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**FACTORS AFFECTING CONSUMER INVESTMENT INTENTIONS.**  
**EMPIRICAL EVIDENCE FROM FINLAND.**

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## **ABSTRACT**

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The thesis aims to build a theoretical model to explain consumer investment intentions in stocks and investment funds. The model examines the relationships between subjective investment knowledge, expected sacrifice, expected investment value, compatibility, perceived behavioral control and investment intentions. The data was collected via web-based survey and consisted of 45- to 65-year-old Finnish consumers (n=154). Confirmatory factor analysis (CFA), structural equation modeling (SEM) and t-tests were applied in analyzing the data. The results suggest that among average household consumers expected investment value consists of three dimensions, namely, economic, functional, and emotional, whereas expected sacrifice consists of effort, financial risk, source risk, and psychological risk. Two structural models were assessed, one for stock investments and one for investment funds. Whereas the models presented somewhat different outcomes, in both models compatibility had an essential role in explaining consumer investment intentions. Compatibility was affected by expected investment value and expected sacrifice. Subjective investment knowledge impacted consumers' evaluations of the value and sacrifices. The effect of perceived behavioral control on investment intentions was rather small, however significant. Moreover, the results suggest that there are significant differences between consumers with no prior investment experience and consumers with investment experience in subjective investment knowledge, the dimensions of expected sacrifices and expected investment value, perceived behavioral control, compatibility and investment intentions.

## TIIVISTELMÄ

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Tutkielman tavoitteena on rakentaa teoreettinen malli selittämään kuluttajien sijoitusaikomuksia osakkeisiin sekä rahastoihin. Teoreettinen malli tutkii subjektiivisen sijoitustietämyksen, odotetun uhrauksen, sijoituksesta odotetun arvon, yhteensopivuuden, koetun kontrollin, ja sijoitusaikomusten välisiä suhteita. Aineisto, joka kerättiin internet-pohjaisena kyselytutkimuksena pohjautuu otokseen 45-65-vuotiaita suomalaisia kuluttajia (n=154). Analyysimenetelminä käytettiin konfirmatorista faktorianalyysiä, rakenneyhtälömallinnusta sekä t-testejä. Tulosten perusteella tavallisten kuluttajien keskuudessa sijoituksesta odotettu arvo koostuu taloudellisesta, toiminnallisesta sekä tunnepepäisestä ulottuvuudesta. Odotettu uhraus sen sijaan koostuu vaivasta, taloudellisesta riskistä, lähderiskistä sekä psykologisesta riskistä. Tutkimuksessa arvioitiin kaksi rakennemallia, toinen osakkeille ja toinen rahastoille. Vaikka mallien tulokset olivat jokseenkin erkanevat, molemmissa malleissa yhteensopivuudella oli keskeinen rooli kuluttajien sijoitusaikomuksien selittäjänä. Sijoituksesta odotettu arvo ja odotettu uhraus vaikuttivat yhteensopivuuteen, kun taas subjektiivinen sijoitustietämys vaikutti kuluttajien odottamaan arvoon sekä uhrauksiin. Kontrollin vaikutus sijoitusaikomuksiin oli varsin pieni, mutta merkitsevä. Lisäksi tulokset osoittivat, että aikaisemmin sijoittaneiden ja sijoittamattomien kuluttajien välillä on merkitseviä eroja subjektiivisessa sijoitustietämyksessä, odotettujen uhrausten ulottuvuuksissa, sijoituksesta odotetun arvon ulottuvuuksissa, koetussa kontrollissa, yhteensopivuudessa sekä sijoitusaikomuksissa.

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## **1 INTRODUCTION**

The focus of this thesis is on the factors affecting Finnish consumers' investment intentions. More specifically, the thesis' objective is to build a theoretical model to explain consumer intentions to invest in stocks and investment funds. The models will be tested with empirical data from Finnish consumers. This chapter is an introduction to the topic and will be followed by the background of the study. Next, a literature review will be presented, followed by the research problems, the theoretical framework and the definitions of the key concepts. Subsequently the delimitations and research methodology are shortly discussed. The chapter ends with the discussion on the structure of the thesis.

### **1.1 Background of the research**

According to the Consumer Markets Scoreboard (European Commission 2012) investment products are the worst functioning service market within the European Union from the consumer's point of view for the third year in a row. In terms of market groups, banking services are clearly the poorest performing cluster (European Commission 2012). Based on the report, the malfunctioning of the market is not due to lack of competition, but rather due to the irrational and uninformed demand-side (European Commission 2012).

Traditionally consumers did not have much of a selection between financial instruments and delivery channels due to the rigid structure of the industry and the presence of cartels (Beckett et al. 2000). As a result, there was no real consumer decision-making between the form or the price of investment instruments or their providers (ibid). However, during the past decades the industry has changed drastically and the selection range has increased significantly (Harrison 1994).

As legal restrictions were relaxed, the industry internationalized rapidly and new actors entered the market (Harrison 1994). Moreover, the digital revolution made the development of new financial products and solutions possible (e.g. Sunikka et al. 2010; Paunonen et al. 2012). Today financial services sector includes a wide range of businesses, such as merchant banks, insurance companies, investment banks, and pension funds (Sutton & Jenkins 2007; Puustinen 2012). Also, investment advisor services industry has become very heterogeneous, covering different types of companies with diverse business models, services and products (Hung et al. 2008). The rapid industry development has caused confusion among consumers; they are now having difficulties in understanding financial products and services; comprehending and comparing them requires effort, time and expertise (Harrison et al. 2006; Bell & Eisingerich 2007; Sunikka et al. 2009).

Finnish financial markets have traditionally been narrow compared to many other industrialized countries and households have mainly channeled their savings into deposit accounts (Holstius & Kaynak 1995). However, the sector has experienced considerable and far-reaching changes since the 1970s. During the 1980s the doors were opened to foreign commercial banks, and the EU membership in the 1990s further increased the supply of international financial services (Bask et al. 2012). In the 1990s the liberalization of the financial markets, deregulation of interest rates, and increasing competition between financial institutions caused major changes in consumers' financial behavior (Holstius & Kaynak 1995).

Due to the opportunities given by the structural changes and increased wealth, households are now increasingly participating in stock markets (Finanssialan keskusliitto 2012, see appendix 1). However, private investment business and the investors' knowledge of the investment field and options is still fairly undeveloped in Finland, and even though the

investment opportunities have drastically increased, so has the amount of household deposits (Pellinen et al. 2011, see appendix 1). Today, the amount of deposits is over 80 billion euros (Suomen Pankki 2013), which is 36% of the total household financial assets and more than half of the Finnish gross national product (Statistics Finland 2013). Of those deposits, 58% are on checking accounts (Suomen Pankki 2012). Yet, at the moment no bank in Finland is offering an interest for deposits that would beat the current inflation rate (Ministry of Finance 2012, 33) and consequently Finnish consumers are losing money. This, of course, has an impact on the economy as a whole.

Consequently, viewing consumer investment and savings decisions purely from an economic perspective, it appears that consumers are acting irrationally, that is, making their financial decisions randomly with no deliberation. However, it has been long neglected that there might be other factors than financial affecting consumer investment choices. As a result, it has been suggested that at present a huge gap separates investment research and consumers' actual investment decision-making (Clark-Murphy & Soutar 2004; Puustinen 2012; Puustinen et al. 2013). Whereas the importance of consumers' experiences, emotions and social factors have already been recognized in other service industries, financial services still believe that their customers only derive value from the transaction-based benefits (Puustinen 2012).

While traditional economic and financial theories have not been able to explain the irrational investment behavior of individuals, behavioral economics and behavioral finance have concentrated on the psychological biases behind investment choices that cause the deviations from normative theories. Recently also marketing and consumer behavior theories and techniques have been applied to generate a more comprehensive view of consumer investment behavior. This thesis aims to follow the recent research stream and thus takes a consumer centric view on the subject. Consequently, the constructs used in this study are derived

from the literature of consumer behavior. They are introduced later on in this chapter and discussed in more detail in chapter two.

The competition between financial institutions, services, and products is expected to get even tougher in the Finnish market (Bask et al. 2012), and therefore financial institutions should now constantly improve their knowledge on consumer behavior to be better able to respond to consumers' current and emerging needs. Thus, the results of this thesis can offer insights for managers in the financial sector and help them to develop more attractive marketing strategies. As in any business sector, a better understanding of consumer behavior enables profitable changes in product and service design, communication strategies and distribution-channel selection (Hensher et al. 2000). Accordingly, an improved knowledge of the relationships between the psychological factors and behavioral intentions can help in diminishing the gap between consumers and investment service providers. Moreover, the results can offer insights for public actors in their attempts to promote consumer investing.

## **1.2 Literature review**

Most of the research concerning individual investment decision-making comes from the academic disciplines of economics and finance; recently there has been a considerable amount of publications especially from the sub-fields of behavioral economics and behavioral finance. During the past decade researchers have also adopted marketing and consumer behavior theories and techniques to gain new insights into decision-making and behavior of non-institutional investors. Hence, consumer investment behavior can be examined from different viewpoints, which rather complement than omit each other (Puustinen 2012). Consequently, at first this literature review briefly discusses the most important literature and theories concerning consumer investment decision-making in traditional economics and finance and then in behavioral economics and behavioral

finance. Thereafter, the focus is shifted to recent findings on consumer investment behavior in the marketing literature.

In economics and finance, economic efficiency has been considered as the most important factor affecting investing behavior, due to the hypothesis of efficient markets (e.g. Fama 1970). In “efficient markets” prices reflect the available information at all times (Fama 1970, 383). The efficient market hypothesis is based on the assumption of rational economic man, *homo economicus*, who is trying to maximize value in the presence of perfect market information (Pompian 2011). Traditional financial theories also emphasize the role of risk in investment decisions (see e.g. Modern Portfolio Theory by Markowitz 1952). Accordingly, investment decision processes are considered to consist of information collection, risk and return estimations, and the selection of the option that is believed to maximize the monetary value, taking personal risk-tolerance into account (Markowitz 1952; Fama 1970). However, the standard finance approach relies on assumptions that oversimplify reality. Most criticisms of *Homo economicus* challenge the three of its underlying assumptions: perfect rationality, perfect self-interest, and perfect information. In sum, standard finance is built on rules how investors should behave rather than trying to observe how they actually behave (Pompian 2011).

Where traditional financial and economic theories assume that consumers are rational problem solvers, the decision-making theories in behavioral finance and economics study the limitations of one’s decision making (bounded rationality) that affect the investment behavior (Puustinen 2012). Particularly the works of Kahneman and Tversky in the 1970s played an important role in the development of behavioral finance theory (Pompian 2011). They created one of the most important theories in behavioral finance, the prospect theory, to explain how people are assumed to make choices under risk (Kahneman & Tversky 1979). Their research showed that mental illusions are actually the rule rather than the exception when

making decisions under uncertainty. Furthermore, their theories suggest that an individual's investment decision-making process is influenced by social, cognitive, and emotional factors (e.g. Tversky & Kahneman 1986).

Richard Thaler (1980, 1985) argued that in certain instances individuals acted in a manner that violated economic theory. Decision theorist Howard Raiffa introduced to the analysis of decisions three approaches that provided a more accurate view of a real person's thought process and thus challenged the prevailing decision making models (Raiffa 1968, in Pompian 2011, 33). The three approaches were normative, descriptive, and prescriptive analysis. Normative analysis defines an ideal for decision-making, descriptive analysis examines the manners in which individuals make decisions, and prescriptive analysis is concerned with tools and practical advice, which would help individuals to achieve the results defined in the normative analysis. Daniel Kahneman and Mark Riepe (1998) tied together Raiffa's decision theory and financial advising. In their research, they stated that advisors need to have a clear understanding of the emotional as well as cognitive weaknesses of investors that affect their decision-making, such as ignorance of relevant facts, limits to accept guidance, faulty assessment of own interests and inability to handle and live with risky decisions (Kahneman & Riepe 1998). All in all, the aim of behavioral finance and behavioral economics is to understand and explain actual investor behavior (Pompian 2011) and to add knowledge on the psychological factors that cause irrational financial behavior (Grinblatt & Keloharju 2000; Puustinen 2012)

Even though the traditional disciplines found in the literature to study consumer investment behavior have been economics, finance, behavioral economics and behavioral finance, recent research has suggested that marketing theoretical viewpoint could invigorate investment research by giving a more holistic view on the subject. Consequently, in order to gain new insights into the minds of average consumers, this thesis will investigate financial decision-making from a marketing theoretical



(consumer behavior) perspective. Consequently, the next paragraphs focus on discussing the most recent and relevant studies that have applied marketing theory or techniques in studying consumer financial behavior.

As already mentioned, contemporary research has shown that consumers' investment preferences include also other considerations than risk and return. Whereas in financial theories, such as the CAPM-model, it is believed that investment's value can be assessed objectively, in consumer behavior and marketing research value is considered subjective (Woodruff 1997; Puustinen 2012). In view of that, researchers have recently adopted marketing techniques to study consumer investing and saving behavior. For example, Clark-Murphy & Soutar (2004) conducted a research, which objective was to reveal factors that affect Australian investors' investment choices by using a conjoint analysis approach, which has traditionally been used in observing consumption decisions. Canova et al. (2005), then again, conducted a motivational research by using the laddering method to discover the goals motivating the decision to save.

Puustinen, Kuusela, and Rintamäki (2012) indicated in their research that for some consumers investing offers emotional value, as some enjoy evaluating alternative investments or searching for information on opportunities. They enjoy investing due to the positive emotions, such as excitement, making investing valuable in its own right (Puustinen et al. 2012). Their findings suggested that for some people investing provides symbolic and experiential meanings and thus also provide a background for the adaptation of the concept of perceived value to an investment context (Puustinen et al. 2012). In his doctoral dissertation "Towards a consumer-centric definition of value in the non-institutional investment context", Puustinen (2012) approached the phenomena of consumer behavior in investment context from a marketing theoretical perspective. He named the new construct as "perceived investment value" PIV, which is composed of six independent value dimensions, namely Economic PIV – monetary savings; Economic PIV – efficiency; Functional PIV –

convenience; Emotional PIV – emotions and experiences; Symbolic PIV – altruism; and Symbolic PIV – esteem (Puustinen 2012). Thus, according to his dissertation, multiple value dimensions are better able to describe consumer investing behavior than any economic value items alone.

Puustinen, Maas and Karjaluoto (2013) continued the work of Puustinen (2012) by developing, purifying and validating a multi-item scale to measure consumer perceived value from investing in stocks. All the three aforementioned studies argued that the way consumers perceive value in an investment context is actually similar to the way consumers perceive value in a consumption context. However, these studies were concerned with the experienced value rather than value expectations. Also, they only studied active investors and consumers who were highly interested or had previous experience in investing, rather than average Finnish consumers who most likely have less knowledge on investing. Moreover, the main focus of their studies was on individual stock investments, and thus the extent of their findings cannot be extended to other investment options.

All in all, it has become obvious that neither average consumers nor experienced investors make their decisions based on financial criteria alone. In view of that, it makes no sense setting investment or savings decisions apart from other consumer choices. Without an understanding of how consumers manage wealth, no theory of consumption is complete (Zhou & Pham 2004, 125). Therefore it is somewhat surprising that only little attention is paid to consumer investment behavior in the marketing discipline (Hoffmann & Broekhuizen 2009). Thus, even though there exists a challenge to foster the interplay between economics-based and psychology-based research in marketing (Ho et al. 2006; Johnson 2006; Ariely & Norton 2007), recent academic literature suggests that behavioral economics could invigorate marketing research and be a unifying approach to marketing problems (e.g. Johnson 2006). Moreover, the developments in behavioral finance suggest that marketing research may be appropriate in understanding financial markets where the presumption

of efficient markets does not exist (Goldstein et al. 2008). After all, behavioral finance emphasizes the differences in preferences for investments and characterizes psychological differences among investors (e.g. Wilcox 2003). Consequently, Goldstein et al. (2008, 454) argued that by examining the individuals' differences in investing needs and motivations, behavioral finance is actually asking the same question that is motivating much of marketing research: "how do consumer needs differ?"

In view of all that is said, it should be now justified that this thesis will study consumer investment decision-making from a marketing-theoretical perspective. More specifically, the objective is to examine the effects of expected investment value, expected sacrifices, subjective investment knowledge, compatibility, and behavioral control on consumer investment intentions and the relationships between the constructs. The constructs are derived from different consumer behavior theories and the theoretical discussion draws mainly from finance, behavioral finance, behavioral economics, psychology and marketing literature. A theoretical model is formulated based on the review of literature in chapter two, and subsequently tested with empirical evidence from Finnish consumers. The research model will be tested with two investment alternatives, namely stocks and funds.

### **1.3 Research problems**

The research questions have been developed based on the review of literature in chapter two. The objective of the thesis is to improve knowledge on average household consumer's investing behavior that would contribute to a deeper understanding of the factors affecting investment intentions. The focus is on two of the most popular investment alternatives among Finnish consumers, namely stocks and investment funds. Accordingly, the main research question is:

- ***How do different factors affect Finnish consumers' investment intentions in stocks and investment funds?***

In order to be able to solve the main question comprehensively, the following six supportive questions were designed:

- 1. How do expected investment value, compatibility and behavioral control affect consumer investment intentions?***

According to consumer choice theory, consumers' are most likely to purchase a product or a service with the highest perceived value (Dodds & Monroe 1985; Thaler 1985; Monroe & Chapman 1987; Zeithaml 1988; Chang & Wildt 1994). However, it has been suggested in behavioral theories, such as the theory of reasoned action (Fishbein & Ajzen 1975) and the theory of planned behavior (Ajzen 1985) that the evaluation of the object of behavior alone is insufficient to fully explain consumer behavior. Therefore, in order to create a more comprehensive view on the antecedents of investment intention, the effects of behavioral control and compatibility will be assessed. Perceived behavioral control in this thesis refers to one's perception of the sufficiency of his or her financial resources for investing (adapted from East 1993), whereas compatibility refers to the extent the consumer feels the investment alternative fits into his or her lifestyle and needs (adapted from Rogers 1995).

- 2. How does expected sacrifice affect expected investment value?***

As the first sub question measures the direct effects of factors on consumer investment intentions, the latter questions concentrate on the relationships between the underlying factors. As the research also not only aims to identify factors that increase investment intentions, but also the

factors that inhibit investing activities, a deeper look into the sacrifices that consumers expect from investing and on their effects on expected value is essential. Accordingly, we aim to test whether consumers consider other factors than the potential financial losses to decrease their expectation of the investment's value. In the case of other consumer products and services, most academic research has found a negative relationship between the constructs, yet some contradictory findings also exist (e.g. Cronin et al. 2000).

**3. *How does subjective investment knowledge affect expected sacrifices and expected investment value?***

The role of consumers' investment knowledge on investing activities has been underlined in recent academic studies (e.g. Lusardi & Mitchell 2005; Campbell 2006; Lusardi & Mitchell 2007; Pellinen 2011). Yet, it has been pointed out that more empirical research is required in order to better understand the consequences of financial knowledge (e.g. Pellinen 2011). Several studies within the field of consumer behavior have recognized that consumers with higher product knowledge use different evaluative strategies and decision processes than consumers with less knowledge, and therefore evaluate products differently (e.g. Bettman & Park 1980; Brucks 1985; Rao & Monroe 1988; Biswas & Sherrell 1993). Since understanding the effects of investment knowledge is essential for all actors in the financial sector, we aim to find out, how self-assessed knowledge affects consumer's investment related expectations.

**4. *How do expected investment value, expected sacrifices, and behavioral control affect compatibility?***

Even though some scholars have defined compatibility as an antecedent of consumer value (e.g. Lai 1995; Kleijnen et al. 2007), we suggest that compatibility can only be assessed after the consumer has formed an expectation of value, and therefore hypothesize a reversed relationship. Moreover, as it has been suggested that the less effort and learning investing requires the higher the compatibility is (Chakravarty & Dubinsky 2005), we want to test whether expected sacrifices affect compatibility similarly in the investment context. Finally, it has been suggested that when consumer's behavior is volitional, they attempt to align their behavior with their self-identity and to reduce cognitive dissonance (Karahanna et al. 2006), thus we hypothesize a relationship between behavioral control and compatibility.

