when learning a new asset, the duration of each stage can be reduced, leading to a faster path towards *Modesty*. It is worth considering whether a second round in the conceptual model excludes or minimizes the *Hubris* stage; however, since none of the respondents in this study reached *Modesty* in more than one asset, this could not be examined.

To summarize, the conceptual model provided valuable insights into the development of novice retail investors as they progress through the four stages: *Beginner*, *Confidence*, *Hubris*, and *Modesty*. The model emphasized the importance of novice investors evolving towards the *Modesty* stage by developing their own investment strategies. This evolvement helps limit their susceptibility to *external* IDMFs, which can lead to irrational investment decisions. The goal for novice investors should be to reach the *Modesty* stage, where they display a more conscious understanding of the potential risks involved in financial markets. At this stage, investors are less likely to act impulsively or on emotions. Instead, *Modesty* investors recognize the significance of risk management, diversification, and take a more long-term approach toward investing. Novice investors become better equipped to evaluate investment opportunities and make informed decisions when they develop their own investment strategies. However, it is important to note that reaching the *Modesty* stage does not indicate expertise. Rather, it signifies that investors have developed a modest approach towards risk-taking and financial markets, which is a solid foundation to build upon for future success.

5. Thesis Conclusions

In the fifth chapter, a summary of the thesis is presented. Next, the purpose and research question are answered with two main conclusions. After that, the thesis's contributions, critical review, and suggestions for future research are discussed.

5.1 Summary

The purpose of this study was to understand the influence of social media and *external* IDMFs (herd behavior, investor sentiment, and salience) on the financial decisions of novice Swedish retail investors during the recent stock market volatility (2020-2023). The thesis presents that during the COVID-19 pandemic, there was a large inflow of retail investors in financial markets. At the same time, due to the increased use of social media for financial information and investment advice, novice investors are at risk of *external* IDMFs, which may lead to irrational investment behavior, such as overconfidence and over- and underreactions. To understand the subject, a conceptual model (figure 1) was developed, based on the *Four-Stage model* and the *Dunning-Kruger effect*, which were linked with the *external* IDMFs through social media. The conceptual model provided a comprehensive framework that linked the respondents' learning approach (*Four-Stage model*), their confidence levels and risk-taking tendencies (*Dunning-Kruger effect*), as well as the impact of *external* IDMFs, mainly through social media.

To research the subject, qualitative interviews were held. A total of ten individual interviews were conducted. The respondents were selected by mainly snowball and convenience sampling. The interviews aimed to gain deeper insights into the investment journey of novice investors, their experience with social media, and their decision-making process in financial decisions. This was examined through a mix of open-ended questions and two fictional social media investment cases. The interview structure was based on a semi-structured interview guide that, in turn, was based on the conceptual model (Figure 1), which connected the interview questions to the literature and research purpose.

5.2 Conclusions

The purpose of this thesis was to understand how social media and *external* IDMFs influence novice retail investors' decisions in financial markets. The study shows that social media and *external* IDMFs influence novice investors' financial decisions in different ways depending on the investors' current stage in the conceptual model. The study's result is divided into two main conclusions.

First, social media works as a shortcut for novice investors to start investing with minimal knowledge. However, relying on social media leads to a superficial and short-term investment approach, with minor improvements in the investors' financial understanding. Novice investors make investment decisions based on uncertain financial information obtained from social media (such as finfluencers, online groups, forums, *et cetera*). These behaviors reinforce the tenets of *modern financial theory*, which posit that investors exhibit irrational financial decisions due to a limited ability to perform financial analysis. Although social media has become an important source of financial information, we conclude that the inability of novice investors to filter valuable information contributes to irrational financial decisions.

Second, the limited financial literacy among novice investors and their reliance on social media for investment analysis increase their vulnerability to *external* IDMFs, such as herd behavior, investor sentiment, and salience. This contributes to over- and underreactions, ultimately leading to inefficient markets. Investors who understand basic financial principles are less likely to act irrationally and experience significant losses during volatile market conditions. Novice investors in the *Modesty* stage stand out due to their ability to conduct financial analysis and rely on a stable investment strategy, resulting in more consistent and less reactive investments during market downturns. Thus, we conclude that to mitigate the influence of social media and *external* IDMFs in financial decisions, it is crucial for novice investors to establish a solid investment framework or strategy with distinct rules. Such a framework provides a foundation for evaluating investment performance and acts as a filter, preventing investors from blindly following other investors without understanding the associated risks.

5.3 Theoretical Contributions

Previous research has primarily employed quantitative methods to investigate the influence of investment decision-making factors or social media on investor behavior (Affuso & Lahtinen, 2018; Fekrazed *et al.*, 2022; Metawa *et al.*, 2019; Nareswari *et al.*, 2021). To the best of our knowledge, no existing research has focused on how both social media and *external* IDMFs influence novice retail investors' financial decisions. Furthermore, it is well-established that investors with limited financial knowledge tend to make irrational investment decisions driven by psychological biases and emotions (*i.e., modern financial theory*). However, this thesis presents a novel contribution by highlighting the role of social media in amplifying market irrationality and the influence of *external* IDMFs, particularly among novice retail investors. Thus, this thesis contributes new insights into how novice investors use financial information from social media and are influenced by *external* IDMFs and emphasizes the significance of establishing a solid financial framework to mitigate the risk of irrational investment decisions. Finally, this thesis has qualitatively captured the zeitgeist among novice retail investors who started investing during the COVID-19 pandemic, which was a period characterized by speculation and volatility.