**5. *How do the effects of expected investment value, expected sacrifices, subjective investment knowledge, compatibility, and behavioral control on investment intention differ in terms of stock investments and investment fund investments?***

To better understand whether consumer motivations to invest in stocks and mutual funds differ, we aim to test the theoretical model twice - first with empirical data concerning stock investments and then with data concerning investment funds.

**6. *How do the dimensions of expected investment value and expected sacrifices as well as subjective investment knowledge, compatibility, behavioral control and investment intentions differ between consumers with and without prior investment experience?***

The last research question is more descriptive one and examines the differences between consumers with and without prior investment experience. Prior research has indicated that consumers with greater product experience evaluate products more positively than consumers with less experience (Mason & Bequette 1998; Johnson et al. 2003), which causes consumers with less experience to make repeated choices over time. Therefore, one of our interests is to test whether there are significant differences in consumer investment evaluations based on their previous experience, which could indicate that consumers are prone to sticking to inferior investment options due to cognitive lock-in.

#### **1.4 Theoretical framework**

The theoretical framework of this thesis is created based on previous literature on consumer investment behavior and consumer behavior in general. Chapter two will discuss the theory behind the research model in detail, yet the main ideas will be summarized in this chapter. The objective of the theoretical model of is to test the relationships between the constructs of expected investment value, expected sacrifices, perceived compatibility, behavioral control, subjective investment knowledge and investment intentions.

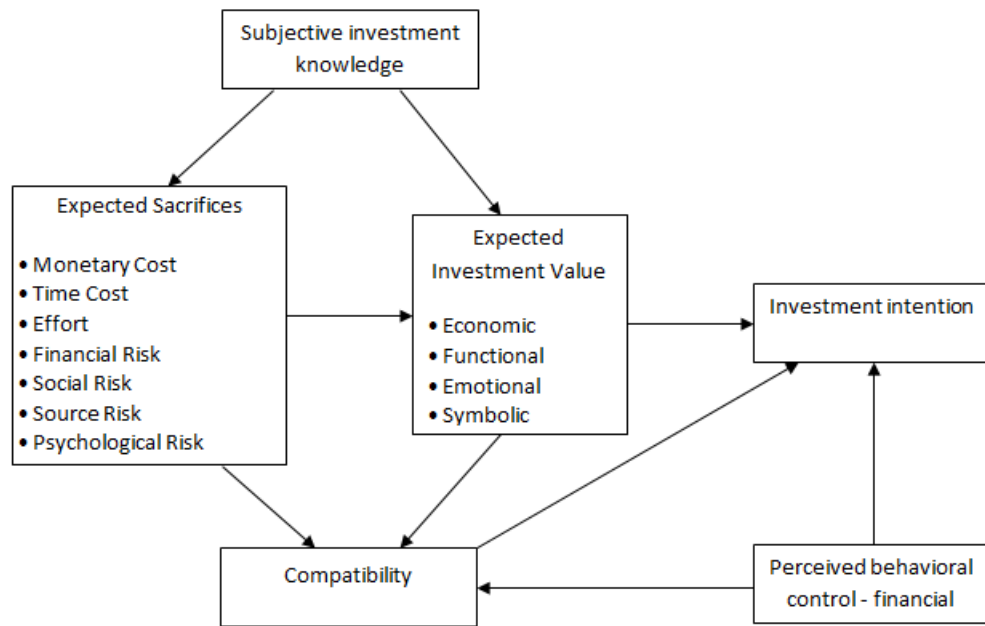
The construct of expected investment value is modified from the construct of perceived investment value (PIV) that was developed and purified by Puustinen (2012) and Puustinen et al. (2013). However, as the typology of Puustinen et al. (2013) is comprehensive in explaining the benefits consumers desire or get from investing, it fails to take into account many of the perceived sacrifices associated with investing. This is a commonly recognized pitfall of the means-ends value models (e.g. Khalifa 2004) towards which the value model of Puustinen (2012) and Puustinen et al. (2013) is strongly leaning. The means-ends models are generally able to

explain why consumers give different weights to various benefits in their evaluation process; however, they fail to take into consideration the sacrifices that consumers experience in the process of purchasing, using or disposing of the product (Khalifa 2004, 655). After all, the costs (sacrifices) of obtaining the perceived benefits are the main concern of buyers (Zeithaml 1988), and thus, are also subject to consumer perceptions (Huber et. al 2001). All this said, as the purpose of this thesis is not only to examine why consumers do intend to invest in stocks and funds, but also, why they do not, understanding the consumers' expectations regarding the sacrifices of investing in stocks and funds is essential. Therefore, a multidimensional sacrifice construct will be included in the research model.

All this said, the foundation of the theoretical framework of this thesis is on the research of Puustinen (2012) and Puustinen et al. (2013), and thus the concept of perceived investment value (PIV) is adopted and modified in a way that it measures the pre-investment rather than post-investment value. However, it is taken into account that a positive evaluation of an object does not always lead to a purchase (see e.g. Ajzen 1991), but also several other factors might impede or promote investment intentions. Therefore the direct and indirect effects of behavioral control, subjective investment knowledge and perceived compatibility will also be tested.

It however needs to be pointed out, that as in other behavioral theories (such as Theory of Reasoned Action, Theory of Planned Behavior, or Technology Acceptance Model), there is no assumption in this framework that individual beliefs would be formed in an unbiased or rational fashion or that they would represent reality accurately. Instead, beliefs are a reflection of the individual's information about the given behavior, formed by one's personal understanding and experiences. Thus, they are often inaccurate, incomplete and biased. The theoretical model of the thesis is presented below (figure 1).





**Figure 1.** Theoretical Framework

## 1.5 Key concept definitions

In order to avoid misconceptions, the key concepts of the thesis are defined in this chapter. It is important to acknowledge that for most concepts no agreement on a single standard definition exists, and therefore the most appropriate definitions found in the literature are chosen in a way that they would best fit the focus of this research. Moreover, many of the concepts are adapted and retitled in a way that they would better reflect the meaning of the concepts in the non-institutional investment context.

***Expected Investment Value*** refers to the consumer's pre-purchase anticipations and beliefs concerning the process and outcome of investing taking into account both benefits and sacrifices one expects to incur.

According to Zeithaml (1988, 14) "Perceived value is the consumer's overall assessment of the utility of a product based on the perceptions of what is received and what is given." Thus, it is the trade-off between perceived benefits the customer gets and the sacrifices the customer has to make to acquire and use the product or service (e.g. Zeithaml 1988; Gale 1994; Kotler & Keller 2009).

The value dimensions are adapted from the research of Puustinen (2012) and Puustinen et al. (2013) and include economic value, functional value, emotional value, and symbolic value. However, a distinction between perceived investment value (PIV) and expected investment value needs to be made. Since the focus of this thesis is only on pre-investment stage, and perceived value in the pre-purchase stage is based on consumer's expectations (Karkkila 2008), the term "expected investment value" will reflect the meaning of the concept better than perceived investment value, which can refer to the consumer's perceptions of value during all stages of the process. Expectation in this thesis thus refers to anticipation, i.e. consumer's overall pre-purchase assessment of value (Parasuraman

1997). Thus, the main difference between the concepts is temporal, as expectations only occur in the pre-purchase stage.

In view of that, expected investment value in this thesis refers to the consumer's pre-investment anticipation of the overall utility of investing in a specific investment product or service based on his or her beliefs of what will be received and what needs to be given. Customer expected value can only be found through consideration of the customer's reality (Karkkila 2008) because it is something perceived by the customers rather than something objectively determined by the seller (Woodruff 1997).

**Expected sacrifices** refer to dimensions that decrease consumer expected investment value. In this thesis they are defined as monetary costs, time costs, and effort together with financial, social, source and psychological risks (adapted from Diacon & Ennew 2001; Huber et al. 2001).

**Compatibility** is defined as the consumer's perception of the investment product's or service's consistency with his or her past experiences, values, and needs (adapted from Rogers 1995). The more compatible the consumer perceives the investment alternative, the more closely it fits the consumer's life situation.

**Investment Intention** is adapted from the definition of behavioral intention (e.g. Ajzen 1985; 1991) referring to an individual's expectancies about a particular behavior in a given setting and can be operationalized as the likelihood to act (Fishbein & Ajzen 1975). Accordingly, behavioral intention reflects how motivated one is to perform the behavior (Ajzen 1991). In view of that, in this thesis investment intention is defined as an individual's anticipated or planned future investment behavior (modified from Swan & Trawick 1981, 51).

**Perceived behavioral control** refers to the consumer's perception of his or her ability, i.e. resources and opportunities to perform the given behavior (e.g. Sahni 1995; Ajzen 2001; Ajzen 2008). Thus, control beliefs are consumer's beliefs about factors that might impede or enable his/her performance of the given behavior (Ajzen 2006). In this thesis, the construct refers to the consumer's assessment of his or her financial resources available for stock and fund investing.

**Subjective investment knowledge** is defined as what the consumers perceive they know about investing. Subjective knowledge is a combination of knowledge and self-confidence (Park & Lessig 1981) and has also been termed as self-perceived knowledge (Raju et al. 1995). The measures of consumer product knowledge that has been generally used in the academic publications fall into three categories of objective knowledge, subjective knowledge and usage experience (Raju et al. 1995). Objective knowledge refers to what is actually stored in memory, subjective knowledge to what individuals perceive that they know (Yi 1993), and usage experience to the amount of purchasing or usage experience with the product (Raju et al. 1995). Subjective knowledge has been found to correlate highly with both objective knowledge and usage experience (e.g. Brucks 1985; Raju et al. 1995). In this thesis, subjective investment knowledge refers specifically to the consumers' self-assessment of his or her stock / investment fund knowledge.

## **1.6 Delimitations**

The focus of the thesis is on Finnish consumers, aged between 45 and 65. This age group was chosen due to its highest individual net worth (wealth) and highest amount of deposits per person (Statistics Finland 2012a). Consequently, 45- to 65-year-old consumers were considered to have the

best chances to have enough capital for investment purposes and to be financially self-sufficient. Therefore, the results are not applicable to consumers of all age. Also, the emphasis of this thesis is only on two of the most popular investment alternatives among Finnish consumers, namely stocks and investment funds. As a result, consumers' motivations to invest in less conventional investment alternatives will not be revealed in this study. It also needs to be recognized that the characteristics of the Moreover, Finnish financial markets are different from those of the majority of domestic financial markets in other countries (Sunikka et al. 2009) and thus the results cannot be generalized to other countries.

Also, even though it is acknowledged that objective investment knowledge is a major factor affecting individual's investment decisions and choices (e.g. Lusardi & Mitchel 2005; 2008), it would have been too challenging element to survey in view of the depth of the thesis. For this reason, subjective investment knowledge was chosen. After all, it has been proven to reflect objective knowledge as well as confidence (e.g. Park & Lessig 1981) – another factor greatly influencing consumer investment decision-making (e.g. Estes & Hosseini 1988; Odean 1999).

It is also recognized that an individual's investment decision-making is an extensively researched area and that there are multiple factors influencing one's investment behavior and the choice of investment products. However, as the aim of this thesis is to study consumer investing behavior specifically from a marketing theoretical perspective, the theoretical constructs are derived from different consumer behavior theories rather than from the disciplines of finance or economics. However, cross disciplinary discussion will be conducted throughout the thesis.

## 1.7 Research methodology

The theoretical part of this thesis is based on a review of previous literature on consumer investing and saving behavior. Since many of the chosen constructs have not been previously used to explain investment behavior, the literature review not only draws from marketing literature, but also from economics and finance, and especially from the subfields of behavioral economics and finance. The review enables the formation of the hypotheses.

The empirical part consists of quantitative data, which was collected in November 2013. Since the research questions address causal research problems, a quantitative study method is used. Quantitative methods allow the testing of causal relationships between constructs, and consequently enable the testing of the research hypotheses (Murray 2003). Thus, methodologically the thesis follows causal research approach. The usage of causal models in marketing research has grown considerably, since they provide better opportunities to advance scientific knowledge by combining data with theory (Hulland et al. 1996).

The data was collected with a structured questionnaire distributed to 2400 45- to 65-year-old Finnish consumers via e-mail. The sample was selected in a way that that the subjects would most likely to be financially self-sufficient, as discussed in previous chapter and in more detail in chapter four. Targeting the right consumers was done by using the population information system of the Population Register Centre, which contains basic information about Finnish citizens. The questionnaire was distributed via Fonecta, a service provider of the Finnish Population Register Centre. Random sampling was used in order to get the most accurate presentation of the overall population and in order to minimize selection bias (Hair et al. 2011, 168). Generally, the variance between individuals within a random sample is a good indicator of the variance in the overall population, and therefore the accuracy of the results is usually easier to estimate (ibid).

The usage of an online survey was considered to be the best alternative for data collection as it allows gathering large amount of responses at a low cost (e.g. Manfreda et al. 2008; Hair et al. 2011) in a short amount of time. However, based on prior researches, the response rate for web-based surveys has been low (Manfreda et al. 2008; Mäntyneva et al. 2008). Moreover, with a self-completion questionnaire, the researcher cannot be sure whether the intended persons have completed the questionnaires themselves, responded truthfully, and without input from others (Hair et al. 2011). However, according to Saunders et al. (2007, 357) email distribution offers greater control than other means because most people only read and respond to their own emails. Moreover, self-completion online surveys tend to decrease the social desirability bias (Brace 2004, 199).

The online survey consisted of a structured questionnaire, that is, a set of predetermined questions. To ensure the accuracy of the data, a good survey research requires a good questionnaire (Hair et al. 2011, 198). For that reason, the questionnaire of this thesis is based on the literature review and on measurement scales that have already been proven to be valid and reliable by previous research. The measurement scales are presented in chapter 3.2. The quantitative analysis methods used in this thesis include confirmatory factor analyses (CFA), structural equation modeling (SEM) and t-tests for testing group mean differences. SPSS Statistics, LISREL 8.80 and Excel are used in analyzing the data.

## **1.8 Structure of the thesis**

The thesis consists of two main parts, theoretical and empirical. The empirical part consists of two chapters and the theoretical part contains three chapters. The first chapter of the thesis introduces the reader to the research setting and the topic, beginning with the background of the research and a discussion of the most relevant prior literature. Then, the research problems and the theoretical framework of this thesis are presented. Key concepts, delimitations, research methodology and the thesis' structure are also discussed.

The second chapter defines the theoretical constructs of this thesis and discusses the relationships between the constructs based on past literature. The theoretical discussion leads us to the formulation of the research hypotheses and the research model. At the end of the chapter, a summary of the hypotheses and the conceptual model showing the research hypotheses will be presented.

The third chapter begins the empirical part of the thesis by discussing the research methodology. At first, the quantitative research methods are briefly introduced, after which the measures and the background questions of the questionnaire are discussed. The chapter ends with the description of the questionnaire pretesting and data collection.

The fourth chapter begins with the first order confirmatory factor analyses for both research models (stocks and funds). Thereafter the second order factor analyses are conducted for expected investment value and expected sacrifices variables, as they are believed to be multidimensional higher order constructs. As the measurement models have been tested and proven to be reliable and valid, the structural part of the model will be assessed. Thus, the final part of the analyses includes the testing of the hypotheses.



The thesis ends with a summary of the findings, after which the theoretical and managerial implications are discussed. As a final point, the limitations are discussed and future research areas suggested.

## **2 FACTORS AFFECTING CONSUMER INVESTMENT INTENTIONS: CONCEPTUALIZATION AND RESEARCH HYPOTHESES**

This chapter will concentrate on the conceptual background of this thesis. Accordingly, the chapter will discuss the focal constructs and their relationships with each other. First, the concept of value and perceived value will be discussed in detail in order to clarify how they will – and will not – be used in this thesis. Next, the proposed construct of expected investment value will be introduced, followed by the discussion of its five dimensions. Thereafter the dimensions of expected sacrifice are presented after which the relationship between expected sacrifice and expected investment value is discussed. Then the constructs of investment intention, subjective investment knowledge, perceived behavioral control and compatibility and their associations with each other are discussed in detail. At the end of the chapter, a conceptual framework with all research hypotheses will be presented.

### **2.1 The concept of value**

The concept of value is complicated, multifaceted, and has been defined and interpreted differently by each researcher. It has also been used in diverse fields, such as finance, economics, management, justice, ethics, and marketing (Khalifa 2004), just to name a few. As a result, numerous definitions exist in the literature, and thus it has been argued that the concept is one of the most over- and misused concepts in social sciences (Leszinski & Marn 1997). Since this thesis is studying a phenomenon that has traditionally been investigated in the fields of finance and economics, where the concept of value has typically been used to refer to financial/monetary value, it is imperative to define the marketing-theoretical concept of value as it will be used in this thesis.

Whereas the traditional marketing literature defines value in a quite similar manner than finance and economics literature (due to their foundation in

“the theory of utility”), the concept of perceived value that has been used in the consumption context seems to be somewhat opposite to the finance-theoretical concept of investment value (Puustinen 2012). This is because consumption has been considered as the opposite to investing or saving. However, Puustinen (ibid) proved in his dissertation that it is possible to define investment value from a marketing-theoretical perspective. Yet, even though the concept of perceived value is subjective and personal in nature whereas investment value is considered more objective, the concepts also share significant similarities. For example, both concepts assume that the target of consumption/investment has value that can be defined as a tradeoff between benefits and sacrifices, which derive their significance from the consumers'/investors' requirements and expectations (ibid). However, in financial theory these expectations are related to maximizing financial return whereas the concept of perceived value assumes that benefits are not only monetary rewards, but also hedonistic, experiential, emotional or self-expressive (ibid.; Puustinen et al. 2013) and the sacrifices not only to consist of financial losses but also of time and effort needed to acquire and use the product/service (e.g. Grönroos 1997; Zeithaml 1988), learning costs, emotional costs, as well as different types of purchase related risks (Huber et al. 2001).

## **2.2 Conceptual background of customer perceived value**

Perceived value is a basic element of marketing theory and it is widely agreed that the identifying and creating customer value is crucial for company success and survival (e.g. Gale 1994; Slater & Narver 1994; Butz et al. 1996; Porter 1996; Woodruff 1997). Perceived value is critical for gaining competitive advantage (Parasuraman 1997; Huber et al. 2001) and thus has received extensive academic as well as industry attention (Heinonen 2004). The concept's importance in explaining different aspects of consumer behavior such as purchase intention (Dodds & Monroe 1985; Dodds et al 1991), brand choice and product selection (Zeithaml 1988),

has also been widely acknowledged (Gallarza et al. 2011). Gallarza et al. (2011, 186-187) even proposed it being the most central topic in marketing and consumer research, especially when examining customer responses to products and services.

Although scholars agree on the importance of the customer perceived value, considerable divergence of opinion exists on how to conceptualize it accurately (e.g. Khalifa 2004; Gallarza et al. 2011). Due to its complex nature, the concept has different meanings among consumers (Zeithaml 1988, 13), practitioners (Woodruff & Gardial 1996) as well as scholars (Woodruff 1997). In addition to the unclear definitions, also many terms exists in the literature, such as customer value (e.g. Parasuraman 1997; Woodruff 1997; Anderson & Narus 2004), customer perceived value (e.g. Grönroos 1997), and value for/to the customer (e.g. Woodall 2003), to only name a few.

The most commonly accepted and used perceived value measurement methods and conceptualizations seem to include those of Zeithaml (1988), Dodds et al. (1991), Gale (1994), Woodruff and Gardial (1996) and Woodruff (1997). According to Zeithaml (1988), perceived value is the trade-off between salient give and get components. He defines the get (i.e. benefit) components as salient intrinsic attributes, extrinsic attributes, perceived quality, and other high level abstractions. The give (i.e. sacrifice) components include monetary prices and nonmonetary prices (Zeithaml 1988). Then again, Woodruff (1997, 142) defines perceived value as “a customer’s perceived preference for, and evaluation of, those product attributes, attribute performances, and consequences that arise from use and that facilitate, or block achieving their goals and purposes in use situations”. Yet, considerable variations exist among the definitions, especially in terms of dimensionality (one- or multidimensional), scope of measurement (relative to competition or not), as well as the nature of costs and benefits (attribute-based or consequence-based) (Leroi-Werelds & Streukens 2011).