5.4 Practical Contributions

This thesis highlights the significance of a fundamental understanding of finance as the key factor in mitigating the influence of social media and *external* IDMFs. Novice investors should not be afraid of financial markets since it provides opportunities for improved financial well-being. However, novice investors should understand and respect the risks involved in investing. All respondents in this thesis wished to have received a basic financial education from elementary or high school. A basic financial education and investment guidelines would help future novice investors avoid significant losses through trial and error. This is by far the most important contribution of this thesis, to learn from those with experience and use these insights to help the ones about to start their investment journey.

5.5 Critical Review

This thesis focused on how novice investors are influenced by social media and *external* IDMFs. In addition, to understand how the *external* IDMFs influenced the investor, it was important to include the *internal* IDMFs overconfidence and over- and underreactions as an explanation. It is recognized that there are other well-known *internal* IDMFs such as Prospect Theory, loss aversion, *et cetera*. However, the discussions on overconfidence and over- and underreactions were considered sufficient in this context. Another critique is that due to the limited sample size of only 10 respondents, transferability is limited. Although the interviews provided valuable insights and an in-depth understanding of the respondents' behaviors and decision-making processes, it is possible that a larger number of interviews could have yielded different results. Furthermore, it is worth noting that eight out of ten respondents came from the south of Sweden, and nine out of ten had either studied or were currently studying at the university level. This limited diversity in geographic and educational backgrounds may have influenced the outcomes. If the respondents had been more diverse geographically or had different education levels, the result might have been different.

5.6 Suggestions for Further Research

The aim of this research was to examine the influence of social media and *external* IDMFs on novice investors' financial decisions. It is important to note that this subject area is continuously evolving. The use of social media for financial information is rapidly increasing each year, and social media platforms are growing significantly. This trend may result in more volatile markets in the future and a greater impact of social media and *external* IDMFs on investment decisions. For this reason, it is recommended that future research updates this area of study periodically.

Another suggestion for further research is the further development and refinement of the conceptual model used in this thesis. It would be worth exploring how the conceptual model applies to investors with varying levels of experience and those who invest in multiple asset classes. Moreover, ideas are to explore whether the conceptual model operates as an iterative process, if it is possible to avoid the *Hubris* stage after multiple iterations, and if there are any other stages that come after the *Modesty* stage. These areas of investigation would contribute to a deeper understanding of investor behavior and examine the conceptual model in different contexts.

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Appendix A: Interview Guide

Interview Guide			
Introduction			
Structure: Time: 35-45 minutes Explain the recording and storage of data. Check if the respondent has received both cases. Statement before we begin: "There are no right nor wrong questions, just answer honestly and spontaneously." Ask if they have any questions before we begin. Recording confirmation: [START RECORDING] "This interview is going to record both audio and video using Zoom and be stored until we have received a passing degree on our thesis (latest August 2023). Do you confirm this, and that this recording might be shared with supervisors and examinators at Kristianstad University?" [WAIT FOR YES] "Now the interview starts"			
(1) Investment Journey and Experience	**Purpose of Questions**	**Conceptual Model**	**References**
(a) How did you get your interest for financial markets, stocks, and investments? - Was there any relative or friend that inspired you? If yes, then who and how? (b) What is the goal of your investments? - Do you enjoy it and think it is fun, or is the purpose solely to reach the goal? (c) How and where do you search for information and how has this changed over time? - Regarding new investments? - Regarding old investments (both buy and sell)? (d) Did you perceive that that you had enough knowledge when you started investing? - If no; did you realize it from the beginning or when/how did you realize it? - Would you have wished to gain a basic understanding of the stock market from elementary / high school?	*Warm-up questions to understand the participant's prior knowledge of the topic.* *Questions 1a to 1d will be a discussion to assess, summarize, and understand where the respondents are in terms of the Dunning-Kruger effect and the Four-Stage model, as well as their experiences and lessons learned.*	**Four-Stage Model** **Dunning-Kruger Effect**	Burch (1970), Biswas (2018), Dunning and Kruger (2000), (Balasubramnian & Sargent, 2020; Fleming & Mazor, 2021; Gignac, 2022),
(e) How would you describe your "investment journey" and development from when you started till now? - What lessons have you learned? (f) Can you describe how you have acted during market fluctuations, such as during periods of market increase and lately during increased concerns about inflation, interest rates, war, etc.? (g) How have you changed your behavior with market volatility (ups and downs)? - Do you experience, for example, checking your portfolio more frequently during market upswings and less during downturns (screen time)? (h) Do you consider yourself a more or less active investor today compared to when you started and during the pandemic? - What would you say is the reason for that?	Moreover, questions 1e to 1h is about the respondent's investment journey, experience, insights, and lessons learned. This is important to understand what the respondent have experienced and how they have reacted in different situations.	**Four-Stage Model** **Dunning-Kruger Effect** **Internal IDMFs** - Investor sentiment **Internal IDMFs** - Over- and Underreactions - Overconfidence	Burch (1970), Biswas (2018), Dunning and Kruger (2000), (Balasubramnian & Sargent, 2020; Fleming & Mazor, 2021; Gignac, 2022),
(2) Social Media Part 1: Brief background and experience	**Purpose of Questions**	**Conceptual Model**	**References**
(a) How has your "investment journey" been affected by social media? (b) Are you a member of any online investment groups such as forums, Discord, Facebook groups, or similar platforms? (c) How do you utilize these groups in your investment strategy?	*The purpose of this part is to receive a quick overview about how active in social media the respondent have been during their eariler investment journey. In addition, through their answers we understood how they implied social media on their investment strategies.*	**Social Media** **External IDMFs** - Herd behavior	Sautter and Ricci (2023), Griffith et al. (2020), Fekrazad et al. (2023), Philander (2023), . Metawa et al. (2017)

(3) Socal Media Part 2: Case 1	Purpose of Questions	Conceptual Model	References
(a) What do you think when you see this? (b) How inclined, on a scale of 1-10, are you to take a position based on the post? - If a low number: What else would you have wished to know before investing in the stock? (c) It's been two weeks, Latour has decreased 10% in price to 188SEK, what would you do now? - If invest/increase: Let's say "everyone" on social media claims that the stock's trend is negative and will continue to decline (at least another 10-20%) - how does this affect your view on the case? - If still haven't invested: Let's say "everyone" on social media claims that the company has upside potential and will return to previous premium levels (+20% of intrinsic value) - how does this affect your view on the case?	*The most important purpose of these questions is to understand why the respondent chose the number on the scale and how the post impacts the respondent.* *Furthermore, there are some investment decisions that has to be made. We want to receivce information that argues for how the respondent think during these kind of decisions, and what they notive in a social media post / case.*	**Social Media** **External IDMFs** - Salience - Investor Sentiment - Herd behavior **Internal IDMFs** - Overconfidence - Over- and Underreactions	Sautter and Ricci (2023), Fekrazed et al. (2022), Ayoub and Balawi (2022), Gervais and Odean (2001), Griffith et al. (2020), . Metawa et al. (2017)

(4) Social Media Part 3: Case 2	Purpose of Questions	Conceptual Model	References
(a) What do you think now? (b) How did your thoughts differ from just reading the post to then reading the comments? Did your opinion change when you read the comments? (c) On a scale of 1-10, how inclined are you to take a position based on the post+comments? - If a low number: What else would you have wished to be know before purchase of the stock? (c) Were there any specific comments or other factors that made you invest (or not), or change your opinion? (d) Have you ever invested based on a similar post before? What was it that made you invest then?	*The most important purpose of these questions is to understand why the respondent chose the number on the scale and how the post impacts the respondent. Furthermore, there are som investment decisions that has to be made. We want to receivce information that argues for how the respondent think during these kind of decisions. What this case differ from case 1 is that in this post there are other factors as comments which affects the respondent in another way.*	**Social Media** **External IDMFs** - Salience - Investor Sentiment - Herd behavior **Internal IDMFs** - Overconfidence - Over- and Underreactions	Liu et al. (2023), Affuso et al. (2018), Gervais and Odean (2001)

(5) Social Media Part 4: Case 1 vs Case 2	Purpose of Questions	Conceptual Model	References
If we compare Latour with a discount of 16-17% with Pharma that might provide 5-10x returns in two weeks. What percentage of your portfolio would you invest in each stock?	To double-check if they are honest in their eariler rating on a scale 1-10. Interesting to understand why they might give a low rating (1) in inclination, but still are willing to invest a portion of their portfolio in this specific stock.	**Social Media** **Dunning-Kruger Effect** **External IDMFs** - Salience - Investor Sentiment - Herd behavior	Sautter and Ricci's (2023), Philander (2023).

(6) Social Media Part 5: Influence	Purpose of Questions	Conceptual Model	References
(a) Have you ever scrolled a social media platform and been influenced to make a purchase? That is, have you seen a buy recommendation and then bought the stock before conducting your own research? Why? - Have you invested after conducting your own research? - If you haven't made a purchase, why did you choose to abstain? For example, did you do your own research and find it inadequate? (b) Do you ever experience FOMO (fear of missing out) when several followers or larger profiles invest in a stock that then goes up? How do you react to that? (c) Are (or have) you been active in sharing your analyses, investments, trades, market opinions, etc. online? - Either with your followers or in the form of comments on others' posts or in forums?	*To verify the responses we received in the case and possibly get an explanation for why they acted or argued as they did.* *Also to get a further understanding of you social media influence/affect the respondents financial decisions*	**Dunning-Kruger Effect** **Social Media** **External IDMFs** - Salience - Investor Sentiment - Herd behavior **Internal IDMFs** - Overconfidence - Over- and Underreactions	Griffith et al. (2020), Krishnamunti (2009), Nareswari et al. (2021), Puspitaningtyas (2013), Metawa et al. (2017), Brown and Cliff (2004), Sautter & Ricci (2023), Ayoub and Balawi (2022) Mohamed and Stavroyinnis (2022), Choi and Skiba (2015), Rubesam and de Saouza Raimundo Júnior (2022), Abrahamsson (2016), Barber et al. (2005), Huberman (2001),

(7) Diversification and Financial Knowledge	Purpose of Questions	Conceptual Model	References
(a) You answered that you have XX stocks in your portfolio, how did you decide that amount? *(b) How do you choose how much to invest in each individual company in relation to your entire portfolio?* *(c) Has this method changed over time? For example, did you have more companies in your portfolio in your first year, or do you have more companies now compared to when you started? - Do you consider diversification in your investment approach?*	*The purpose is to get a further understanding of the respondents' knowledge about basic finance and diversification.*	**Four-Stage Model** **Dunning-Kruger Effect** **Social Media** **External IDMFs:** - Herd Behavior - Salience - Investor Sentiment **Internal IDMFs** - Overconfidence - Over- and Underreactions	Griffith et al. (2020), Krishnamunti (2009), Nareswari et al. (2021), Puspitaningtyas (2013), Metawa et al. (2017), Brown and Cliff (2004), Sautter & Ricci (2023), Ayoub and Balawi (2022) Mohamed and Stavroyinnis (2022), Choi and Skiba (2015), Rubesam and de Saouza Raimundo Júnior (2022), Abrahamsson (2016), Barber et al. (2005), Huberman (2001)