Even though recent research seems to agree on the multidimensionality of the concept, there seems to be no verdict on the number of the relevant dimensions (Gallarza et al. 2011). Sheth et al. (1991) used five value dimensions, namely functional value (utilitarian benefits), social value (social or symbolic benefits), emotional value (experiential or emotional benefits), epistemic value (curiosity-driven benefits), and conditional value (situation-specific benefits) (ibid). However, the categorization of value types by Sheth et al. (1991) is argued to be benefit-driven as it only considers the benefits without linking them with the consumer sacrifices (e.g. Duman 2002). Using the classification of Sheth et al. (1991) as a foundation, Sweeney and Soutar (2001) developed a multiple item scale (PERVAL), which became to consist of four dimensions: quality/performance, price/value for money, emotional value and social value. Holbrook (1996) then again used eight dimensions: excellence, efficiency, status, esteem, play, aesthetics, ethics, and spirituality.

According to Khalifa (2004) customer value definitions and measures can be grouped into three categories, namely value components models, utilitarian or benefits/costs ratio models, and means-ends models. Each model emphasizes certain value dimensions, and thus, when taken separately their usefulness is only limited. The value component models consist of esteem value (want), exchange value or (worth), and utility value (need), thus the criticism of the models is that they are concentrating on benefits, and undervaluing sacrifices (ibid). In the benefits/costs-ratio value models consumer perceptions include a trade-off between benefits and sacrifices, that is, what is received versus what needs to be given to acquire the product or service (e.g. Zeithaml 1988; Gale 1994; Kotler & Keller 2009). However, these models have been criticized for their failure to address a distinction between characteristics and higher level abstractions of value as well as treating customer as a cognitive individual, since many of the studies using this approach have a focus on objective, not subjective aspects of value (Golik Klanac 2008). The means-ends

approach differentiates the levels of value abstractions (e.g. Woodruff 1997) and it has been claimed to provide a more meaningful and a richer way to understand the needs of the customers than the benefit-sacrifice approach (Woodruff & Gardial 1996). Means-ends models base on an idea that consumers buy and use products in order to achieve favourable ends. (Komulainen 2010). However, the means-end models focus primarily on positive consequences (benefits) and thus cannot explain the sacrifices or trade-offs consumers need to make (Khalifa 2004; Golik Glanac 2008; Komulainen 2010). Golik Klanac (2008) categorized the value definitions in a quite similar manner as Khalifa (2004); however, in his classification value component models were replaced with an experiential approach, in which the emphasis was on the customer's experiences.

Nevertheless, some consensus among the numerous definitions can be found (Woodruff 1997). Scholars generally agree that customer perceived value can only be found by examining the customer's reality (Karkkila 2008) because perceived value is a subjective evaluation of the customer (Woodruff 1997). Thus, it cannot be objectively determined by the seller (ibid). Consequently, perceived value is personal in nature and varies among individuals; different customers perceive the value of a product differently (Ulaga & Chacour 2001; Eggert & Ulaga 2002) and might value different product qualities to different degrees (Parasuraman 1997). Moreover, perceived value is situational, and thus depends on the context (Zeithaml 1988; Parasuraman 1997; Woodall 2003; Golik Glanak 2008). Overall, perceived value varies between individuals, product types, and circumstances.

Another feature of customer perceived value is that it is dynamic in nature, and its determinants may change over the stages of the purchase process (Parasuraman 1997; Woodruff 1997). This means that a consumer values the product or service differently prior and at the time of purchase than during or after the use of the service or product (Gardial et al. 1994; Slater

& Narver 1994; Parasuraman 1997; Woodruff 1997). Grewal et al. (1998) differentiated between acquisition value, transaction value, in-use value, and redemption value. Woodall (2003, 10) proposed that value can be perceived in four distinct temporal forms: ex-ante (pre-purchase), transaction, ex-poste (post-purchase/consumption), and disposition.

As this thesis focuses only on consumer value evaluations in the pre-investment phase, the focus here is especially on defining customer perceived pre-purchase value. Thus, the emphasis is on the pre-investment value perceptions, and thereby also those consumers who do not have experience in investing will be able to state their expectations regarding the purchase of investment products or services. After all, it is predicted that those expectations determine their investment intentions and behavior.

### **2.3 Defining the concept of expected investment value**

First of all, if it is not clear by now, in this thesis expected investment value will be defined quite differently than in mainstream financial theories. In finance, the term “expected value” generally refers to expected monetary return of the investment, and, according to mean-variance optimization, assets with greater expected returns also typically have a higher variability of returns (Zhou & Pham 2004). Thus, the trade-off between risk and return is the same for all investors, and hence they are assumed to choose their investment alternatives according to their individual risk aversion characteristics. The modern portfolio theory (Markowitz 1952) states that a rational investor should always construct a portfolio that lies on the efficient frontier, that is, collect securities which maximize the expected return for a given level of risk. Therefore, a rational investor would not invest in a portfolio that has less favorable risk-expected return than another, but instead always chooses a portfolio from an efficient set. Thus, standard finance assumes that all consumers are wealth

maximizers, and if an individual selects an option that will maximize his or her future monetary return, he or she is said to be rational (utility maximizer) (Ricciardi 2008).

Whereas standard finance assumes that one would (or at least should) make investment decisions based on the trade-offs between expected returns and the risk associated with different investment alternatives (such as individual stocks or mutual funds), in marketing literature utility is defined quite differently. In finance, expected investment value is usually defined as the probability weighted average of all possible monetary outcomes, yet, in this thesis the concept denotes the consumer's pre-investment assessment of the overall value of the investment product or service, determined by the consumer's anticipations (i.e. beliefs) regarding the benefits and sacrifices related to the investment.

Perceived value in the pre-purchase stage is based on consumers' expectations (e.g. Karkkila 2008), and thus the pre-purchase value-ratio is the customer's belief about what he or she expects to receive in comparison to what needs to be given up (Woodruff & Gardial 1996). In marketing strategy literature, value focuses on the assessment made by the customer when making a purchase decision (Gallarza et al. 2011). According to Levitt (1983, in Jensen 1996), consumers value products according to their ability to help consumers in solving their problems. Grewal (1998) defines acquisition value as what the consumer thinks he or she is going to obtain by purchasing the product relative to the costs given up to acquire it. Thus, the anticipated value is based on the consumer's prediction of the benefits and costs related to the products purchase, use and disposition.

Since there are many definitions for the term "expectation", it needs to be clarified how exactly it will be used in this thesis. Expectation in this thesis refers to anticipation, i.e. consumer's overall pre-purchase assessment of value (Parasuraman 1997). Yet, according to Zeithaml and Bitner (2003)



expectations can be separated into desires and predictions. The predicted and desired expectations are influenced by past experience, word-of-mouth communications, as well as explicit and implicit promises (ibid). Whereas the first two are self-explanatory, the explicit promises refer to the personal and nonpersonal statements about the service or product made by the organization and implicit promises are service or product related cues such as price (adapted from Zeithaml & Bitner 2003, 72). Therefore, it will once again be emphasized that in this thesis, the term expectation is used to refer to the consumer's prediction/anticipation (i.e. belief) rather than desire.

Ojasalo (2001) categorized different types of expectations into fuzzy, explicit-implicit, and unrealistic-realistic. When consumers have fuzzy expectations, they have an unclear understanding of the value in an offering and they are not sure what they even want. Explicit expectation refers to precise assumptions or desires relating to the product or service, whereas implicit expectation refers to something that is not actively or consciously thought of but rather taken as self-evident. Unrealistic expectations are unlikely for any service provider to fulfill whereas realistic expectations are likely to come across (ibid). Building on this idea, value can be seen as a continuum of different types of expectations (Heinonen 2004).

It has been stated that none of the three perceived value models (value-component, benefits/cost, or means-end) is complete and therefore their usefulness is only limited when used independently (Khalifa 2004), each of them has its own explanatory objective and emphasis. Whereas the value-component model is able to explain the perceived value of different product features and the means-end model is capable in defining the benefits that the goal-concentrated consumers seek, they both have a strong focus on the benefits and thus devalue the sacrifice side of the value equation (Khalifa 2004). According to Puustinen (2012) the Perceived Investment Value (PIV) - model is a synthesis of means-end

and benefit/cost-ratio models, however, he (ibid, 61-62) acknowledged the difficulty of combining the models. As the PIV-model neglects some vital consumer perceived sacrifices such as different types of risks perceived by the consumer prior the investment process, it can be argued to be leaning more strongly towards the means-ends model than the benefits/cost model. The emphasis of the research of Puustinen (2012) was to measure perceived value at a quite general level, whereas this thesis aims to give more specific information on the sacrifices that affect consumer investment decisions.

Consequently, as this thesis does not only aim to explain why consumers do intend to invest, but also why they do not, we want to give more emphasis on the sacrifice dimensions than was given in the PIV-model of Puustinen (2012) and Puustinen et al. (2013). Furthermore, since the PIV-model has only been used to measure post-investment value perceptions and this thesis aims to measure pre-investment value perceptions, a closer look at the perceived sacrifices is needed – particularly because consumer's pre-purchase perception of risks have a great effect on consumer behavior (e.g. Cronin et al. 1997; Huber et al. 2001; Huber et al. 2007). Taking into consideration that people generally feel stronger desire to avoid losses than to acquire gains (Kahneman & Tversky 1979), a measurement scale where the impact of sacrifices will be tested separately, seems more appropriate.

Due to the aforementioned reasons, this thesis will adopt the benefits/cost-ratio value model, according to which value is a function of the get (benefit) and give (sacrifice) components (e.g. Zeithaml 1988; Day 1994; Grönroos 1997). Consequently, sacrifices are considered to be antecedents of value. Next chapter will discuss the dimensions of expected investment value in more detail, after which the dimensions of expected sacrifices are discussed.

### **2.3.1 Dimensions of expected investment value**

As already discussed, expected value consists of two elements: expected (i.e. anticipated) benefits and sacrifices, between which consumers make a trade-off as they are comparing the alternatives. Expected benefits refer to the utility the customer anticipates before the purchase or use of the product or service (adapted from Komulainen 2010). Since this thesis adopts the value dimensions suggested in the research of Puustinen (2012), each dimension will be now shortly presented.

#### **Economic value**

Consumers might perceive the monetary savings of the products or services differently, thus they might think that other investment products offer more for the same price (management fees). Consequently, when consumers are sensitive to monetary savings, companies should focus on monetary promotions rather than nonmonetary, i.e. hedonic (Chandon et al. 2000). Thus, expected economic value is higher when the consumer considers the premiums and management fees to be low (adapted from Puustinen 2012, 130), and consequently expected value is predicted to increase as consumers consider the investment alternative to be a cost effective way to invest.

Moreover, consumers desire monetary profits from investing, that is, to increase their wealth by investing. Accordingly, a favourable monetary return within a certain time frame is expected as a result from investing in a specific product (Puustinen 2012). Risk-adjusted return refers to the ratio of profit to risk (ibid.). According to standard finance (e.g. Markowitz 1952) in order to get a perspective on the relative performance of the investment alternatives, consumers' should compare the same risk measure to each alternative. Thus, expected economic value also includes the expected efficiency of the investment alternative, which refers to the consumer's expectation of the potential monetary gain in comparison to the risk of the investment.

**Functional value**

Functional value refers to the consumer's expectation of the convenience, that is, the easiness of investing in a given investment alternative. Some consumers might enjoy investment related activities whereas some prefer alternatives that require less involvement, and thus expected convenience is valued differently by consumers who prefer dedicating more or less time and effort in investment matters (Puustinen 2012).

**Emotional value**

Emotional value consists of happiness-related metrics, and is thereby more abstract and subjective than the economic and functional aspects of investing. Emotional value refers to the positive emotions and experiences that consumers expect to encounter during the investment process. Thus, consumers might expect investing to deliver positive emotions, such as enjoyment, excitement, or thrills from investing in a given alternative (Puustinen 2012).

Moreover, consumers might expect investing to offer experiences such as reading and chatting about investment related issues or taking part in investment-focused events (Puustinen 2012). According to happiness economics and hedonomics, individuals try to maximize their happiness (i.e. positive aspects of hedonic experience) instead of wealth or monetary profit (Hsee et al. 2008). Thus, the expected emotional benefits refer to the experiential (fantasies, feelings, and fun) aspects of investing (see Holbrook & Hirschman 1982).

**Symbolic value**

Products and services can carry and communicate symbolic meanings, which can be significant determinants in product selection (Hirschman & Holbrook 1982) and therefore consumers might choose alternatives that are inferior in their characteristics and performance (Creusen &

Schoormans 2005). Whereas in economics self-interest has been considered as the main motivation, also selfless behaviors (i.e. altruism) can be a consequence of individual rationality (Becker 1976). For example, most people tend to give money for charity (Mullainathan & Thaler 2000) without expecting any compensation or recognition from their act. Thus, if a consumer believes that investing in a given alternative provides an opportunity to demonstrate one's benevolence, the expected investment value is predicted to be higher.

Since investing also tests consumer's financial capabilities, he or she might expect investing in a given investment alternative to enhance his/her status or self-esteem (Puustinen 2012). Thus, investing might be related to one's status or self-esteem. Since the choice of a product might reflect the kind of a person the consumer wants to be (Creusen & Schoormans 2005), products are purchased and possessed in order to express one's ideal identity and to give a certain kind of impression to others (e.g. Belk 1988).

### **2.3.2 Dimensions of expected sacrifice**

The dimensions of expected sacrifice represent the consumer's anticipation of the give components of the value formulation, and thus are expected to decrease the consumer's perception of value. However, no consensus or agreement on the sacrifice dimensions exists among scholars. Whereas early research defined consumer sacrifice only as the monetary price of the product or service (e.g. Dodds & Monroe 1985), today most scholars separate the dimensions of sacrifice at least to two main categories: monetary and non-monetary (e.g. Zeithaml 1988; Dodds et al. 1991; Cronin et al. 1997; Grönroos 1997; Cronin et al. 2000). Most commonly used non-monetary sacrifices include time and effort, yet many academics differentiate also psychological costs (e.g. Zeithaml 1988), even though the constructs are conceptually related. Psychological costs refer to the consumer's emotional investment or mental stress, while time

and effort costs refer to non-emotional sacrifices (Baker et al. 2002). Grönroos (1997) divides sacrifices into price, direct, indirect and psychological costs. According to Verma (2009) buying generally includes time, inconvenience, psychological discomfort and search efforts.

It has also been argued that perceived risk should be included in the value models (e.g. Cronin et al. 1997; Sweeney et al. 1999; Huber et al. 2001; Huber et al. 2007; Kleijnen et al. 2007) because risk is an essential part of the cost of the acquisition and use of any good or service. After all, as consumers make purchase decisions, they need to consider the long-term effects of the ownership including potential losses (Sweeney et al. 1999). In marketing research, the topic of perceived risk has been employed since 1960's (see Bauer 1960); however no general agreement on the concept's definition still exists today (Mitchell 1999). According to Taylor (1974, 54): "in a choice situation, risk can be interpreted in terms of possible loss. The loss can be psycho/social terms or in functional economic terms, or in some combination of both forms of loss." Thus, whereas in many disciplines, such as economics, statistical decision theory and game theory, risk refers to potential positive and negative outcomes in a choice situation, the definitions in consumer behavior literature refer only to negative outcomes (Stone & Gronhaug 1993). Perceived risk has proven to be powerful in explaining consumers' behavior; after all, consumers are more inclined to avoid mistakes than to obtain additional benefits (Mitchell 1999, see also prospect theory by Kahneman & Tversky 1979).

More recently also behavioral finance has acknowledged the importance of investor's perception of different types of risks in his or her decision-making (e.g. Snelbecker et al. 1990; MacGregor et al 1999; Diacon & Ennew 2001; Ricciardi 2004; Sachse et al. 2012) instead of only considering objective risk measures such beta, standard deviation, variance that have generally been used in traditional finance. Ricciardi (2004) defined investor risk as situational and dependent on the

characteristics of the investment product or service. Thus, whereas in standard finance the value of an investment is seen to be dependent on risks such as liquidity risk, interest rate risk, inflation risk, and default risk, in behavioral finance and marketing literature risk is subjective in nature. Both disciplines define risk as individual's subjective evaluations (perceptions) that are based on beliefs and feelings towards risk in a specific situation rather than on any kind of mathematical calculations or statistical evidence. Consumers have a tendency to misperceive risk because they lack information; however, findings have revealed that perceived risk has a stronger influence on investment decisions than actual risks (Ricciardi 2008). Therefore, a closer look at the subjective risks can provide additional insights for the modeling of economic judgments (Weber 2004, in Ricciardi 2008).

This discussion should justify the addition of risk components in the investment value model. As a result, in this thesis the sacrifice dimensions are defined as monetary costs, time costs and effort together with financial, source and psychological risks (adapted from Diacon & Ennew 2001; Huber et al. 2001).

### **Monetary costs**

Monetary costs refer to the consumer's perception of the monetary expenses of the investment alternative, such as management fees, subscription fees, redemption fees, as well as trading, custody and termination expenses.

### **Time costs**

Research in economics and marketing has shown that there are other significant costs to consumer than monetary, which are acknowledged in the full price models (e.g. Zeithaml 1988) and one of these costs is time (e.g. Becker 1965; Leuthold 1981; Zeithaml 1988). In the theory of

allocation of time, Becker (1965, 494), argued that the cost of a service is generally simply said to equal their market prices, however consumption takes time – “time that could have been used productively”. In a similar manner, it is expected that consumers allocate their time wisely when making investment decisions.

Since some individuals have a higher cost for their time, it makes sense that they are not interested in spending time doing investment research and consequently prefer to delegate their portfolios to professionals (Zhu 2005). The research of Zhu (2005) provided evidence that the cost of time affects a household’s decision between direct and delegated investing. Individuals with higher cost of time, that is, higher family responsibilities, less leisure time, and greater professional engagement, invested a higher portion of their wealth through delegated portfolio management (*ibid*).

### **Effort**

Expected effort consists of the consumer’s expectation of the amount of searching, learning and cognitive effort prior and during the investment process. After all, consumers cannot collect and process information about performance, fees, and other investment characteristics at zero cost (Sirri & Tufano 1998). Comparing alternatives requires information searching on commissions and fees, growth figures in the economy, financial figures of companies, and reputation of the seller, for example (Sunikka et al. 2009). Accordingly, gathering and analyzing information about different investment alternatives consume individual investors’ time and money. Thus, these activities constitute costly search (Hortaçsu & Syverson 2004). Therefore, it can be predicted that consumers tend to purchase those investment products or services that are less costly or easier for them to identify. According to consumer behavior literature, consumers gather information on the product class of interest from both internal (memory and past experience) and external (advertising, articles, etc.) information sources to form a “consideration set” (Capon et al. 1996).



Since consumers tend to form this consideration set of alternatives from which they choose the product or service (e.g. Eliaz & Spiegel 2011), consumers' decisions between different investment alternatives can be affected by advertising, personal selling, journalism, peer recommendations, etc.

According to Sirri and Tufano (1998), Jain and Wu (2000) and Zhu (2005), search cost influences individual decision-making in the financial markets. The findings of the first two studies (Sirri & Tufano 1998; Jain & Wu 2000) showed that individuals tend to choose mutual funds with lower search costs rather than funds with higher future returns. Zhu (2005) found out that search cost does not only influence the choice between funds, but also the choice between investing directly in stocks and indirectly through mutual funds. Also, Capon et al. (1996) noticed that consumers had invested in funds that they had seen in advertisements, indicating that many consumers tend to avoid investment related search. Moreover, as consumers have too many investment choices, they might consider the cost of searching the right one too high. Even though the basic assumption of economic theory is that consumers are better with more options, too many investment alternatives can cause information overload, creating consumer confusion, and consequently, lead to declining investment intentions or choosing the default option (Tapia & Yermo 2007).