(8) Investment Decision-Making Factors	Purpose of Questions	Conceptual Model	References
(a) Which holdings have you had or currently have that have experienced significant gains? And how have you acted in these situations? (b) Which holdings have you had or currently have that have experienced significant losses? And how have you acted in these situations? (c) In cases where the stocks have declined significantly (more than 50%), how have you reacted? Have you sold immediately, waited, sought support in social forums, etc.? (d) Do you act "quickly" on new information, or do you wait for confirmation from others? (e) How do you react to new negative information that is released from the company? Do you sell immediately or wait to see what is written online?	This section is great to verify if the companies that is owned by the respondent is similar to which companies that their finfluencer is owner of or if there are any other stocks that are trending on social media. With that in mind, it is possible to draw conclusion about how active and how much Social Media influence the respondents. In addition, the purpose of these questions is to understand how and why they acted as they did in cases where the stock moved significantly.	**Four-Stage Model** **Dunning-Kruger Effect** **Social Media** **External IDMFs:** - Herd Behavior - Salience - Investor Sentiment **Internal IDMFs** - Overconfidence - Over- and Underreactions	Griffith et al. (2020), Krishnamunti (2009), Nareswari et al. (2021), Puspitaningtyas (2013), Metawa et al. (2017), Brown and Cliff (2004), Sautter & Ricci (2023), Ayoub and Balawi (2022) Mohamed and Stavroyinnis (2022), Choi and Skiba (2015), Rubesam and de Saouza Raimundo Júnior (2022), Abrahamsson (2016), Barber et al. (2005), Huberman (2001)

(9) Ending: Evaluation of the session and reflection	Purpose of Questions	Conceptual Model	References
(a) Is there anything you would like to add that you have thought of afterwards or that you would like to clarify? (b) As you surely understand, we are investigating how investors are influenced by social media and external factors such as herd mentality. Is there anything you would like to add? Perhaps something we haven't mentioned or considered? Feel free to freely discuss the topic of social media and other factors that affect your investment decisions!	The purpose of this last part is to let the respondent add something that may be important to what they earlier said or add new information that they think is valuable and informative about social media and external factors that affects their investment decisions.	**Four-Stage Model** **Dunning-Kruger Effect** **Social Media** **External IDMFs:** - Herd Behavior - Salience - Investor Sentiment **Internal IDMFs** - Overconfidence - Over- and Underreactions	

Appendix B: Questionnaire (in Swedish)

Försättsblad inför intervju

Försättsblad och formulär inför intervjun. Målet är att samla in din information samt din grundläggande investeringshistorik, så att vi inte behöver gå igenom allt detta under själva intervjun.

Vi förstår att det kan vara svårt att besvara de flesta av frågorna helt exakt, så försök att svara ungefärligt. Vårt mål är att få en bild av hur aktiv du har varit och hur dina investeringar har utvecklats under olika år.

När du är redo kan du fortsätta till nästa sida och besvara formuläret. Första sidan innehåller grundläggande information, och sedan följer frågor om investeringar.

Formuläret har ingen tidsbegränsning, men besvara frågorna senast en timme före intervjun.

Om du har några frågor, tveka inte att kontakta oss på:

E-post:
Telefon:

Switch accounts

Next Clear form

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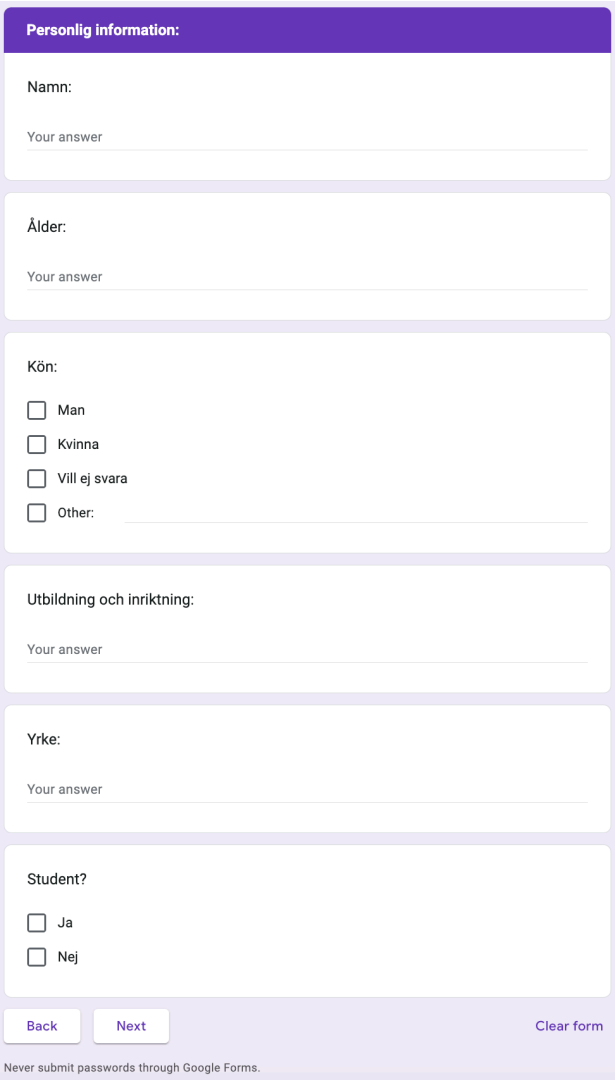

Personlig information:

Namn:

Your answer

Ålder:

Your answer

Kön:

- [ ] Man
- [ ] Kvinna
- [ ] Vill ej svara
- [ ] Other:

Utbildning och inriktning:

Your answer

Yrke:

Your answer

Student?

- [ ] Ja
- [ ] Nej

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Portfölj och investeringar

Grundläggande information för att få en uppfattning av din relation till investeringar.

Vilket år började du investera?

Your answer

Vad är din placeringshorisont?

Your answer

Vad identifierar du dig främst som? (Det är ok att fylla i flera alternativ)

- [ ] Långsiktig investerare
- [ ] Swing-trader
- [ ] Day-trader

Vad grundar du dina investeringsbeslut på? (Det är ok att fylla i flera alternativ)

- [ ] Fundamental analys
- [ ] Teknisk analys
- [ ] Rekommendationer från t ex tidningar och nyheter
- [ ] Rekommendationer från andra investerare
- [ ] Rekommendationer från vänner
- [ ] Other:

Vilka sociala medier använder du främst för finansinformation:

- [ ] Discord
- [ ] Facebook
- [ ] Forum (tex Placera eller Shareville)
- [ ] Instagram
- [ ] Reddit
- [ ] TikTok
- [ ] Twitter
- [ ] Youtube
- [ ] Other:

Vilka större profiler följer du? (max 3 st)

Your answer

Vilka tillgångsklasser investerar du i?

- [ ] Aktier
- [ ] Crypto
- [ ] Derivatinstrument (tex Optioner, Futures, Turbos, etc)
- [ ] ETF
- [ ] Fonder
- [ ] NFT
- [ ] Råvaror
- [ ] Valutor
- [ ] Other:

Har detta förändrats sen du började? I så fall hur (svara kortfattat)

Your answer

Vilka marknader investerar du i?

- [ ] Sverige
- [ ] Danmark
- [ ] Norge
- [ ] Finland
- [ ] Tyskland
- [ ] Övriga Europa
- [ ] USA
- [ ] Kanada
- [ ] Kina
- [ ] Indien
- [ ] Other: _____

Har detta förändrats sen du började? I så fall hur (svara kortfattat)

Your answer

Vilka listor investerar du i?

- [ ] Large cap
- [ ] Mid cap
- [ ] Small cap
- [ ] Micro cap
- [ ] Other: _____

Har detta förändrats sen du började? I så fall hur (svara kortfattat)

Your answer

Hur ofta genomför du i snitt en affär (köp/sälj)?

- [ ] Varje dag
- [ ] Några gånger per vecka
- [ ] En gång per vecka
- [ ] Några gånger per månad
- [ ] Några gånger per kvartal
- [ ] Några gånger per halvår
- [ ] Några gånger per år
- [ ] Other:

Har detta förändrats sen du började? I så fall hur (svara kortfattat)

Your answer

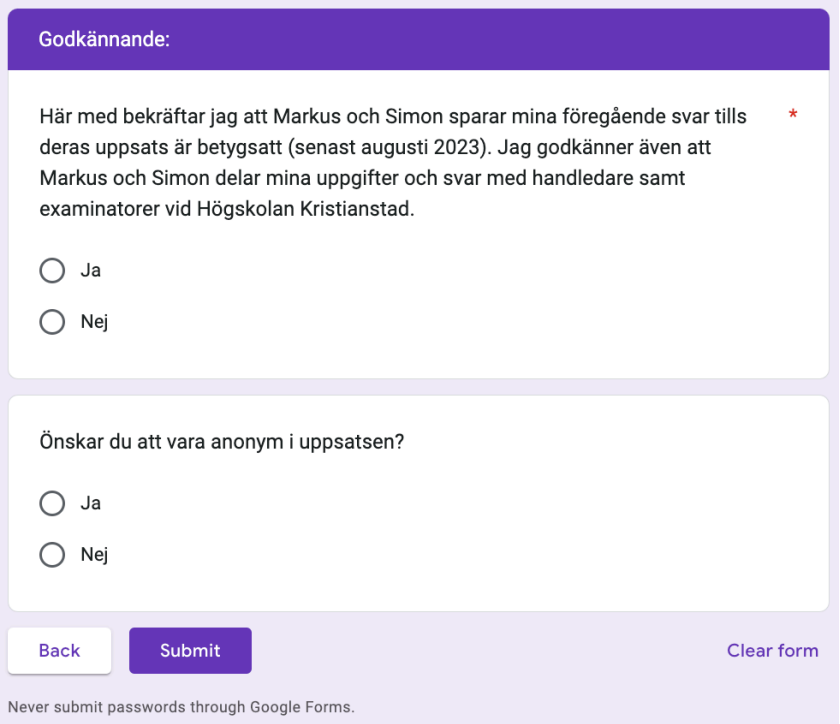
Hur många bolag har du i snitt i din portfölj?

- [ ] 1
- [ ] 1-3
- [ ] 3-5
- [ ] 5-7
- [ ] 7-10
- [ ] 10-15
- [ ] 15-20
- [ ] 20-25
- [ ] 25-30
- [ ] 30-40
- [ ] 40-50
- [ ] 50+
- [ ] Other:

Har detta förändrats sen du började? I så fall hur (svara kortfattat)

Your answer

Back Next Clear form



Godkännande:

Här med bekräftar jag att Markus och Simon sparar mina föregående svar tills deras uppsats är betygsatt (senast augusti 2023). Jag godkänner även att Markus och Simon delar mina uppgifter och svar med handledare samt examinatorer vid Högskolan Kristianstad. *

- ○ Ja
- ○ Nej

Önskar du att vara anonym i uppsatsen?