Another cost for the consumer to obtain the benefits of the purchase is the cost of learning (Huber et al. 2001). Consumers might expect that they have to do a lot of learning in order to familiarize themselves with the investment alternative. Since learning takes time and effort, consumers are likely to perceive it as a sacrifice lowering their overall utility from investing. Thus, consumers have a tendency to avoid the learning process (Yang & Peterson 2004).

Cognitive effort can be defined as the cost of thinking (Cooper-Martin 1994), and thus, consumers allocate their cognitive resources with deliberation. Individuals have a tendency to only expend the effort that is necessary to make a satisfactory decision rather than an optimal one (Garbarino & Edell 1997). When decisions require more cognitive effort, decision-makers often use heuristics and strategies that make the situation easier, and therefore often result in biased or inaccurate decisions. Thus, decision-makers are willing to give up benefits in order to keep the required cognitive effort low. In view of that, it is predicted that the higher the consumer expects the required cognitive effort; the lower is his or her expectation of the investment's value.

### **Financial risk**

Conventional financial theory assumes that financial risk is objective and thus determined by the volatility of yields (Diacon & Ennew 2001). Another assumption is that individual investors trade off this measurable risk with the potential monetary return as they are pondering whether to purchase the investment product or not (ibid). However, according to Capon et al. (1996) and MacGregor et al. (1999) return and risk do not fully explain the decision-process, but suggest that perceived risk is a better predictor of an investor's behavior. Since individuals have an ability to only process a limited amount of information in a given time, significant amount of facts is ignored (Ricciardi 2008). This, then again, leads to the misperception of risks and improper financial judgments (Ricciardi 2004). After all, an individual's behavior is based on his or her perception of the reality – even if it has nothing to do with the reality itself. Therefore, in this thesis, financial risk is defined as the consumer's subjective evaluation (i.e. perception) of the potential monetary loss, the uncertainty in terms of return, and the risk of not obtaining expected returns.

## Source risk

In some markets sellers have more and superior information than buyers, thus a conflict of interest exists in the provision of information by the sellers (Bolton et al. 2007). Thus, if the assumption is made that not all investors are perfectly informed, and hence do not know which investment product would best serve their needs, the potential to missell financial products rises. Due to the conflict of interest in providing advice and selling financial products, it has been argued that these activities should be separated (Bolton et al. 2007). Particularly, when it comes to mutual funds, problems arise because firms tend to push their own products over alternatives (e.g. Sirri & Tufano 1998). Thus, there exists a conflict of interest of whether an advisor should tell the client that another financial company might be offering a better suitable product.

According to Diacon and Ennew (2001) a dimension of perceived risk that has not gained much attention is the role of distrust in products, their providers and salesforces of investment products and services (i.e. source risk). From the consumer's perspective, the purchase of an investment product is quite different from buying daily products or durable goods since they do not come with any guarantees with fixed period (Pellinen et al. 2011). Thus, consumers with low investment knowledge are almost enforced to trust bank personnel or other investment advisors. Yet, consumer's risk perceptions might be inflated as they think their lack of knowledge will be used against them (Diacon & Ennew 2001). Also, if sellers and financial advisers do not have a trustworthy reputation, consumer's perception of risk is clearly higher. Campbell et al. (2011) note that despite the disclosure rules, lack of consumer trust is a problem that affects consumer usage of certain financial products. Moreover, according to one of the latest investment researches conducted in Finland (Norvestia Sijoitusbarometri 2012), 28% of the respondents do not want to invest because they do not trust the investment service provider to act in their

best interest. Therefore those who offer financial planning should have a clear understanding of consumer's perceptions of risk.

### **Social risk**

Perceived social risk can be defined as the extent that the consumer believes that other people judge him or her by his or her investment decision (adapted from Brody & Cunningham 1968). In general, people's decisions are often similar to the choices made by those around them (Bursztyn et al. 2012). As they become faced with risky decisions, they may seek others' opinions for the purpose of lowering risk (Hansen 2005). In recent years several studies within the field of behavioural finance have examined whether peer effects influence consumers' financial decisions (Benartzi & Thaler 2007). Peer effects refer to situations where one's purchase of an asset leads to another's similar choice (e.g. Bursztyn et al. 2012). Furthermore, the research of Fong and Wyer (2003) showed that individuals with only little investment experience, tended to use other's decisions as bases for their own, and especially the willingness to take risk was affected by the decisions of others. Consistent with this, Campbell (2006) argued that unsophisticated households have a tendency to purchase financial products that are the standard in their country, because they tend to follow the example of their relatives and neighbors.

Therefore, it can be inferred that social acceptance has a major impact on consumer investment decisions. Thus, one might be afraid of looking foolish, untrendy or losing status in one's social group as a result of investing in a certain way (Herrero Crespo et al. 2009). Perceived social risk therefore discourages one from engaging in activities which are not accepted by others or are in conflict with his or her self-image or personality (Hoffman & Broekhuizen 2009). After all, even though investment products are low in visibility, investment decisions are not made in social isolation and thus investors might be concerned whether

their investments are socially acceptable and whether they make a good impression on others (ibid).

### **Psychological risk**

According to Ricciardi (2008), risk is also determined by different types of behavioral risk characteristics such as the degree of dread, worry, familiarity, and controllability. Psychological cost can be defined as the emotional labor or mental stress during the purchase process (Baker et al. 2002) or as the uncertainty, frustration, fear or anger experienced by the consumer (Broekhuizen 2006). Herrero Crespo et al. (2009) define psychological risk as the potential loss of self-esteem that stems from the frustration of not achieving one's buying goal. Thus, when an individual considers the exchange as risky, it creates tension for him or her, that is, he or she experiences psychological discomfort (Stone & Gronhaug 1993, 43). Therefore, it is suggested that when a consumer is afraid of the psychological cost of investing, the overall expected sacrifice is higher and he or she is less willing to invest.

### **2.3.3 The effect of expected sacrifice on expected investment value**

In this thesis it is theorized that expected sacrifice is multidimensional in nature. Thus, several dimensions form the overall pre-purchase perception of sacrifice, which is defined as what needs to be given up in order to acquire a product or service (e.g. Zeithaml 1988; Grewal et al. 1998). Accordingly, the less sacrifices one needs to make, the more value they will perceive (e.g. Eggert & Ulaga 2002). Most academic literature seems to agree with this relationship, yet there have been some contradictory findings regarding the association between the concepts. For instance, Cronin et al. (2000) hypothesized a negative relationship between sacrifice and value, yet the results of their research presented an insignificant relationship. Thus, the relationship between the concepts, especially in the

pre-purchase stage, needs further investigation. To test the predominant theory, the next hypothesis is proposed:

*H1: Expected sacrifice has a direct and negative effect on expected investment value*

## **2.4 The relationship between expected investment value and investment intention**

Next the focus of the thesis will shift to the relationship between expected investment value and investment intention. In this subchapter, the concept of investment intention is first defined after which the theoretical background on the relationship between the two concepts will be discussed. In conclusion, the second hypothesis of the research will be presented.

### **2.4.1 Conceptual background of investment intention**

Investment intention refers to one's intention to invest in a given investment alternative. The construct is adapted from the concept of behavioral intention, which is most often defined as the individual's expectancies about the likelihood to act (Fishbein & Ajzen 1975) or as an anticipated future behavior (Swan & Trawick 1981, 51). Generally intention is observed to be related to the corresponding behavior (Karjaluoto 2002) because people generally have a tendency to do what they intend to do. The Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) suggest that an individual's behavior can be predicted by behavioral intention, i.e. that a person's intention is the immediate determinant of that action (e.g. Ajzen 1985; Ajzen 1991).

According to TRA and TPB, intentions are assumed to reflect the motivational factors affecting individual's behavior, which indicate how much effort one is willing and planning to put forth in order to perform the

behavior (Ajzen 1991, 181). Accordingly, the stronger the intention to engage in the behavior, the more likely its performance should be. Yet, it is pointed out that intention can only lead to behavior if the behavior is under one's "volitional control", meaning that it is voluntary (ibid, 181-182). Consistent with these two theories, the Technology Acceptance Model (TAM) also suggest that consumer beliefs affect behavioral intentions, which in turn have been found to have a strong correlation with usage (behavior) (Davis et al. 1989).

However, stated intentions do not always perfectly match with the respondents' true intentions (e.g. Chandon et al. 2005; Sun & Morwitz 2010). According to the research in psychology and marketing, there are three main reasons for the differences between consumers' stated intentions and actual purchase behavior: systematic biases in intention statements; unexpected changes in consumer's life situation; and the imperfect correlation between intentions and action (ibid). Overstating intentions might be caused by the social desirability bias (e.g. Bagozzi et al. 1999) or positive intention bias (e.g. Klein et al. 1997). Positive intention bias refers to a situation when the respondent exaggerates his or her future demand for a product or service whereas social desirability bias refers to the person's overreporting of activities that might be socially desirable (Randall & Fernandez 1991). Also, if the survey in question requires a lot of cognitive effort from the respondent, he or she might just give simple satisfactory answers, and thereby provide incomplete or biased answers or no true information at all (Krosnick 2006). Moreover, sometimes the individual believes at the time of the questioning that he or she will perform the action in the future, yet, might later have a change of mind and thus decides to pursue another alternative (Sheppard et al. 1988).

However, the measurement of intention-behavior relationship has been found to be extremely difficult due to the fact that measuring intentions affect the respondents' subsequent behavior (e.g. Morwitz et al. 1993;

Morwitz & Fitzsimons 2004; Chandon et al. 2005). One reason for the mere-measurement effect is that questioning intentions increases the respondent's salience of thoughts regarding the surveyed alternatives (Morwitz & Fitzsimons 2004). Therefore, forecasting future behavior is without a doubt difficult. However, in this thesis the purpose is not to measure to what extent intentions lead to subsequent behavior, but rather to reveal factors (beliefs) that affect investment intentions, regardless of whether those intentions cause behavior or not. Therefore, next the constructs of expected investment value, perceived compatibility, behavioral control, and subjective investment knowledge will be discussed as the antecedents of investment intentions.

#### **2.4.2 The effect of expected investment value on investment intention**

Perceived value is considered to be a key variable affecting consumer choice (Chang & Wildt 1994). According to Thaler (1985), buyers base their purchase decision on their evaluation of the offers value. Moreover, high perceived value has been found to drive consumer willingness and intention to purchase (Dodds & Monroe 1985; Monroe & Chapman 1987; Zeithaml 1988). In view of that, it is anticipated that the consumer's subjective evaluation of the investment's overall expected value also affects his or her intention to invest. This discussion leads us to the second hypothesis:

*H2: Expected investment value has a direct and positive effect on investment intention*

#### **2.5 The relationship of subjective investment knowledge to expected investment value and expected sacrifices**

This subchapter will focus on the effects of subjective investment knowledge on expected investment value and expected sacrifices. First, the conceptual definition of subjective investment knowledge is given and



then its relationship with expected investment value and expected sacrifices will be considered. The discussion leads us to the third and fourth hypotheses.

### **2.5.1 Conceptual background of subjective investment knowledge**

Subjective knowledge plays an important role in any purchasing decision, also in the choice of investment products. Consequently, consumer knowledge is an important construct in understanding consumer behavior (e.g. Brucks 1985; Park et al. 1994) as well as investment behavior (e.g. Lusardi & Mitchell 2005; Lusardi & Mitchell 2007). In consumer behavior literature knowledge constructs have been generally divided in either two (e.g. Park et al. 1994) or three classes (e.g. Raju et al. 1995). Whereas most classifications comprise objective and subjective knowledge, other definitions also include usage experience. Objective knowledge refers to the information that has actually been stored in memory, whereas subjective knowledge refers to what consumers perceive to know about the product or service (Yi 1993). Usage experience, then again, refers to prior involvement or use of the product (Raju et al. 1995).

Subjective knowledge is a mixture of knowledge and self-confidence (Park & Lessig 1981) and has been also termed as self-perceived knowledge (Raju et al. 1995; Lusardi & Mitchell 2007). As consumers assess their own knowledge, they go through a judgment process in which they scan their own memory in the search of cues that would assist them in evaluating their level of knowledge (Park et al. 1994). Thus, consumers base the knowledge judgments on product information that is stored in memory, but might in reality incorrect (ibid). According to previous research (e.g. Barber & Odean 2001) investors have a tendency to be overconfident and thus overstate their level of knowledge. However, Pellinen (2009) and Pellinen et al. (2011) found out that Finnish small investors have a quite accurate view of their personal level of knowledge and generally do not overstate their investment abilities.

### **2.5.2 The effect of subjective investment knowledge on expected investment value and on expected sacrifices**

During the past decades the complexity of financial instruments has increased and forced individuals to cope with new and more sophisticated investment products (Lusardi 2007). Consequently, consumers are now facing difficulties in understanding investments, and within the European markets, only one third of investors feels themselves capable of understanding which investment would give the best return (Chater et al. 2010). One in five claimed that they were really confused with the investment alternatives and were unable to understand the jargon that was used in the description and therefore did not know which option to choose. Only two in five felt that they understood the information regarding their investment options (ibid).

According to behavioral economics, the amount, source, and nature of the information individuals receive about saving and investing are likely to influence their financial decisions. After all, to be able to make a decision between investment products, a consumer is expected to possess a clear understanding of the characteristics of the alternatives as well as their own preferences (Costanzo & Ashton 2006). Lusardi and Mitchell (2005) detected that consumers with higher perceived financial knowledge were more likely to engage in financial planning and financial preparations for retirement. Thus, their findings highlight the connection between knowledge, intentions, and behavior. Their results are consistent with the familiarity heuristic, according to which people are more likely to involve in a behavior if they feel more competent (Ackert & Deaves 2010).

Whereas the ambiguity aversion heuristic refers to a situation where people prefer risk to uncertainty, Heath and Tversky (1991) found that individuals do not prefer an option with known risk to an option with unknown risks when the choice options are familiar. According to Fox and

Tversky (1995), this is due to comparative ignorance. The comparative ignorance hypothesis proposes that people's confidence is weakened as individuals compare their limited knowledge in the relevant domain with their superior knowledge about another domain, or when they compare themselves with more informed individuals (Fox & Tversky 1995). This causes the feeling of ignorance, which makes people judge the situation ambiguous and to avoid it. Therefore, consumers who are aware of their limited investment skills are less likely to participate in risky asset markets, (Campbell 2006), and might even avoid investment/savings decisions altogether (Lusardi & Mitchell 2005).

This was also confirmed in the research of Lusardi and Mitchell (2005), where it was found that objective financial knowledge and confidence had a positive impact on the consumer's financial planning intentions. However, their results suggested that confidence played a greater role. In 2007, Lusardi and Mitchell examined the influence of self-assessed, i.e. subjective financial literacy on financial planning and on objective knowledge. According to their findings, objective and subjective measures were positively related and both had a great influence on financial planning behavior.

Accordingly, consumers with higher level of investment knowledge are more likely to invest than consumers with lower level of knowledge. However, in this thesis knowledge is not expected to impact investment intentions directly, but rather indirectly through the consumers' evaluations of the investment. After all, several studies within the field of consumer behavior have concluded that the consumers with higher product knowledge use different evaluative strategies and decision processes than consumers with less knowledge (e.g. Bettman and Park 1980; Brucks 1985). Moreover, Rao and Monroe (1988) found out that consumers with high product knowledge used extrinsic cues when evaluating a product whereas consumers with less knowledge relied on intrinsic attributes. Biswas and Sherrell (1993) studied the influence of product knowledge on

consumer internal price standards, and their findings suggested that consumers estimated prices and acceptable prices differently according to their degree of product knowledge. Moreover, recent research has shown that product knowledge reduces consumer's perception of risk (Nepomuceno et al. 2013). Thus, it has been suggested that product knowledge is an important factor affecting the evaluation of a product, and subsequently indirectly influencing consumer's purchase intentions. Thereby, the next hypotheses are:

*H3: Subjective investment knowledge has a direct and negative effect on expected sacrifices*

*H4: Subjective investment knowledge has a direct and positive effect on expected investment value*

## **2.6 The relationship between perceived behavioral control and investment intention**

Next, the relationship between perceived behavioral control and investment intention will be discussed. The subchapter begins by defining the concept of perceived behavioral control, after which the linkage between the concepts is discussed, and finally the fifth research hypothesis is presented.

### **2.6.1 Conceptual background of perceived behavioral control**

Ajzen (2008, 537-538) defines perceived behavioral control as the "self-efficacy in relation to the behavior". Thus, it is the individual's perception of whether he is capable to perform the behavior or not (Ajzen 2006). In the theory of planned behavior, perceived behavioral control is determined by the set of control beliefs regarding the factors that might enable or prevent one to perform the behavior in question (Ajzen 2006). The theory of

planned behavior extended the theory of reasoned action (Fishbein & Ajzen 1975) by including the perceived behavioral control in the model since the original model was unable to deal with behaviors that individuals did not have volitional control over (Ajzen 1991). And naturally, performing many behaviors (such as consuming or investing) depends on the availability of resources. However, perceived behavioral control focuses on the individual's perception of controlling factors rather than actual control (ibid). Thus, perceived behavioral control usually varies across situations, behaviors, and time (ibid.). In this thesis, the controlling factor is defined as the consumer's perception of his or her financial resources.

### **2.6.2 The effect of perceived behavioral control on investment intention**

Since the theory of planned behavior is one of the most significant and popular behavioral model among researchers (Ajzen 2002) and has been found to explain intentions and different behaviors quite well (Karjaluoto 2002), there exists plenty of evidence on the relationship between perceived behavioral control and behavioral intention. Armitage and Conner (2010) conducted a literature review on 185 independent studies using TPB that were published before 1998, and found that generally perceived behavioral control (PBC) accounted for substantial amounts of variance in intention and behavior. Moreover, in the research of East (1993) on investor motivations to make applications for shares in privatized British industries, perceived behavioral control was found to affect one's investment intention. As already discussed, in this research the limiting factor is defined as the consumer's perception of his or her financial resources. Thus, it is predicted that one will only invest when he or she perceives his or her current financial resources to be sufficient for investing. Therefore, when one perceives his or her self-efficacy higher, he or she is more likely to invest. Accordingly, the next hypothesis is:

*H5: Perceived behavioral control has a direct and positive effect on investment intention.*

## **2.7 The relationship of compatibility with perceived behavioral control, expected investment value, expected sacrifice and investment intention**

Next, the conceptual background of compatibility will be discussed. Subsequently, expected investment value, expected sacrifices and perceived behavioral control will be discussed as the antecedents of compatibility. The discussion leads us to the sixth, seventh and eight research hypotheses. Thereafter the relationship between compatibility and investment intention will be discussed, which leads us to the ninth and final research model hypothesis.

### **2.7.1 Conceptual background of compatibility**

In the theory of diffusion of innovations (DOI), Rogers (1995, 224) defines compatibility as the degree to which an innovation is perceived to be consistent with the individual's prevailing needs, values, and past experience. Moore and Benbasat (1991) then again excluded the "needs" as it was considered to overlap with the construct of relative advantage in the DOI-model, as there cannot be an advantage that would not reflect the consumer's needs. Karahanna et al. (2006, 781) then again divided compatibility into four separate aspects: "compatibility with preferred work style, compatibility with existing work practices, compatibility with prior experience and compatibility with values." Tornatzky and Klein (1982) reasoned that that compatibility should be divided into normative/ cognitive compatibility and practical/operational compatibility. Whereas the first refers to the compatibility with what people think about the product, the second refers to compatibility with what they do (ibid). This research adopts the commonly accepted definition of Rogers (1995).