- ○ Ja
- ○ Nej

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Appendix C: Case 1

Twitter

[redacted]

Latour rapporterar ett substansvärde på 250kr/aktie för den 31 Mars 2023, vilket ger en rabatt på 16-17% från dagens aktiekurs (209 kr/aktie). Vanligtvis handlas Latour på en 20%-ig premie, därmed hör detta till ovanligheten. Det är samma stabila kvalitetsbolag i portföljen och vi tror att det är den senaste tidens oro i marknaden som slagit extra hårt på aktien… Vi ser en så gott som riskfri 20% uppsida till åtminstone fair value.

Translate Tweet

12:33 · 2023-04-25 · **15,9K** Views

10 Retweets **2** Quotes **198** Likes

Instagram

[redacted]

363 gilla-markeringar

[redacted]: Latour rapporterar ett substansvärde på 250kr/aktie för den 31 Mars 2023, vilket ger en rabatt på 16-17% från dagens aktiekurs (209kr/aktie). Vanligtvis handlas Latour på en 20%-ig premie, därmed hör detta till ovanligheten. Det är samma stabila kvalitetsbolag i portföljen och tror att det är senaste tidens oro i marknaden som slagit extra hårt på Latour… Jag ser en så gott som riskfri 20%-ig uppsida till åtminstone fair value!!📈🙏

Appendix D: Case 2

Twitter

TS på Börsen
@TS

🥳🥳🥳 NYTT CASE: PHARMA 🥳🥳🥳
Sist jag tog in Pharma i portföljen här via Twitter resulterade det i en uppgång från 2 till 3 sek vilket motsvarar 50%! Valde att lämna vid 3 sek då de publicerade sin lyckade studie av deras produkt Y-TEST i fas 2.

Translate Tweet

14:53 · 2023-04-25 **7 520** Views

20 Retweets **2** Quotes **245** Likes

Instagram

TS på Börsen

363 gilla-markeringar

TS på Börsen: Sist jag tog in Pharma i portföljen här via Instagram resulterade det i en uppgång från 2 till 3 sek vilket motsvarar 50%! Valde att lämna vid 3 sek då de publicerade sin lyckade studie av deras produkt: Y-TEST i fas 2. Tryck för att läsa mer…

Twitter

TS på Börsen @TS · 2023-04-25

Efter många års förberedande under radarn för deras kärnprodukt kommer vi äntligen få svar på om bolaget lyckats med utvecklingen av Y-TEST för att i tidigt stadie upptäcka tumörer. Om två veckor (den 10/5) kommer svaret från Fas 3-studien, och om godkänt, kan försäljningen av Y-TEST börja!

Pharma

Sector: Healthcare

Exciting year ahead

1 · 52 · 8 152

TS på Börsen @TS · 2023-04-25

Fördelar:
- Starka samarbetspartners för snabb marknadspenetration!
- Räcker med att få 1% av amerikanska marknaden för att motivera ett värde på över 10kr / aktie, vilket är en uppsida på 5x jämfört med dagens kurs (2,16kr)
- Priset har redan börjat bygga momentum inför fas 3 beskedet, vilket tyder på att flera investerare bettar på lyckat resultat
- Bolaget är positionerat för både den amerikanska, europeiska och asiatiska marknaden - med samarbetspartners i USA, EU, Japan, och Sydkorea!

1 · 86 · 5 852

TS på Börsen @TS · 2023-04-25

Nackdelar:
- I dagsläget hög burnrate… trots påfylld kassa i juni, så om de ej får godkänt så kommer det troligtvis bli en till nyemission nästa år.
- Om bolaget ej får godkänt så finns det fler produkter påväg, men dessa är i dagsläget i Fas 1&2, vilket innebär att det är minst 2-3 år innan de får chansen igen.

1 · 43 · 5 053

TS på Börsen
@TS

Jag har ökat och tänker att 5-10x pengarna är värt att betta på. Har länge följt bolaget och litar på ledningen - de har tidigare fått igenom produkter på marknaden och är övertygad om att detta är deras nya succé!

Obs: ingen rekommendation

Translate Tweet

14:58 · 2023-04-25 · **15,9K** Views

10 Retweets **2** Quotes **198** Likes

Instagram

TS på Börsen

Pharma

Sector: Healthcare

Exciting year ahead

363 gilla-markeringar

TS på Börsen: Sist jag tog in Pharma i portföljen här via Instagram resulterade det i en uppgång från 2 till 3 sek vilket motsvarar 50%! Valde att lämna vid 3 sek då de publicerade sin lyckade studie av deras produkt: Y-TEST i fas 2. Tryck för att läsa mer…

TS på Börsen:
NYTT CASE🤝🤝🤝 Sist jag tog in Pharma i portföljen här via Instagram resulterade det i en uppgång från 2 till 3 sek vilket motsvarar 50%! Valde att lämna vid 3 då de publicerade sin lyckade studie av deras produkt Y-TEST fas 2.

Efter många års förberedande under radarn för deras kärnprodukt kommer vi äntligen få svar på om bolaget lyckats med utvecklingen av Y-TEST för att i tidigt stadie upptäcka tumörer. Om två veckor (den 10/5) kommer svaret från Fas 3-studien, och om godkänt, kan försäljningen av Y-TEST börja! Bolaget i sig är positionerat för en multinationell marknad där starka samarbetspartners finns! Det räcker med att få 1% av amerikanska marknaden för att motivera ett värde på över 10kr/aktie. Vilket är en uppsida på 5x pengarna!! Dessutom har priset redan börjat bygga momentum inför fas 3 beskedet. Vilket tyder på att flera investerare tror starkt på att fas 3 kommer lyckas och genomföras!

I dagsläget finns dock en hög burnrate, trots påfylld kassa i juni. Så om de ej får godkänt så kommer troligtvis en till nyemission nästa år. Dessutom finns det andra stora möjligheter för bolaget då de är beredda att lansera mer än en produkt, Dessa är i dagsläget i fas 1 och 2 vilket innebär att det är 2–3 år innan de får chansen igen. Men sitt lugnt i båten vid eventuell nedgång så kommer vi nå minst lika höga nivåer igen!

Med tanke på denna analys ser jag en extremt stor uppsida och nästan ingen nedsida på lång sikt. Jag har själv ökat och 5-10x pengarna är en given betinvestering. Har länge följt bolaget och litar på ledningen – de har tidigare fått igenom produkter på marknaden och jag är övertygad om att Y-TEST är deras nya succé! 📈🚀