### **2.7.2 The effect of perceived behavioral control on compatibility**

Perceived behavioral control is determined by the set of control beliefs regarding the factors that might enable or prevent one to perform the behavior in question (Ajzen 2006), and thus we hypothesize that behavioral control has an effect on consumer's perception of the compatibility of the investment. After all, when behaviors are volitional, people attempt to reduce cognitive dissonance and align their behavior with preferences that reflect their self-identity (Karahanna et al. 2006). Since compatibility also refers to past behavior and existing practices (Rogers 1995), and preferences are the driving force of behavior (Karahanna et al. 2006), we argue that the more the consumer feels he or she has control over the behavior the greater the compatibility is. And vice versa, if one believes there is a factor controlling his or her behavior, in this case, if he or she considers his or her financial resources to be insufficient for investing in stocks or funds, it is unlikely that he or she perceives the investment alternative to be compatible with his current situation. Thus, the following hypothesis is drawn:

***H6:** Perceived behavioral control has a direct and positive effect on compatibility.*

### **2.7.3 The effect of expected investment value on compatibility**

According to Karahanna et al. (2006) compatibility with values and preferred work style rests on the individual's belief that the product offers positive value, helps promote deeply held values and achieve the self-concept of the way the individual would like to work. Thus, we propose that consumer's perception of compatibility is greater as the expectation of the investment's economic, functional, emotional, and symbolic value is higher. Accordingly, one's perception of the investment's compatibility with his or her current situation and needs is anticipated to increase as one expects the monetary gains of investing to be greater. Also, the more convenient, fun and exciting, and self-esteem enhancing one considers

investing in stocks or investment funds to be, the greater he or she also perceives the compatibility with his or needs and lifestyle. After all consumers' perception of value is connected with their perception of the extent to which the product would satisfy their needs (Bowman & Faulkner 1997). Yet, we want to underscore the theorized causality. Even though some researchers define compatibility as an antecedent of perceived value (e.g. Lai 1995; Kleijnen et al. 2007), we argue that a consumer first forms an expectation of the investment's value, after which he or she is able to assess the investment product's compatibility with his or her needs, values and lifestyle. Consequently, we hypothesize:

*H7: Expected investment value has a direct and positive effect on compatibility.*

#### **2.7.4 The effect of expected sacrifices on compatibility**

As consumers feel that using the product would not require a lot of learning or change in their current behavior, their perception of the compatibility of the product is higher (Chakravarty & Dubinsky 2005). Accordingly, the less effort and changes in one's working methods investing necessitates, the higher the compatibility is (adapted from Karahanna et al. 2006). Thus, we hypothesize that the less investment related sacrifices one expects, the better he or she considers the investment product to suit his or her lifestyle, present circumstances and needs. Thus the next hypothesis is:

*H8: Expected sacrifice has a direct and negative effect on compatibility.*

#### **2.7.5 The effect of compatibility on investment intention**

Among diffusion research there is plenty of evidence that compatibility affects and individual's adoption (i.e. purchase/use) of a product or a



service (see e.g. a review by Rogers 1995). Moore and Benbasat (1996) found that usage was significantly affected by consumer's perceptions of the products usefulness, ease of use and compatibility. Tornatzky and Klein (1982) conducted a meta-analysis of 100 innovation research papers and concluded that relative advantage, compatibility and complexity were the three major determinants behind consumer utilization decisions. Moreover, compatibility has been found to affect consumer intentions in several other studies (e.g. Taylor & Todd 1995; Agarwal & Prasad 1997).

All this said, in this thesis it is predicted that consumer's intention to invest (i.e. purchase investment products) is also affected by his or her perception of the degree to which the investment alternative fits his or her life. After all, as compatibility is perceived to be higher, using or purchasing the product is perceived to require only little learning or change in behavior (Chakravarty & Dubinsky 2005). Hence, if the consumer feels that there exists an option for wealth allocation that is more compatible with his or her current needs or situation (e.g. investment time) and which requires less change in one's existing habits, then he or she is more likely to invest in that particular investment/saving alternative. This causes consumers to become locked-in to certain products (Murray & Häubl 2007). For example, if consumers consider that keeping their assets on a bank account requires the least amount change in behavior, they perceive bank accounts more compatible than stocks or investment funds. After all, consumers tend to follow habits and are prone to choosing solutions that require the least amount of effort (Collan 2007; Collan & Tetard 2007; 2009). This discussion leads us to the conclusion that if investment and saving decisions are similar to other consumption choices, compatibility should have a positive relationship with an individual's intention to invest and consequently the following hypothesis is drawn:

***H9: Compatibility has a direct and positive effect on investment intention.***

## **2.8 Differences between consumers with and without prior investment experience**

The last research problem deals with the differences in the consumer evaluations based on their prior investment experience. As previously discussed, experience correlates highly with consumer self-assessed knowledge (e.g. Brucks 1985; Raju et al. 1995), and thus it is assumed that consumers with prior investment experience evaluate their knowledge level above the non-investors. Moreover, prior research has indicated that consumers with greater product experience are better able to evaluate products and product attributes than consumers with less experience (Mason & Bequette 1998). More experienced consumers find it easier to recall and understand product information and thus evaluate products differently (ibid).

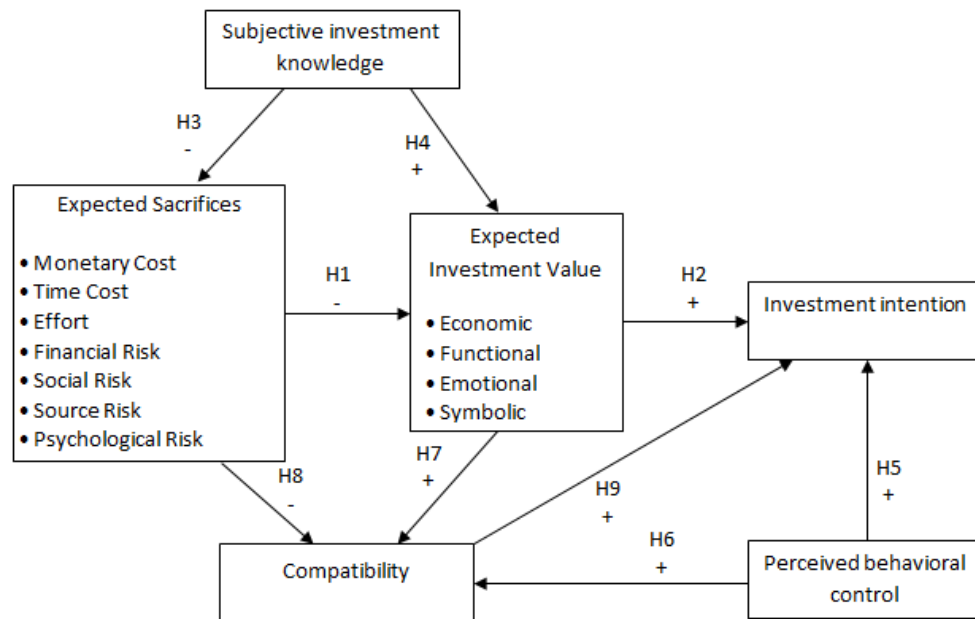
Johnson et al. (2003) suggest that experience affects consumer evaluation of the costs of the purchase. Particularly cognitive costs are dynamic and differ among consumers with dissimilar experience, as with practice makes consumers more efficient in accomplishing tasks (ibid). However, as cognitive switching costs are difficult to evaluate in monetary terms (ibid) they have not been considered in financial theories. Nevertheless, recent research has demonstrated that as consumers gain more experience, the costs associated with usage and thinking about the product decrease (Murray & Häubl 2007). Consequently, experience increases the consumer's positive evaluation of the alternative (e.g. Johnson et al 2003; Murray & Häubl 2002; Murray et Häubl 2007), and as the available alternatives require some form of specific skills, consumers tend to make repeated choices over time and thus a lock-in arises (Murray & Häubl 2007). Lock-in refers to consumers' preference to avoid immediate costs and to select more easily available options, even at the cost of losing future benefits (Zauberman 2003). Thus, we assume that lock-in also affects the way consumers think about investing and about their capabilities to invest in stocks and investment funds.

This discussion leads us to the supposition that consumers with and consumers without prior investment experience differ not only in terms of investment knowledge but also in terms of their evaluations of the expected sacrifices, expected investment value, compatibility, perceived behavioral control, and investment intention. Therefore the final hypothesis of this thesis is:

***H10:** Expected investment value, expected sacrifices, subjective investment knowledge, compatibility, perceived behavioral control and investment intention differ between consumers with and without prior investment experience.*

**Table 1.** Summary of hypotheses

| <b>Summary of hypotheses</b> |  |
|------------------------------|--|
| <b>1</b>                     | Expected sacrifice has a direct and negative effect on expected investment value.  |
| <b>2</b>                     | Expected investment value has a direct and positive effect on investment intention.  |
| <b>3</b>                     | Subjective investment knowledge has a direct and negative effect on expected sacrifices.   |
| <b>4</b>                     | Subjective investment knowledge has a direct and positive effect on expected investment value.   |
| <b>5</b>                     | Perceived behavioral control has a direct and positive effect on investment intention.   |
| <b>6</b>                     | Perceived behavioral control has a direct and positive effect on compatibility.  |
| <b>7</b>                     | Expected investment value has a direct and positive effect on compatibility.   |
| <b>8</b>                     | Expected sacrifice has a direct and negative effect on compatibility.  |
| <b>9</b>                     | Compatibility has a direct and positive effect on investment intention.  |
| <b>10</b>                    | Expected investment value, expected sacrifices, subjective investment knowledge, compatibility, perceived behavioral control and investment intention differ between consumers with and without prior investment experience. |



**Figure 2.** Research model with hypotheses

### **3 RESEARCH METHODOLOGY**

This chapter explains the research methodology of the thesis. At first, the quantitative research techniques will be introduced after which the empirical measures and background questions of the survey are presented. Then the pre-testing of the questionnaire is discussed. The chapter finishes with the discussion on the data collection procedure.

#### **3.1 Quantitative research**

The research problems of this thesis address causal research problems, and thus, the answers should identify the relationships between the research variables. Consequently, in order to be able to test the set hypotheses, a quantitative research approach is adopted. It is recommended that causality is tested with regression models, structural equations and comparative methods (Keat & Urry 1975, 97). As structural equation modeling (SEM) allows the testing of several causal relationships between variables simultaneously (Byrne 1998, 3), it is used as the main analysis method in this thesis. Yet, since the last research problem deals with group mean differences, t-tests are also used for data analysis.

SEM is a confirmatory approach to data analysis used in causal research (Byrne 1998, 3). It combines confirmatory factor analysis with econometric modeling, and allows one to estimate simultaneously several separate but interdependent equations, which include both latent and manifest variables (Vieira 2011, 4). The simultaneous estimation allows the assessment of goodness of fit, which describes the consistency between the model and data (ibid). SEM is very useful for theory testing, which then again is imperative in developing marketing models (Steenkamp & Baumgartner 2000). Whereas most econometric approaches do not take into account measurement error, SEM enables the identification of errors of measurement and removing them from the data (ibid). Moreover, SEM allows testing of direct, indirect and total associations between variables (Vieira 2011, 4).

The variables in structural equation models are divided into latent and manifest variables (Nummenmaa 2004, 371). Latent variables are theoretical variables (i.e. constructs) that cannot be directly observed or measured (Long 1983, 11; Yli-luoma 1996,15), and thus they are determined by the variation in the manifest variables (Nummenmaa 2004, 371). Therefore, before testing the structural model, the reliability and validity of the indicators (manifest variables) has to be assessed, in order to see how well they capture the constructs used in the model (Steenkamp & van Trijp 1991). This is done with confirmatory factor analysis (CFA), which enables the isolation of random error (Steenkamp & Baumgartner 2000). Since exploratory factor analysis does not allow incorporation of theory based constraints and can therefore load any item on any latent variable (e.g. Long 1983), confirmatory factor analysis was chosen to be applied in this thesis. CFA is considered appropriate when there is theoretical knowledge of the underlying latent variable structure (Byrne 1998).

Consequently, in the presence of latent variables, a structural equation model actually consists of two models: a measurement model and a structural model (Nummenmaa 2004, 371; Vieira 2011, 4). The measurement model expresses all latent variables' relationships to manifest variables, and thus by examining the measurement model, one is able to make conclusions about the validity of measurement (ibid). Structural model, then again, describes the relationships between the latent variables, and divides them into exogenous (independent) and endogenous (dependent). Consequently, examination of the structural model allows one to evaluate how well the theory fits the empirical data (Nummenmaa 2004, 374; Hair et al. 2010, 640).

Structural equation modeling in this thesis is conducted with the LISREL program since it is the most widely used software for SEM (Hair et al. 2010, 632). The steps taken in this thesis' structural equation modeling

follow the four phases described by Vieira (2011, 5): (1) model development, (2) path diagram construction, (3) assessment of measurement model and (4) assessment of structural model. The first phase, which deals with the building of the conceptual model, was discussed in the theoretical part in chapter two. The second phase that is the graphical illustration of the relationships between the latent variables was presented at the end of chapter two. In chapter four, the third and the fourth phase of SEM will be discussed in detail.

### **3.2 Measures**

As previously discussed, the data was collected by using a self-administered questionnaire that was distributed to the respondents via email. The data collection method determines which analysis methods can be used (Erätuuli et al. 1994, 41) and questionnaire is the most frequently used survey method in explanatory research where the purpose is to test the research hypotheses. To ensure the validity and reliability of the collected data, the questionnaire was designed by using measurement items from prior research. Also, before the actual launch, a pilot test was conducted. These steps will be discussed next in more detail.

Measures are the tools for collecting the empirical data. According to Metsämuuronen (2002b, 10), developing or choosing proper measures are particularly important for the success of the research. Especially when SEM has been chosen as the analysis method, the scales should be reliable and valid, with strong psychometric properties (Hair et al. 2010). It is suggested to use existing measures whenever possible (ibid; Churchill 1979; Karjaluoto & Juntunen 2007, 12; Metsämuuronen 2011, 67) and therefore, as already said, most of the theoretical constructs of this thesis are measured with validated items from prior research. Some of the measures, however, have been modified to better fit the purposes of this research, yet the alterations are based on the theoretical discussion.

Moreover, since to my best knowledge, there is no existing measure for expected investment sacrifices, a new measurement scale has to be developed. Yet, to the extent possible, the measurement items are selected from previous literature, and thus, have already been tested to be valid and reliable.

The measures used in this thesis are multi-item, since most marketing academics consider multiple-item measures to be a necessity to ensure the validity of the major constructs (Bergkvist & Rossiter 2007). According to Churchill (1979) multi-item measures should be used in marketing research because single-items typically have a lower correlation with the attribute being measured and might correlate with another attribute. Furthermore, individual items tend to have a significant measurement error and consequently the responses are unreliable (Churchill 1979, 66). Conversely, with multi-item scales the constructs can be measured more accurately, typically with higher reliability and with lower measurement error (ibid.; Peter 1979). Multi-item measures can also capture additional information and more aspects of the construct of interest than a single-item measure (Baumgartner & Homburg 1996), especially when the construct in question is complex in nature (Peter 1979). Moreover, in structural equation modeling (SEM), multiple-item measures are the norm (Baumgartner & Homburg 1996). Whereas no generally agreed rule for the number of items exists, the recommendation in SEM is to use at least three or four indicators per each latent variable (ibid).

Marketers have often been criticized for failing to ascertain the reliability or validity of their measurement items (Karjaluoto 2002, 74-75); however scholars agree that a measurement scale needs to be reliable in order to be valid and to have practical utility. Cronbach's alpha, which measures the internal consistency of the set of items, is the most commonly used measure for scale reliability (Peterson 1994). It can thus help in assessing the quality of the instrument (Churchill 1979). A low alpha indicates that the items capture the construct poorly. However, there exist different



guidelines and recommendations on what is an acceptable alpha value (Peterson 1994). Nunnally (1978, 245) proposes that at an early research stage, alpha of .70 (modest reliability) is enough; whereas for basic research the alpha should be between .70-.80. Values above .80 are unnecessary because at that level measurement error does not considerably affect correlations. Moreover obtaining higher reliability would most likely require increasing the number of items, possibly making the test excessively time consuming (Nunnally 1978, 245). In applied settings then again, scale reliability should be above .90 (ibid). Generally, alpha values under .70 are considered insufficient, and should not be accepted (Hair et al. 2010, 92). In this thesis, a cut-off rate of .70 was used, yet most measures yielded higher alphas.

The questionnaire of this thesis consisted mainly of subjective measures, which were measured on seven-point Likert-like scales. According to Metsämuuronen (2002a, 17) Likert-scales are commonly used in research, which purpose is to measure respondents' attitudes or other subjective evaluations. Furthermore, prior research has shown that responses to seven-point bipolar scales tend to yield highly reliable measures of intentions or beliefs (Karjaluoto 2002, 75). Fewer steps would pose a risk that the variable's variance becomes too small, and as a result the reliability of the scale would be low (Metsämuuronen 2002a, 18). On the other side, scales with more steps have been found to increase the testing time (Matell & Jacoby 1972). However, to keep consistency with prior research and the original research of Park et al. (1994), the construct of subjective investment knowledge was measured on a nine-point scale. The following subchapters present the measures and the item statements in more detail.

### ***Expected investment value***

The 18 measure items of expected investment value are adapted from the study of Puustinen et al. (2013). In the research of Puustinen et al. (2013)

the Cronbach alpha's for the measurement items ranged from .82 to .92. The statements have been altered in a way that they would better reflect the consumers' pre-purchase expectations (i.e beliefs) about the value of a given investment alternative. Thus, each item statement was rephrased in a way that it refers to the consumer's expectation rather than his or her post-investment experience.

| <b>EXPECTED VALUE</b>                      | <b>ITEM</b> | <b>STATEMENT</b>   |
|--|-------------|--|
| Economic value - monetary savings          | EMS1        | I expect investing (in X) to be an inexpensive way to invest (management fees)                 |
|  | EMS2        | I believe investing (in X) is priced fairly (management fees)                                  |
|  | EMS3        | I believe investing (in X) is reasonable-priced (management fees)                              |
| Economic value - efficiency                | EEF1        | I expect investing (in X) to be a sufficiently good way to satisfy my investing requirements   |
|  | EEF2        | I expect investing (in X) to be an efficient way to invest                                     |
|  | EEF3        | I expect investing (in X) increases my wealth adequately in view of the risk I bear            |
| Functional value - convenience             | FCO1        | I expect investing (in X) to be a convenient way to invest                                     |
|  | FCO2        | I expect investing (in X) to be an easy way to invest  |
|  | FCO3        | I expect investing (in X) not to be unnecessarily time-consuming                               |
| Emotional value - emotions and experiences | EEE1        | I expect investing (in X) to be a nice way spend time  |
|  | EEE2        | I expect investing (in X) to be exciting in a good way   |
|  | EEE3        | I expect investing (in X) to be entertaining   |
| Symbolic value - altruism                  | SAL1        | I expect investing (in X) to give me an opportunity to support my fellow men                   |
|  | SAL2        | I expect investing (in X) to give me an opportunity to support the well-being of other people  |
|  | SAL3        | I expect investing (in X) to give me an opportunity to express benevolence toward other people |
| Symbolic value - esteem                    | SES1        | I expect investing (in X) would make me feel valuable  |
|  | SES2        | I expect investing (in X) would boosts my self-esteem  |
|  | SES3        | I expect investing (in X) would increase my self-confidence                                    |

### ***Expected sacrifices***

Since to the best of our knowledge, there exists no scale for expected investment sacrifices, a set of measurement items needs to be developed. However, as it was already discussed in the theory part why each sacrifice dimension might be important for the consumer when making an investment decision, no reasoning or arguments to support the chosen measurement items will be discussed here. The statements of the measurement scale have been developed by using the theory as a background.

| <b>EXPECTED SACRIFICES</b> | <b>ITEM</b> | <b>STATEMENT</b>   |
|----------------------------|-------------|--|
| Monetary cost              | MC1         | I expect investing (in X) to be an expensive way to invest   |
|                            | MC2         | I expect the expenses of investing (in X) to be high   |
| Time cost                  | TC1         | I expect investing (in X) be time-consuming  |
|                            | TC2         | I expect investing (in X) to require time out of my other activities   |
| Search cost                | SC1         | I expect investing (in X) would require a lot of information searching prior to investing.                       |
|                            | SC2         | I expect investing (in X) would require a lot of searching in order to find the right Xs.                        |
| Learning cost              | LC1         | I expect investing (in X) to require self-studying   |
|                            | LC2         | I expect investing (in X) to require learning new skills and absorbing new information                           |
| Cognitive effort           | CE1         | I expect investing (in X) to require a lot of mental effort  |
|                            | CE2         | I expect investing (in X) to require continuous thinking and deliberation  |
| Financial risk             | FR1         | I expect there to be a high risk that the monetary return from investing (in X) would fall below my expectations |
|                            | FR2         | I expect there to be a high risk of losing money in investing (in X)   |
| Social risk                | SR1         | I expect there to be a high risk that other people would consider my investment (in X) as unprofitable           |
|                            | SR2         | I expect there to be a high risk that my friends and acquaintances would consider investing (in X) as foolish    |
| Source risk                | SO1         | I expect there to be a high risk that the company providing investment X behaves unethically.                    |
|                            | SO2         | I expect there to be a high risk of receiving  |

|                    |     |   |
|--------------------|-----|---|
|                    |     | unsound and biased advice from those who sell or recommend this investment                |
| Psychological risk | PR1 | I expect to feel psychologically uncomfortable if I invest (in X)                         |
|                    | PR2 | I expect investing (in X) to be frustrating   |
|                    | PR3 | I expect to experience unnecessary tension or have feelings of anxiety if I invest (in X) |