Twitter

Instagram

Twitter

Instagram

Twitter

Instagram

Twitter

Instagram

Twitter

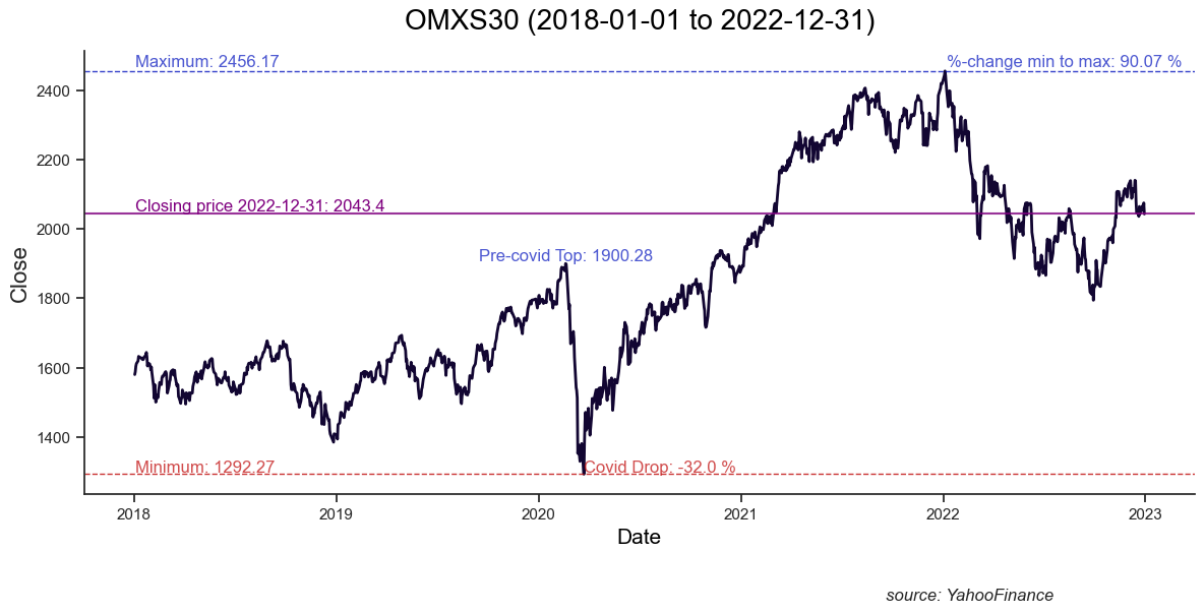
Instagram

Appendix E: Case 1 vs Case 2

Twitter

Instagram

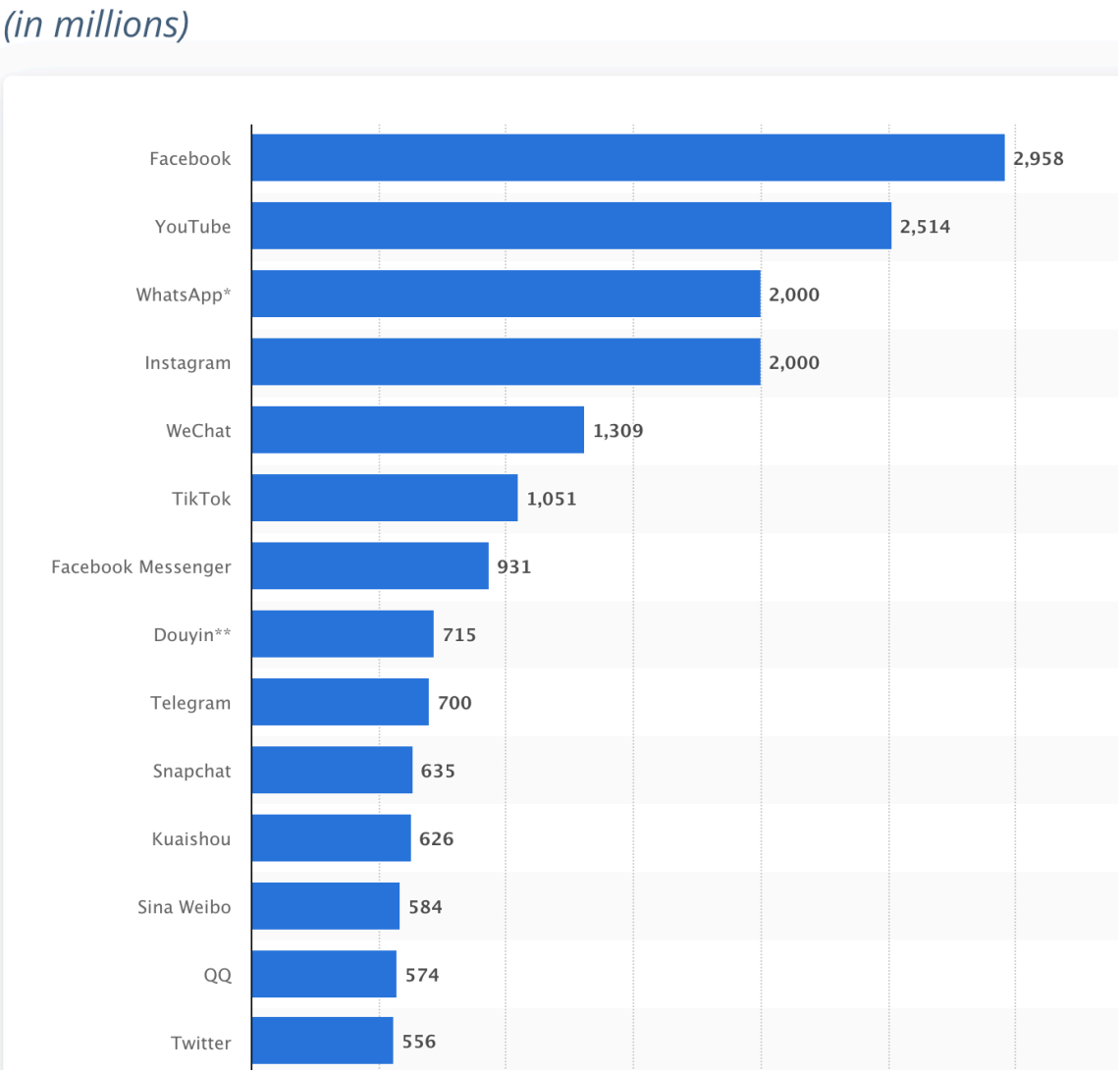
Appendix F: Index



(Data source: YahooFinance API, 2023)

Appendix G: Statista

Figure: Statista



Note: The figure shows the most popular social networks worldwide as of January 2023, ranked by number of monthly active users. (Statista, 2023)

Appendix H: Aktieraketer

Aktieraketer ›

Privat grupp · **142,1 tn** medlemmar

Gå med i gruppen

Om

Varmt välkommen till Aktieraketer, Skandinaviens största och överlägset mest aktiva aktiegrupp på Facebook! 🚀⭐

Letar du efter aktieraketer, stora som små och bolag som startat sina raketmotorer så finns de här!

Då forumet har en stor del av landets investerare närvarande på daglig basis, mellan c.a 60 000 - 70 000 stycken varje handelsdag och över 100 000 per månad har du en unik chans att ta del av skarpa tips på kommande aktieraketer, själv vara med och tipsa samt odla ditt aktieintresse. 🚀👌📣💰📈

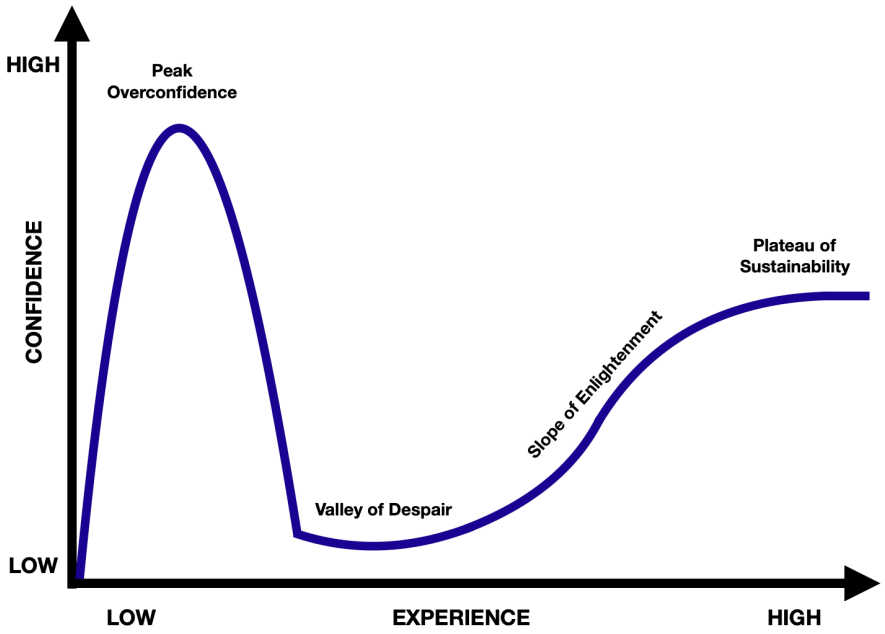
(Aktieraketer, 2023)

Appendix I: 100miljonersmannen

(100miljonersmannen, 2023)

Appendix J: Dunning-Kruger Effect

Figure: Dunning-Kruger Effect



Note: The figure shows an illustration of the *Dunning-Kruger effect*. The vertical axis shows confidence from low to high, and the horizontal axis shows experience from low to high. (Dunning & Kruger, 2