### ***Compatibility***

The scale is adapted from Moore & Benbasat (1991), consisting of four items. Their scales have been widely accepted and used within the innovation diffusion research, and shown good internal consistencies in later studies. The statements were slightly modified so that they would better suit the purpose of this research. In the research of Moore and Benbasat (1991), the coefficient alpha was .84, indicating good internal consistency. Seven-point likert-scale was used.

| <b>LATENT VARIABLE</b> | <b>ITEM</b> | <b>STATEMENT</b>   |
|------------------------|-------------|--|
|                        | CO1         | Investing in X is completely compatible with my current situation (e.g. liquidity) |
| Compatibility          | CO2         | I think that investing in X fits well with my way of living                        |
|                        | CO3         | Investing in X fits into my lifestyle  |
|                        | CO4         | Investing in X is compatible with all aspects of my life                           |

### ***Perceived behavioral control***

PBC is measured by using three items, which ask the subjects to rate how easy they think it would be for them to find the financial resources to invest in a given investment alternative. The measure is adopted from the research of Sahni (1995), who, however, used the measurement scale in a consumption context. The statements deal with the respondents perceptions of his or her financial resources and the scale used is a seven-point Likert-scale. In the research of Sahni (1995) the standardized alpha for the financial resource items was .92.

| LATENT VARIABLE              | ITEM | STATEMENT  |
|------------------------------|------|--|
|                              | BCF1 | If I want to, I can easily afford to invest (in X)                               |
| Perceived behavioral control | BCF2 | Taking into consideration my current wealth, investing (in X) would be difficult |
|                              | BCF3 | My personal income permits me to easily invest (in X)                            |

### ***Subjective investment knowledge***

Subjective knowledge is measured by using three items which ask the subjects to rate how much they feel they know about investing in general, compared to friends and acquaintances, and compared to experts. The measure is consistent with past research of Park et al. (1994). In the research of Park et al. (1994) standardized alpha was .91 and total correlations ranged from .82 to .83. To stay consistent with the research of Park et al. (1994) a nine-point Likert-like scale was used, ranging from “very little” to “very much”.

| LATENT VARIABLE      | ITEM  | STATEMENT  |
|----------------------|-------|--|
|                      | SIK 1 | How much do you know about investment alternatives?  |
| Subjective knowledge | SIK 2 | Compared to your friends and acquaintances, how much do you feel you know about investing? |
|                      | SIK 3 | Compared to expert investors, how much do you feel you know about investing?               |

### ***Investment intention***

The three items operationalizing the investment intention measure are consistent with the research of Davis et al. (1989). These four items represent the consumer’s perception of the likelihood that he or she will invest in the chosen investment alternative within the subsequent year. The scale is seven-point likert-scale, ranging from “not true at all/very unlikely” to “totally true/very likely”, thus high values represent high

intention. In the research of Davis et al. (1989) the standardized alpha was .83.

| LATENT VARIABLE      | ITEM | STATEMENT  |
|----------------------|------|--|
|                      | II1  | I plan to invest (in X) within the next year         |
| Investment intention | II2  | I intend to invest (in X) within the next year       |
|                      | II3  | I predict I would invest (in X) within the next year |

### 3.3 Additional and background questions

In order to get more information about the respondents, demographic questions inquired about respondent's (1) sex, (2) age, (3) education level, (4) occupation, (5) socio-economic status, (6) monthly gross income, (7) prior investment experience. These demographic variables are consistent with the research of Puustinen et al. (2013). Moreover, the consumers were also asked about their prior investment experience by inquiring whether they had previously invested in stocks or investment funds or if they currently owned any securities or other investment products.

### 3.4 Questionnaire pretesting

After the questionnaire was constructed, it was pretested with a reference group that was selected to match the true sample. Pretesting is the final stage of the questionnaire development process and its aim is to ascertain how well the questionnaire works (Hunt et al 1982). Consequently, the importance of pretesting is widely acknowledged in the marketing literature (Reynolds and Diamantopoulos 1998).

The purpose of the pretest is mainly to check the comprehensibility and layout of the questionnaire (Karjaluo 2002), i.e. to ensure that the language and the structure of the questionnaire are appropriate, and that the meanings of the questions are the same to the respondents as they

are to the researcher (Reynolds and Diamantopoulos 1998). Thus, in order to uncover problems in answering the questions prior to sending the actual survey, the questionnaire was pretested with 10 individuals who were allowed to freely comment on the questions, the format and flow of the survey. It is pointed out in the literature, that the pilot respondents should always match the target respondents as much as possible (e.g. Hunt et al. 1982; Saunders et al. 2007, 386). Thus, all the pilot test respondents were 45- to 65-year-old Finns.

After filling out the questionnaire, many of the pretesters pointed out that answering to almost similar questions three or four times was frustrating. However, as discussed in chapter 3.2, this was necessary in order to ensure the reliability of the measurement. Moreover, few mentioned that they did not really know anything about investing and also considered the subject uninteresting. Some of the pilot testers also commented on the length of the survey, and consequently it was acknowledged that the pilot test answering time that was approximately 14 minutes, is quite long for an online survey, and thus might lower the final response rate (see e.g. Deutskens et al. 2004). On the contrary, several studies have shown that survey length does not have an effect on response rate (e.g. Linsky 1975; Yu & Cooper 1983). Thus, as all items were all considered to be significant for the research and testing of hypotheses, no questions were removed from the survey after the pilot testing. However, based on the pilot respondents' comments, two of the statements were reconsidered and their wording slightly rearranged.

### **3.5 Data collection procedure**

The online survey invitation was sent to 2400 45-65-year-old Finnish consumers by email. Online distribution was selected as it allows faster and more convenient collection and analysis of the data and costs less (Ilieva et al. 2002). The email was sent by Fonecta, a Finnish information

service provider possessing the largest contact information database in the country (Fonecta 2013). The sample was drawn randomly from Fonecta's database by using age as a limiting factor. All respondent information was confirmed by using the Finnish Population Information System, which is a computerized national register containing basic information about citizens permanently living in Finland (Population Register Centre 2013a). The Finnish population data is viewed internationally as being of a high standard, and it is used for instance for governmental, taxation and research purposes (ibid). It is the most used national base register in the country. The system is controlled by the Population Register Centre (PCR), which purpose is to enable the usage of the data as well as to ensure good data processing and data management practices (Population Register Centre 2013b).

The survey invitation was sent on the 7<sup>th</sup> of November 2013 and the response time was two weeks (until the 22<sup>nd</sup> of November). In total 2400 emails were sent out. Of those emails, 250 bounced back undelivered, making the number of delivered emails 2150. During the two week period, 244 individuals responded to the questionnaire (11.3%), however, only 154 of the questionnaires were fully completed, yielding the final response rate of 7.2%. The response rate was low and below expected. The low response rate might be due to the survey mode, as earlier research has shown that web surveys have lower response rates than other modes (e.g. Ilieva et al. 2002; Manfreda et al. 2008). Also, one reason for the non-response bias might be the topic of the survey, which the pilot testers commented to be uninteresting. According to Saunders et al. (2007, 388), it has a very high impact on the response rate whether the respondents find the survey interesting or not. Furthermore, it was acknowledged that sending one or two reminder emails would have had a major effect on the response rate (e.g. Deutskens et al. 2004; Saunders et al 2007, 388); however, due to the budget constraint it was impossible to send one. Yet, in order to encourage more people to participate in the research and to complete the survey once started, the respondents were offered a chance



to participate in a prize draw to win a gift certificate worth € 200 to Stockmann department store. Monetary incentives, such as lotteries and vouchers, have been found to have a significant effect on the response rate (e.g. Yu & Cooper 1983; Deutskens et al. 2004; Saunders et al. 2007, 388)

The survey invitation (i.e. covering email) explained the purpose of the study and included a link to the survey. Moreover, it highlighted that the responses will be treated confidentially; respondents cannot be recognized from the information that they provide, and that the contact information given for the prize draw cannot be connected with the survey responses. It was also clarified how the sample was chosen, how the respondents' emails were obtained and why it would be important that the recipient would respond. The survey invitation also included an estimated time to fill out the questionnaire and the last date to respond. The possibility to take part in the prize draw was also pointed out in order to motivate the recipients to respond. Finally, contact information was provided in case the recipients would have questions concerning the questionnaire or the research.

During the response period three emails were received from the recipients. Two of the emails were written in Swedish, which is the second official language in Finland. These emails stated that the questions were difficult to understand and with no prior investment experience difficult to evaluate. In the response email, the survey instructions and more details about the study were given in Swedish in order to ease responding. Thus, it was realized that sending the questionnaire in both Finnish and Swedish, so that the respondent could have had an opportunity to respond in his or her mother language, could have had a positive impact on the response rate. The third email requested more details about the price draw.

## **4 EMPIRICAL ANALYSIS AND FINDINGS**

This chapter will discuss the empirical analysis and findings of the research. At first, the target population of the research is introduced, after which a descriptive analysis of the sample respondents is presented. Subsequently, the results of the first order confirmatory factor analyses (i.e. measurement models) will be discussed. First order CFA's are conducted in three steps, thus three measurement models are assessed, one for expected investment value, one for expected sacrifices, and one for the remaining research variables. Moreover, as the research consists of two theoretical models, one for stock investments and one for investment funds, each measurement model is assessed twice. Thereafter the measurement models' reliability and validity will be discussed. After the assessment of the first order CFA's, second order CFA's are conducted for expected investment value and expected sacrifice, as they are theorized to be higher order latent variables. Again, the second order CFA's are assessed for both research models, that is, stocks and funds. As a final point, the structural models are assessed in order to verify and falsify the research hypotheses.

### **4.1 Introduction of the target population**

The target population of the research is 45- to 65-year-old Finnish consumers. This specific age group is chosen as it is considered to have the best possibilities to increase its current amount of investments in stocks and funds due to its highest net worth (wealth) and highest amount of deposited capital per person (see appendix 2). Wealth generally increases until retirement age and decreases thereafter (Statistics Finland 2012a). Since 1994, the net worth has been the highest among 55- to 64-year-old Finns and has risen most intensely among the middle aged and older (ibid). Moreover, the average age to receive inheritance is 50 (ibid). Altogether the target group consists of 1,5 million people (Statistics

Finland 2012b), and the average net worth per household belonging to this group is nearly 212 000 euros (Statistics Finland 2012a).

When it comes to the whole population, approximately 700 000 Finns have invested in investment funds (Suomen Sijoitustutkimus 2014), which is around 13% of the whole population, whereas about 15% Finns own stocks (Ministry of Finance 2012). According to the latest consumer savings research by Finnish Foundation for Share Promotion, 54% of Finns owned any type of securities in 2011 (Pörssisäätiö 2011). However, within the target population the ownership is above these figures. According to Norvestia Sijoitusbarometri (2012), 26% of over 55-year-olds had invested directly in stocks, which was 6% higher than direct stock investments among 36-55-year-olds and 14% higher than among 25-35-year-olds. Also, the degree of fund investments was 5% higher than among 36-55-year-olds and 4% higher than among 25-35-year-olds. Moreover, the euro amount invested increased by age (ibid). Accordingly, the chosen age group has the greatest effect on the domestic capital markets, but is also the most significant customer segment for financial institutions providing investment services.

As previously discussed, the survey was distributed via email to 2400 consumers belonging to the target population. The sample was drawn from a Finnish information service provider's (Fonecta) database by utilizing the Finnish Population Information system in the verification of the respondent information.

## **4.2 Descriptive analysis**

This chapter describes the profile of the sample respondents. The characteristics of the respondents are summarized in table 2 and table 3. As already stated, 244 individuals responded to the survey, however only 154 of them completed the questionnaire fully, making the final sample

size  $n=154$ , because in this thesis a listwise deletion (a complete case approach, see Hair et al. 2010, 659) was used for solving the missing data problem. Listwise deletion is a method in which respondents are eliminated if they are missing data on any variable. It is generally considered the most appropriate method for SEM (ibid.).

A slight majority of the respondents were male (52.6%), as displayed in table 2. The demographic age profile shows that none of the respondents were under age 45, the largest age group was 60-64-year-olds (33.8%) and the second largest was 55-59-year-olds (25.3%). Even though the questionnaire was intended only for individuals aged between 45 and 65, 13 respondents reported their age as 65, and four as over 65. However, due to the low response rate and rather small sample size, these respondents were not removed from the data. As for education, 35.1% had a bachelor's degree or equivalent, 33.1% had completed secondary education (such as high school or vocational school), 24.0% had a master's degree, 5.8% had primary school diploma and 1.9% had a doctoral degree.

**Table 2.** Respondent gender, age and education

| Characteristics | Number<br>( $n=154$ ) | Percentage (%) |
|-----------------|-----------------------|----------------|
| <b>Gender</b>   |                       |                |
| Female          | 73                    | 47.4           |
| Male            | 81                    | 52.6           |
| <b>Age</b>      |                       |                |
| under 45        | 0                     | 0              |
| 45-49           | 21                    | 13.6           |
| 50-54           | 25                    | 16.2           |
| 55-59           | 39                    | 25.3           |
| 60-64           | 52                    | 33.8           |
| 65 and over     | 17                    | 11.0           |

| <b>Education</b>    |    |      |
|---------------------|----|------|
| Primary school      | 9  | 5.8  |
| Secondary education | 51 | 33.1 |
| Bachelor's degree   | 54 | 35.1 |
| Master's degree     | 37 | 24.0 |
| Doctoral degree     | 3  | 1.9  |

Table 3 displays the socio-economic status, gross monthly income and occupation of the respondents. The largest proportion of the respondents was pensioners (33.8%), whereas 17.5% reported their occupation as “other” and 16.9% as manual workers. Only 1.3% were students, which is quite expected as all respondents are over the age of 45. The percentage of unemployed respondents was 6.5%.

The income distribution of the respondents varied widely. The largest group was those with gross monthly income of 2001-2500 euros (17.5%), followed by those with gross monthly income of 2501-3000 euros (16.2%), and those with 3501-4000 euros (13.0%). Only 3.2% of the respondents had a gross monthly income of 500 euros or less, whereas 6.5% had reported their monthly income as over 6500 euros. As for the occupation, most of the respondents reported their status as “other” (27.9%). The second largest group was associate professionals (18.8%), and the third largest was managers (14.9%). The smallest occupational group was plant/ machine operator or assemblers (3.2%).

**Table 3.** Socio-economic status, gross monthly income and profession

| <b>Characteristics</b>                  | <b>Number<br/>(n=154)</b> | <b>Percentage (%)</b> |
|---|---------------------------|-----------------------|
| <b>Socio-economic status</b>            |                           |                       |
| Upper-level employee                    | 19                        | 12.3                  |
| Lower-level employee                    | 18                        | 11.7                  |
| Manual worker                           | 26                        | 16.9                  |
| Student                                 | 2                         | 1.3                   |
| Pensioner                               | 52                        | 33.8                  |
| Unemployed                              | 10                        | 6.5                   |
| Other                                   | 27                        | 17.5                  |
| <b>Gross monthly income</b>             |                           |                       |
| 500 or less                             | 5                         | 3.2                   |
| 1001-1500                               | 10                        | 6.5                   |
| 1501-2000                               | 19                        | 12.3                  |
| 2001-2500                               | 27                        | 17.5                  |
| 2501-3000                               | 25                        | 16.2                  |
| 3001-3500                               | 14                        | 9.1                   |
| 3501-4000                               | 20                        | 13.0                  |
| 4001-4500                               | 9                         | 5.8                   |
| 4501-5000                               | 5                         | 3.2                   |
| 5001-5500                               | 6                         | 3.9                   |
| 5501-6000                               | 1                         | 0.6                   |
| 6001-6500                               | 3                         | 1.9                   |
| over 6500                               | 10                        | 6.5                   |
| <b>Occupation</b>                       |                           |                       |
| Manager                                 | 23                        | 14.9                  |
| Professional                            | 16                        | 10.3                  |
| Associate professional                  | 29                        | 18.8                  |
| Clerical support worker                 | 12                        | 7.8                   |
| Service/ sales worker                   | 10                        | 6.5                   |
| Agricultural / forestry<br>worker       | 6                         | 3.9                   |
| Craft/ related trades<br>worker         | 10                        | 6.5                   |
| Plant/ machine operator<br>or assembler | 5                         | 3.2                   |
| Other                                   | 43                        | 27.9                  |

The respondents were also asked whether they currently owned or had previously invested in securities or investment products, such as stocks or funds. The results are presented in table 4. Three quarters of the respondents had prior investment experience (74.7%), whereas one quarter had never owned any securities or investment products (25.3%). Table 29 in appendix 3 presents all demographic information for investors and non-investors.

**Table 4.** Investment experience

| <b>Characteristics</b>  | Number<br>(n=154) | Percentage (%) |
|---|-------------------|----------------|
| <b>Investment experience</b>  |                   |                |
| Yes, I have invested or currently own investment products or securities (such as stocks, funds, or bonds) | 115               | 74.7           |
| I have never owned any investment products or securities.   | 39                | 25.3           |

Additional descriptive information can be found in appendix 4, which presents the descriptive analysis for all research items. Table 30 (appendix 4) displays the mean, standard deviation, skewness and kurtosis for the stocks-model items whereas table 31 displays similar statistics for the funds-model. As one can notice, not all items were normally distributed. However, due to the nature of the data (Likert-scales), no corrections were made. After all, non-normality is quite usual within consumer research due to the nature of the measurement scales. Furthermore, surprisingly few studies in marketing research even recognize the normal theory assumptions or report if the assumptions have been violated (Andreassen et al. 2006). However, two of the three items, which were highly skewed (FSES2, FSES3) were deleted in the subsequent analyses.

### **4.3 The measurement models assessment**

This chapter will discuss measurement models that were assessed by using LISREL 8.80. Moreover, the indices assessing the goodness-of-fit of the research models will be discussed, after which the validity and reliability of the measures are determined.

As previously discussed, this thesis uses the two-step SEM approach (Anderson & Gerbing 1988), where first the measurement model is assessed after which the structural model is evaluated. The measurement model tests the relationships between the latent variables and manifest variables, and thus allows one to estimate the validity of measurement (ibid). Confirmatory factor analysis was used as there was existent theoretical knowledge of the underlying latent variable structure. Maximum likelihood estimation (MLE) was used as the estimation procedure as it is the most used estimation method in consumer behavior research. The validity of the measurement model depends on the goodness-of-fit of the measurement model and constructs' validity (Hair et al. 2010, 664). In this chapter, the indices assessing the goodness-of-fit of the measurement models will be discussed.

The purpose of the fit indices is to estimate the acceptability of the SEM model. However, there is no agreement on which indices should be used and what constitutes a satisfactory or good fit (Hair et al. 2010, 669). Thus, researchers might be tempted to pick indices and cutoff values that best support their research models. In this thesis several fit measures are used in order to evaluate the models' fit as objectively as possible. The Chi-Square ( $\chi^2$ ) is considered as the most clear and convincing evidence of the model's overall fit (ibid, 670) as it provides a formal significance test of the covariance structure hypothesis (Diamantopoulos & Siguaw 2000, 83). However, it is sensitive to sample size, departures from multivariate



normality (such as kurtosis), and makes the assumption that the model fits the population perfectly (Jöreskog & Sörbom 1996, 28-29; Diamantopoulos & Siguaw 2000, 84). Moreover, Jöreskog & Sörbom (1996, 86) point out that a strict use of  $\chi^2$  as a test statistic is not valid in most empirical works as the models are regarded only as approximations of reality. Karjaluoto and Juntunen (2007) also emphasize that when the amount of observations approaches 200, it is more likely that the p-value gets closer to 0.00. Therefore, a number of complementary indices, which are presented in table five, are used in this thesis to assess the models' fit.

**Table 5.** Goodness-of-fit criteria (adapted from Jöreskog & Sörbom 1996; Yli-renko et al. 2001; Diamantopoulos & Siguaw 2000; Karjaluoto & Juntunen 2007; Hair et al. 2010)

| Goodness-of-fit Indices                         | Description   | Interpretation  |
|---|---|---|
| Chi-Square ( $\chi^2$ )                         | Calculation of difference between observed and estimated covariance matrices (not adjusted for degrees of freedom). Traditional measure for evaluating overall model fit. | Large $\chi^2$ refers to bad fit<br>Small $\chi^2$ refers to good fit<br><br>$p > .05$ ( $\chi^2$ should not be significant). |
| Degrees of freedom                              |   | $\chi^2/df$ ratio of < 2.0 indicate good fit, 2-5 satisfactory fit  |
| Comparative fit index (CFI)                     | An incremental fit index that is improved version of the normed fit index.  | Ranges from 0 (no fit) to 1.0 (perfect fit); recommendation > 0.90  |
| Goodness-of-fit index (GFI)                     | Indicator of the relevant amount of variances and covariances accounted for by the model.   | Ranges from 0 (no fit) to 1.0 (perfect fit); recommendation > 0.90  |
| Non-normed fit index (NNFI)                     | Indicator of the difference between the chi-squared value of the hypothesized model and the null model.   | Ranges from 0 (no fit) to 1.0 (perfect fit); recommendation > 0.90  |
| Root mean square error of approximation (RMSEA) | Shows how well the model would fit the population covariance matrix, with unknown but optimally chosen parameter values.  | Values <0.05 indicate good fit, 0.05-0.08 reasonable fit, 0.08-0.10 mediocre fit, >0.10 poor fit                              |

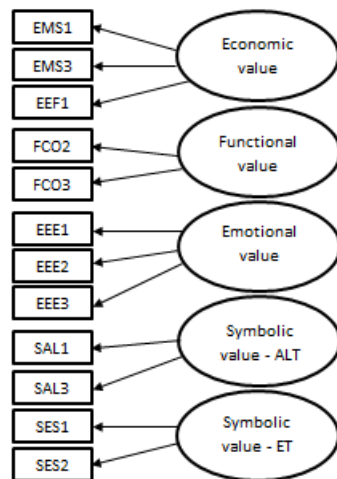
Due to the small sample size compared to the amount of variables (complexity of the model) confirmatory factor analyses were done in three parts. At first, the validity of the measurement model of expected investment value was assessed, after which the measurement model of expected investment sacrifices was tested. The third measurement model assessed the relationships between all the other latent variables and their manifest variables. After the first order confirmatory factor analyses, the second order confirmatory factor analyses were executed for expected investment value and for expected investment sacrifices. All analyses are conducted twice as there are two research models in this thesis, one for stocks and one for investment funds. Testing the measurement models twice, verifies that the measures of the research are reliable and valid also for other investment products, and not only by chance. Moreover testing the structural model twice demonstrates that the theory can explain consumer investment intentions on more than one alternative.

#### **4.3.1 Assessing the measurement models' fit for stocks**

The analyses began with the research model for stock investments. As already stated, due to the small sample size compared to the amount of manifest variables, the first order confirmatory factor analyses were executed in three parts. The first measurement model assessed the fit of the dimensions of expected investment value, after which a measurement model for expected sacrifices was assessed, and finally a confirmatory factor analysis with the remaining research variables was conducted. The variables were first changed from ordinal to continuous after which the covariance matrix from the sample was used as the input of the CFA.

According to the theory, expected investment value consists of six dimensions. However, as the initial model's fit was unacceptable, an examination of the modification indices and standardized residuals was

conducted. Based on the examination, manifest variables were eliminated one by one until the model fit was on a good level. As a consequence of the process EMS2, EEF2, EEF3, FCO1, SAL1 and SES3 were removed from the measurement model. Thus the outcomes of the CFA suggest that there are five dimensions of expected investment value among ordinary consumers instead of the six suggested by Puustinen (2012, 98-99). These results are thus more consistent with the initial proposed PIV-model of Puustinen (2012, 90).



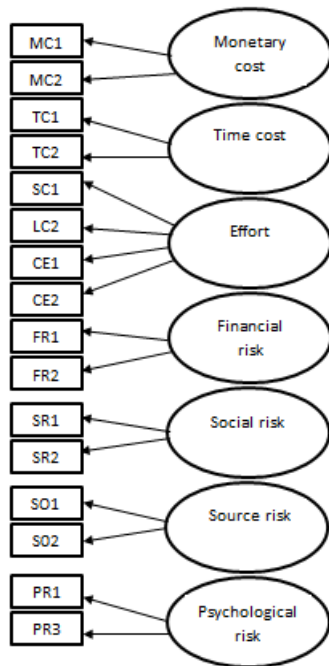
**Figure 3.** Measurement model of expected investment value

The measurement model for expected investment value (stocks) fits the data well as all fit indices, except the p-value, which is  $<0.05$ , are within the desirable range (table 6):  $\chi^2 = 65.149$  with 44 degrees of freedom,  $p=0.0208$ ,  $RMSEA=0.0560$ ,  $NNFI=0.984$ ,  $CFI=0.989$ , and  $GFI= 0.934$ . However, as previously stated, p-value should not be used too strictly because theoretical models are only approximations of reality (Jöreskog & Sörbom 1996). Consequently, as all other indices demonstrate good fit and all loadings are above 0.6 and t-values are above 1.64 (see table 6) indicating that the loadings of the manifest variables good and significant, it can be concluded that the first measurement model is valid.

**Table 6.** CFA results of expected investment value (stocks-model)

| Latent variable              | Item  | Loading | T-value | Error variance |
|------------------------------|-------|---------|---------|----------------|
| Economic value               | SEMS1 | 0.87    | 6.172   | 0.242          |
|                              | SEMS2 | 0.869   | 6.200   | 0.244          |
|                              | SEEF3 | 0.867   | 6.247   | 0.248          |
| Functional value             | SFCO1 | 0.904   | 4.166   | 0.183          |
|                              | SFCO3 | 0.85    | 5.952   | 0.278          |
| Emotional value              | SEEE1 | 0.839   | 7.145   | 0.297          |
|                              | SEEE2 | 0.926   | 4.555   | 0.143          |
|                              | SEEE3 | 0.904   | 5.491   | 0.183          |
| Symbolic value -<br>Altruism | SSAL1 | 0.938   | 2.820   | 0.12           |
|                              | SSAL3 | 0.909   | 4.059   | 0.173          |
| Symbolic value -<br>Esteem   | SSES1 | 0.931   | 1.896   | 0.134          |
|                              | SSES2 | 0.676   | 7.551   | 0.543          |

The second CFA tested the relationships between the latent dimensions of expected sacrifices and their manifest variables. The initial theory suggested that learning, search and cognitive effort would be separate concepts; however, the EFA and CFA suggested instead that they measure the same thing, and thus should be considered as one construct. The new factor was renamed as “effort”. Based on the modification indices and standardized residuals, manifest variables were eliminated one by one until the model fit was good. The final model excluded SC2, LC1, and PR2.



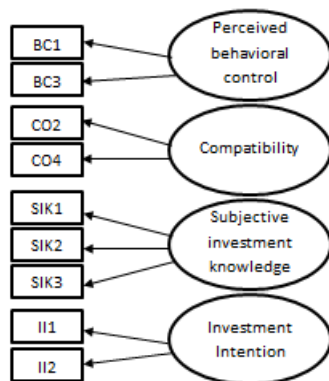
**Figure 4.** Measurement model of expected sacrifices

The measurement model of expected sacrifices for stock investments fits the data well.  $\chi^2 = 155.339$  with 84 degrees of freedom,  $p=0.000$ ,  $RMSEA=0.0745$ ,  $NNFI=0.973$ ,  $CFI=0.981$ , and  $GFI= 0.887$ . GFI is slightly below the recommended level and p-value is below 0.05, which suggests that the model does not completely fit the data. However, all other indices are within the desired range. Also, all loadings are high and t-values are above 1.64 (see table 7). Based on these results, it can be concluded that the fit of the second measurement model is satisfactory.

**Table 7.** CFA results of expected sacrifices (stocks-model)

| Latent variable    | Item | Loading | T-value | Error variance |
|--------------------|------|---------|---------|----------------|
| Money              | SMC1 | 0.818   | 5.017   | 0.331          |
|                    | SMC2 | 0.834   | 4.605   | 0.304          |
| Time               | STC1 | 0.895   | 3.676   | 0.199          |
|                    | STC2 | 0.851   | 5.061   | 0.276          |
| Effort             | SSC1 | 0.869   | 7.017   | 0.245          |
|                    | SLC2 | 0.845   | 7.365   | 0.286          |
|                    | SCE1 | 0.936   | 4.848   | 0.123          |
|                    | SCE2 | 0.825   | 7.580   | 0.320          |
| Financial risk     | SFR1 | 0.856   | 6.700   | 0.267          |
|                    | SFR2 | 0.941   | -       | 0.115          |
| Social risk        | SSR1 | 0.951   | 2.222   | 0.095          |
|                    | SSR2 | 0.894   | 4.659   | 0.201          |
| Source risk        | SSO1 | 0.831   | 5.350   | 0.309          |
|                    | SSO2 | 0.910   | 2.973   | 0.173          |
| Psychological risk | SPR1 | 0.889   | 4.252   | 0.210          |
|                    | SPR3 | 0.932   | 2.651   | 0.132          |

The third CFA was conducted for the remaining research variables, namely perceived behavioral control, compatibility, subjective investment knowledge, and investment intention. Again, inspection of the modification indices and standardized residuals revealed which manifest variables did not work well in the model and thus were eliminated one by one until the model fit was good. The eliminated variables were BC2, CO1, CO3, and II3.

**Figure 5.** Measurement model of remaining research variables

The third measurement model's fit indices are the following:  $\chi^2 = 52.903$  with 25 degrees of freedom,  $p = 0.00092$ , RMSEA= 0.0854, NNFI= 0.959, CFI= 0.971, and GFI= 0.920. Two fit indices are not within the desired range; the p-value is below 0.05 and RMSEA is slightly above 0.08,

indicating only mediocre fit. All of the t-values are above 1.64 and loadings above 0.6 (see table 8). Yet, as one can notice from the table, four of the t-values are missing as the error variances of the items were set to 0.02. Many researchers argue against this practice as it indicates that there is a problem with the model's fit. Therefore this procedure cannot be neglected when considering the reliability of the results. However after the procedure NNFI, CFI, and GFI indicate good fit, and as already stated, RMSEA indicates mediocre fit, we will accept the model.

**Table 8.** CFA results of the remaining variables (stocks-model)

| Latent variable                 | Item  | Loading | T-value | Error variance |
|---------------------------------|-------|---------|---------|----------------|
| Subjective Investment Knowledge | SSIK1 | 0.978   | -       | 0.044          |
|                                 | SSIK2 | 0.867   | 7.739   | 0.249          |
|                                 | SSIK3 | 0.758   | 8.297   | 0.426          |
| Compatibility                   | SCO2  | 0.905   | 7.093   | 0.181          |
|                                 | SCO4  | 0.973   | -       | 0.054          |
| Behavioral Control              | SBC1  | 0.858   | 4.156   | 0.263          |
|                                 | SBC3  | 0.871   | 3.794   | 0.242          |
| Investment Intention            | SI1   | 0.980   | -       | 0.040          |
|                                 | SI2   | 0.980   | -       | 0.039          |

#### 4.3.2 Assessing the measurement models' fit for funds

The measurement model for expected investment value (funds) is consistent with the measurement model of expected investment value (stocks). The model does not fit the data as well as the measurement model for stocks since the  $p < 0.05$ ,  $RMSEA > 0.08$  and GFI slightly less than 0.9. Especially the low p-value 0.00 indicates that there might be problems with the model's fit. However, as previously discussed also other fit indices should be considered when assessing the model. Therefore, since  $RMSEA < 0.10$  (mediocre fit) and all the other fit indices indicate good fit, the model fit is considered moderate and is thus accepted. The goodness of fit statistics are the following:  $\chi^2 = 108.015$  with 46 degrees of freedom,  $p = 0.000$ ,  $RMSEA = 0.0939$ ,  $NNFI = 0.949$ ,  $CFI = 0.964$ ,  $GFI = 0.895$ . Moreover, all t-values are above 1.64 and loadings above 0.6 (see table 9).

**Table 9.** CFA results of expected investment value (funds-model)

| Latent variable            | Item  | Loading | T-value | Error variance |
|----------------------------|-------|---------|---------|----------------|
| Economic value             | FEMS1 | 0.932   | 3.832   | 0.132          |
|                            | FEMS3 | 0.849   | 6.628   | 0.279          |
|                            | FEEF1 | 0.809   | 7.265   | 0.345          |
| Functional value           | FFCO2 | 0.970   | -       | 0.059          |
|                            | FFCO3 | 0.726   | 8.204   | 0.473          |
| Emotional value            | FEEE1 | 0.947   | 4.645   | 0.103          |
|                            | FEEE2 | 0.896   | 6.924   | 0.197          |
|                            | FEEE3 | 0.940   | 5.068   | 0.116          |
| Symbolic value<br>Altruism | FSAL1 | 0.902   | 3.468   | 0.187          |
|                            | FSAL3 | 0.926   | 2.590   | 0.142          |
| Symbolic value<br>Esteem   | FSES1 | 0.953   | -       | 0.091          |
|                            | FSES2 | 0.612   | 8.290   | 0.625          |

The second measurement model, that is, the model for expected sacrifices for funds includes the same manifest variables as the second measurement model for stock investments. The fit indices are:  $\chi^2=139.643$  with 84 degrees of freedom,  $p = 0.000132$ , RMSEA = 0.0658, NNFI = 0.979, CFI = 0.986, GFI = 0.898. Examination of the fit indices shows that all the other indices are on a good level except the p-value and GFI that is slightly below 0.9. Again, all t-values are above 1.64 and loadings above 0.6 (see table 10).

**Table 10.** CFA results of expected sacrifices (funds-model)

| Latent variable    | Item | Loading | T-value | Error variance |
|--------------------|------|---------|---------|----------------|
| Money              | FMC1 | 0.891   | 3.227   | 0.206          |
|                    | FMC2 | 0.878   | 3.620   | 0.229          |
| Time               | FTC2 | 0.916   | 3.181   | 0.160          |
|                    | FTC2 | 0.838   | 5.728   | 0.298          |
| Effort             | FSC1 | 0.869   | 7.211   | 0.245          |
|                    | FLC2 | 0.844   | 7.534   | 0.288          |
|                    | FCE1 | 0.947   | 4.505   | 0.102          |
|                    | FCE2 | 0.871   | 7.172   | 0.241          |
| Financial risk     | FFR1 | 0.901   | 4.355   | 0.187          |
|                    | FFR2 | 0.943   | 2.592   | 0.111          |
| Social risk        | FSR1 | 0.968   | -       | 0.063          |
|                    | FSR2 | 0.931   | 6.156   | 0.133          |
| Source risk        | FSO1 | 0.809   | 6.192   | 0.346          |
|                    | FSO2 | 0.911   | 3.149   | 0.169          |
| Psychological risk | FPR1 | 0.887   | 4.855   | 0.213          |
|                    | FPR3 | 0.924   | 3.416   | 0.147          |

The third measurement model for funds that aimed to assess the goodness of fit for the remaining research variables, namely, perceived



behavioral control, compatibility, subjective investment knowledge, and investment intention, included the same manifest variables as the similar model for stock investments (see table 11). The fit indices were the following;  $\chi^2 = 18.791$  with 23 degrees of freedom,  $p = 0.713$ , RMSEA = 0.0, NNFI = 1.003, CFI = 1.000, GFI = 0.973. All fit indices indicate great fit. However, one needs to notice that the RMSEA and CFI indicate only that  $\chi^2 < df$ , not necessarily that the model would have a perfect fit (Kline 2011, 206-208).

**Table 11.** CFA results of the remaining variables (funds-model)

| Latent variable                 | Item  | Loading | T-value | Error variance |
|---------------------------------|-------|---------|---------|----------------|
| Subjective Investment Knowledge | FSIK1 | 0.934   | 3.362   | 0.127          |
|                                 | FSIK2 | 0.910   | 4.440   | 0.172          |
|                                 | FSIK3 | 0.744   | 7.883   | 0.446          |
| Compatibility                   | FCO2  | 0.912   | 4.758   | 0.168          |
|                                 | FCO4  | 0.961   | 2.239   | 0.076          |
| Behavioral Control              | FBCF1 | 0.897   | 7.510   | 0.196          |
|                                 | FBCF3 | 0.980   | -       | 0.040          |
| Investment Intention            | FSII1 | 0.982   | 4.224   | 0.035          |
|                                 | FSII2 | 0.980   | -       | 0.040          |

#### 4.4 Reliability and validity

Reliability refers to measures' consistency whereas validity reveals the degree to which an indicator measures what it should measure (Diamantopoulos & Sigauw 2000). Consequently, assessing the reliability and validity is crucial because if the quality of the measures is bad, the assessment of the relationships between the latent variables becomes problematic and provides unreliable coefficients.

The reliability and discriminant validity of the measures is tested by computing a composite reliability (CR) and average variance extracted (AVE) measure for each latent variable. To be acceptable, CR should be above 0.60 (Diamantopoulos & Sigauw 2000). For discriminant validity, the recommendations of Fornell and Larcker (1981) are followed, and the cut-off value is  $>0.50$ . Next, the AVE of each latent variable is compared with the shared variance between the constructs, in order to assess the

discriminant validity of the constructs (ibid). If the AVE is greater than the shared variance, discriminant validity is supported. The formulas that were used for calculating the CR and AVE can be found in Diamantopoulos and Siguaw (2000, 90-91).

#### 4.4.1 Reliability and validity of the stocks-model measures

The reliability and validity of the measures is assessed in the same order as the confirmatory factor analyses were conducted, thus the analyses begin with the stocks model's measures. The first CFA involved the dimensions of expected investment value. The correlations, shared variances, AVE and CR values are presented in table 12. All AVE and CR values are above the cutoff-values, and all AVE values are higher than the shared variances. Consequently, the measures are reliable and valid.

**Table 12.** Reliability and discriminant validity: stocks – expected investment value

| <b>Latent variable</b> | Economic | Functional   | Emotional    | SymbALT      | SymbET       |
|------------------------|----------|--------------|--------------|--------------|--------------|
| Economic               | 1        | <i>0.686</i> | <i>0.240</i> | <i>0.238</i> | <i>0.258</i> |
| Functional             | 0.828    | 1            | <i>0.379</i> | <i>0.124</i> | <i>0.219</i> |
| Emotional              | 0.49     | 0.616        | 1            | <i>0.241</i> | <i>0.396</i> |
| SymbALT                | 0.488    | 0.352        | 0.491        | 1            | <i>0.572</i> |
| SymbET                 | 0.508    | 0.468        | 0.629        | 0.756        | 1            |
| <b>CR</b>              | 0.902    | 0.870        | 0.920        | 0.921        | 0.792        |
| <b>AVE</b>             | 0.755    | 0.770        | 0.792        | 0.853        | 0.662        |

Next, the reliability and validity of the sacrifice measures for stocks model is assessed. AVE and CR values are above the cutoff-values, and all AVE values are higher than the shared variances (see table 13), and thus the measures are reliable and valid.

**Table 13.** Reliability and discriminant validity: stocks – expected sacrifices

| <b>Latent variable</b> | Money | Time         | Effort       | Financial    | Social | Source | Psych |
|------------------------|-------|--------------|--------------|--------------|--------|--------|-------|
| Money                  | 1.000 | <i>0.513</i> | <i>0.308</i> | <i>0.249</i> | 0.289  | 0.222  | 0.206 |
| Time                   | 0.716 | 1.000        | <i>0.452</i> | <i>0.235</i> | 0.163  | 0.173  | 0.207 |
| Effort                 | 0.555 | 0.672        | 1.000        | <i>0.450</i> | 0.214  | 0.335  | 0.428 |
| Financial              | 0.499 | 0.485        | 0.671        | 1.000        | 0.412  | 0.336  | 0.343 |
| Social                 | 0.538 | 0.404        | 0.463        | <i>0.642</i> | 1.000  | 0.444  | 0.289 |
| Source                 | 0.471 | 0.416        | 0.579        | 0.580        | 0.666  | 1.000  | 0.339 |
| Psychol.               | 0.454 | 0.455        | 0.654        | 0.586        | 0.538  | 0.582  | 1.000 |
| <b>CR</b>              | 0.811 | 0.865        | 0.925        | 0.894        | 0.920  | 0.863  | 0.907 |
| <b>AVE</b>             | 0.682 | 0.763        | 0.756        | 0.809        | 0.852  | 0.759  | 0.829 |

The last CFA for the stocks model included the remaining research variables. Again, AVE and CR values are on a good level and all shared variances smaller than AVE values, and thus the measures are concluded to be reliable and valid (see table 14).

**Table 14.** Reliability and discriminant validity: stocks – remaining variables

| <b>Latent variable</b> | Subjective knowledge | Compatibility | Behavioral control | Investment intention |
|------------------------|----------------------|---------------|--------------------|----------------------|
| Subjective knowledge   | 1                    | <i>0.183</i>  | <i>0.192</i>       | <i>0.197</i>         |
| Compatibility          | 0.428                | 1             | <i>0.433</i>       | <i>0.607</i>         |
| Behavioral control     | 0.438                | 0.658         | 1                  | <i>0.377</i>         |
| Investment intention   | 0.444                | 0.779         | 0.614              | 1                    |
| <b>CR</b>              | 0.904                | 0.938         | 0.855              | 0.980                |
| <b>AVE</b>             | 0.760                | 0.883         | 0.747              | 0.960                |

#### 4.4.2 Reliability and validity of the funds-model measures

In order to be sure that the measures of the research are reliable and valid not only by chance, but also in other situations and for other investment products, similar reliability and discriminant validity assessments are done

for the funds model. The assessments are done in similar order, beginning with the expected investment value dimensions.

As we can see in table 15, all construct reliabilities are on a good level and all AVE values are above the threshold and higher than the shared variances. Thus, the measures are reliable and valid.

**Table 15.** Reliability and discriminant validity: funds – expected investment value

| <b>Latent variable</b> | Economic | Functional   | Emotional    | SymbALT      | SymbET       |
|------------------------|----------|--------------|--------------|--------------|--------------|
| Economic               | 1        | <i>0.497</i> | <i>0.312</i> | <i>0.147</i> | <i>0.178</i> |
| Functional             | 0.705    | 1            | <i>0.152</i> | <i>0.082</i> | <i>0.089</i> |
| Emotional              | 0.559    | 0.39         | 1            | <i>0.129</i> | <i>0.232</i> |
| SymbALT                | 0.384    | 0.287        | 0.359        | 1            | <i>0.448</i> |
| SymbET                 | 0.422    | 0.298        | 0.482        | 0.669        | 1            |
| <b>CR</b>              | 0.899    | 0.844        | 0.949        | 0.910        | 0.774        |
| <b>AVE</b>             | 0.748    | 0.734        | 0.861        | 0.836        | 0.642        |

Again, the measures of the expected sacrifices dimensions of the funds-model demonstrate good reliabilities and discriminant validities (see table 16). All shared variances are smaller than AVE values and CR values are high.

**Table 16.** Reliability and discriminant validity: funds – expected sacrifices

| <b>Latent variable</b> | Money | Time         | Effort       | Financial    | Social | Source | Psych |
|------------------------|-------|--------------|--------------|--------------|--------|--------|-------|
| Money                  | 1.000 | <i>0.346</i> | <i>0.182</i> | <i>0.296</i> | 0.116  | 0.191  | 0.186 |
| Time                   | 0.588 | 1.000        | <i>0.536</i> | <i>0.208</i> | 0.106  | 0.171  | 0.279 |
| Effort                 | 0.427 | 0.732        | 1.000        | <i>0.246</i> | 0.190  | 0.272  | 0.362 |
| Financial              | 0.544 | 0.456        | 0.496        | 1.000        | 0.275  | 0.453  | 0.428 |
| Social                 | 0.341 | 0.326        | 0.436        | <i>0.524</i> | 1.000  | 0.362  | 0.314 |
| Source                 | 0.437 | 0.413        | 0.522        | 0.673        | 0.602  | 1.000  | 0.533 |
| Psych                  | 0.431 | 0.528        | 0.602        | 0.654        | 0.560  | 0.730  | 1.000 |
| <b>CR</b>              | 0.878 | 0.870        | 0.934        | 0.919        | 0.948  | 0.852  | 0.901 |
| <b>AVE</b>             | 0.782 | 0.771        | 0.781        | 0.851        | 0.902  | 0.742  | 0.820 |

The last assessed measures were the remaining research variables for the funds-model. All CR and AVE values were above the threshold and all AVE values above the shared variances (see table 17). Hence, now that all measures of both models (stocks and funds) have been proven to be reliable and valid, we can continue to the next step of the analysis.

**Table 17.** Reliability and discriminant validity: funds – remaining variables

| <b>Latent variable</b> | Subjective knowledge | Compatibility | Behavioral control | Investment intention |
|------------------------|----------------------|---------------|--------------------|----------------------|
| Subjective knowledge   | 1                    | 0.161         | 0.261              | 0.148                |
| Compatibility          | 0.401                | 1             | 0.287              | 0.604                |
| Behavioral control     | 0.551                | 0.536         | 1                  | 0.299                |
| Investment intention   | 0.385                | 0.777         | 0.547              | 1                    |
| <b>CR</b>              | 0.900                | 0.935         | 0.937              | 0.981                |
| <b>AVE</b>             | 0.752                | 0.878         | 0.882              | 0.962                |

#### 4.5 Item parceling

After assessing the measurement models, the results were used for creating item parcels. Item parceling is a procedure where individual items are combined into sets of variables (i.e. parcels) by either averaging or summing the items (Bandalos & Finney 2001; Hair et al. 2009b). The created parcels are then used in further analysis instead of the individual items. There are several practical as well as theoretical reasons why item parcels are used in SEM analysis (Hall et al. 1999). Researchers have suggested that parcels might assist solving problems like unreliability, nonnormal item-level data and large sample size requirements (Bandalos & Finney 2001, 270). Parcels reduce the number of manifest indicators and thus help in keeping the ratio of indicators to latent constructs controllable (Hall et al. 1999). Especially when the sample size is small, parcels are argued to be beneficial as they decrease the number of free parameters (Bandalos & Finney 2001, 270). Moreover, as the variable to sample size ratio improves, more stable parameter estimates are obtained

(ibid). Furthermore, parceling reduces the complexity of the model by decreasing the number of variables, and thereby increases the chances of good model fit (Hair et al. 2009b).

However, the criticism of parceling cannot be neglected. Some consider aggregating items as a suspicious practice or even cheating (Little et al. 2002). The greatest dangers of parceling and threat to the validity are model misspecification and multidimensionality (ibid.). The researcher cannot be sure if the model is misspecified if parcels are created without an understanding of the factorial structure (ibid). This could lead to parceling items that would alone load on different factors. However, misspecification can be avoided by performing prior analysis where the factorial structure of items is discovered (ibid). Therefore in this thesis confirmatory factor analyses were made prior to forming parcels, and the parcels were created based on the results of the CFAs. The parcels were created by averaging the items that loaded on the same factors.

#### **4.6 Second order confirmatory factor analyses**

The next step in the process is second order confirmatory factor analyses for expected investment value and expected sacrifices constructs. The usage of higher-order measurement model is appropriate when the theory suggests that multiple conceptual layers exist and when the first order factors are assumed influence other research constructs in a similar way (i.e. positively/negatively) (Hair et al. 2010, 757). Based on the research of Puustinen (2012) and Puustinen et al. (2013), perceived investment value (PIV) has a higher-order, multidimensional structure. Since expected investment value-construct is similar to the PIV-construct, except that it only refers to pre-investment perceptions, a second order factor analysis was conducted. Whereas the first order CFA tests the relationship between the first order constructs and manifest variables, the second order CFA tests the relationship between the first order (latent) constructs and the second order constructs (Hair et al. 2010, 756). The item parcels

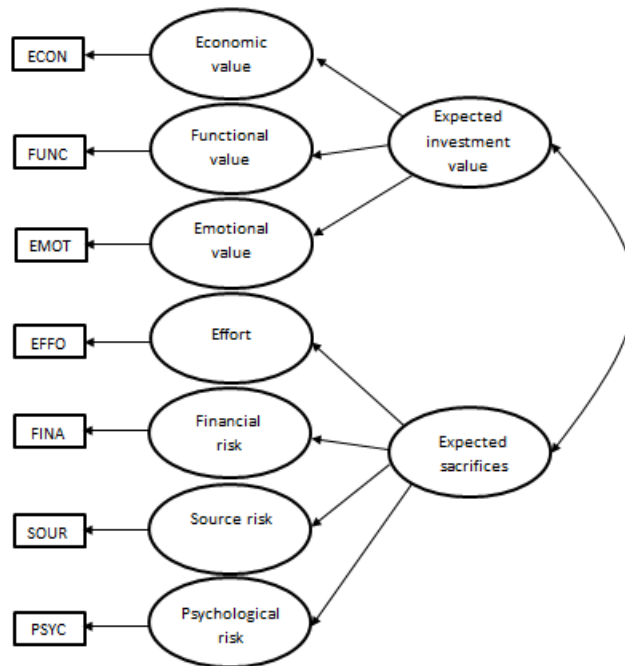
that were created based on the first order CFAs are used here as the indicators of the first order constructs.

Since it is suggested that the constructs that predict each other should be on the same general level of abstraction (Hair et al. 2010, 757), it was decided that expected sacrifices would also be tested for its higher order nature. Therefore, the second order factor analyses for both models, stock investments and funds, included expected investment value and expected sacrifices. Based on the theory and the first order CFA, it was anticipated that expected investment value would consist of five dimensions (economic, functional, emotional, symbolic - altruism, and symbolic – esteem) and expected sacrifices would consist of seven dimensions (money, time, effort, financial risk, social risk, source risk and psychological risk). However, based on the second order CFA, some of the dimensions did not make a substantial contribution to the higher order constructs, and thus were excluded from the model.

#### **4.6.1 Second order confirmatory factor analysis for stock-model**

In the second-order model, expected investment value latent dimension was hypothesized to affect the five sub-dimensions of expected investment value, and the expected sacrifices latent dimension was hypothesized to affect the seven sub-dimensions.

Based on the modification indices and standardized residuals, Symbolic value – Altruism, Symbolic value - Esteem, Money, Time, and Social risk were eliminated one by one from the higher order model. The fit of the final multi-dimensional latent model for stocks fits the data well: the  $\chi^2 = 12.853$  with 13 degrees of freedom,  $p = 0.459$ , RMSEA = 0.0, NNFI = 0.978, CFI = 0.999, GFI = 0.977. According to the fit indices, the final second order model is a sound representation of the expected investment value and expected investment sacrifices constructs.



**Figure 6.** Second order CFA for Expected Investment Value and Expected Sacrifices

The standardized gamma matrix was used to assess the significance of the estimated path coefficients expressing the higher order latent dimensions influence on the latent sub-variables. Table 18 shows the path coefficients and significance (t-values) between first and second order latent variables. Based on the t-values (all > 1.64), expected investment value has a positive and significant influence on economic value, functional value and emotional value, whereas expected sacrifices has a positive and significant influence on effort, financial risk, source risk and psychological risk.

**Table 18.** Paths in the second order CFA (stocks)

| Independent (exogenous) variable | Dependent (endogenous) variable | Standardized GAMMA (Y) | T-value |
|----------------------------------|---------------------------------|------------------------|---------|
| Expected Investment Value        | Econ                            | 0,828                  | 10.627  |
|                                  | Func                            | 1.00                   | 13.269  |
|                                  | Emot                            | 0.602                  | 7.375   |
| Expected Sacrifices              | Effo                            | 0.834                  | 11.003  |
|                                  | Fina                            | 0.796                  | 10.101  |
|                                  | Source                          | 0.709                  | 8.478   |
|                                  | Psych                           | 0.752                  | 9.460   |



The results of the expected investment value latent model are somewhat consistent with the outcomes of Puustinen (2012, 105), since in his research it was also pointed out that in the context of individual stocks, symbolic value dimensions are perceived as less important than the other dimensions. According to this research's results, symbolic value dimensions are not perceived as being aspects of expected investment value among average household consumers. In the expected sacrifices model, effort, financial risk, source risk and psychological risk all made a substantial contribution to the expected sacrifices, whereas money, time and social risk were excluded from the model.

#### **4.6.2 Second order confirmatory factor analysis for funds-model**

A similar second order CFA was conducted for funds. Based on the examination of the fit indices, the model fit is adequate:  $\chi^2 = 31.091$  with 13 degrees of freedom,  $p=0.00327$ ,  $RMSEA=0.0954$ ,  $NNFI=0.953$ ,  $CFI=0.971$ , and  $GFI= 0.945$ . P-value is slightly under 0.05, indicating poor fit and RMSEA is below 0.10, referring to moderate fit. All other fit indices are on a good level. Moreover, all coefficient paths are significant ( $t > 1.64$ ), expected investment value has a positive and significant influence on economic value, functional value and emotional value, whereas expected sacrifices has a positive and significant influence on effort, financial risk, source risk and psychological risks (see table 19) Based on the results of both second order CFA's, the final model (see figure 6) can be said to be a fair representation of expected investment value and expected sacrifices latent constructs in the context of ordinary Finnish consumers.

**Table 19.** Paths in the second order CFA (funds)

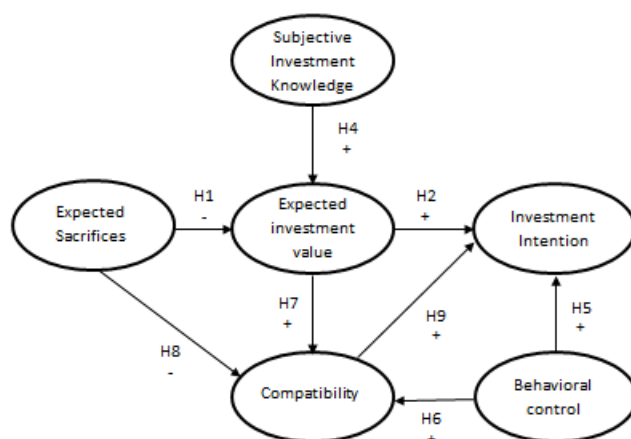
| Independent (exogenous) variable | Dependent (endogenous) variable | Standardized GAMMA (Y) | T-value |
|----------------------------------|---------------------------------|------------------------|---------|
| Expected Investment Value        | Fecon                           | 0.963                  | 12.298  |
|                                  | Ffunc                           | 0.749                  | 8.825   |
|                                  | Femot                           | 0.584                  | 7.108   |
| Expected Sacrifices              | Feffo                           | 0.661                  | 8.241   |
|                                  | Ffina                           | 0.787                  | 10.250  |
|                                  | Fsource                         | 0.836                  | 10.590  |
|                                  | Fpsych                          | 0.851                  | 11.265  |

## 4.2 The structural model assessment and hypotheses testing

Since the measures have now been proven to be reliable and valid, the next step is to assess the structural model and the research hypotheses. The testing begins with the structural model for stocks, after which the structural model for funds will be assessed.

### 4.2.1 Structural model – stocks

Since the sample size was quite small compared to the amount of variables in the whole structural model (including all first order latent variables and their manifest variables), item parcels were used for expected investment value and expected sacrifices, which factorial structures has already been tested in the second order factor analysis. During the analysis of the structural model, the path from subjective investment knowledge to expected sacrifices had to be deleted, as it showed insignificant relationship and worsened the model fit severely. The final structural model is presented in figure 7. The fit indices of the revised model are the following:  $\chi^2 = 86.949$  with 38 degrees of freedom,  $p = 0.000$ , RMSEA = 0.0918, NNFI = 0.950, CFI = 0.965, GFI = 0.897. As the  $p < 0.05$  and  $GFI < 0.09$ , the model does not fit the data perfectly. Moreover, RMSEA is above 0.08 indicating only mediocre fit. However, as all the other fit indices are within the desired range, the model can be accepted.



**Figure 7.** Revised structural model for stocks

Now that the fit of the structural model is assessed, the nature and the significance of the relationships between the latent variables is examined. Based on the standardized gamma, standardized beta and t-values, each research hypothesis is either supported or not. Standardized gamma values specify the relationships between the independent and dependent variables whereas standardized beta specifies the relationships between the dependent variables (table 20 and 21). T-value on the other hand states whether these relationship are significant or not (Diamantopoulos and Siguaw 2000, 92). The analysis begins with the relationships between the independent (exogenous) and dependent (endogenous) latent variables.

Based on the results of the structural model (see table 20), all hypotheses between independent and dependent latent variables hold true, except hypothesis 3, which was left out of the model. Subjective investment knowledge has a direct positive impact on expected investment value with a path coefficient of 0.524 (hypothesis 4). Thus, it suggests that when the level of consumer self-assessed investment knowledge is high, they expect the value of the investment to be higher, whereas consumers who

perceive their knowledge level to be lower, also expect less value from investing.

An unexpected finding is that the effect of expected sacrifices on expected investment value is insignificant, and thus hypothesis 1 is not supported. However, expected sacrifices has a direct negative impact on compatibility with gamma coefficient of -0.157 (hypothesis 8). Accordingly, consumers who expect investing in stocks to require fewer sacrifices also expect stock investing to be more compatible with their life. Perceived behavioral control has a direct positive effect on compatibility with path coefficient of 0.419 (hypothesis 6) and on investment intention with path coefficient of 0.169 (hypothesis 5). Hence, when people consider their financial resources to be sufficient for stock investing, they also perceive stock investing more compatible with their life and have greater intentions to invest. However, the smallness of the effect of perceived behavioral control on investment intention is certainly surprising. Even though it does show a relationship between consumers' self-assessed wealth and stock investment intentions, the relationship is really weak. Accordingly, it highlights the point that one's financial situation is not the most important factor affecting one's investing or saving behavior.

**Table 20.** Direct effects between exogenous and endogenous variables

| Independent (exogenous) variable | Dependent (endogenous) variable | Standardized GAMMA (Y) | T-value | Hypothesis       |
|----------------------------------|---------------------------------|------------------------|---------|------------------|
| Subjective Investment Knowledge  | Expected Investment Value       | 0.524                  | 6.486   | H4 supported     |
| Expected Sacrifices              | Expected Investment Value       | 0.027                  | 0.286   | H1 not supported |
| Expected Sacrifices              | Compatibility                   | -0.157                 | -2.428  | H8 supported     |
| Behavioral Control               | Compatibility                   | 0.419                  | 6.292   | H6 supported     |
| Behavioral Control               | Investment Intention            | 0.169                  | 1.966   | H5 supported     |

The next step is to examine the relationships between dependent (endogenous) latent variables. The results are shown in table 21 below. A surprising result is that expected investment value does not have statistically significant relationship with investment intentions (hypothesis 2). Thus, hypothesis 2 is not supported. However, expected value has a strong direct positive impact on compatibility (path coefficient of 0.637) (hypothesis 7), and compatibility, then again, has a strong positive impact on investment intention (path coefficient of 0.683) (hypothesis 9).

**Table 21.** Direct effects between endogenous variables

| Dependent (endogenous) variable | Dependent (endogenous) variable | Standardized BETA ( $\beta$ ) | T-value | Hypothesis       |
|---------------------------------|---------------------------------|-------------------------------|---------|------------------|
| Expected Investment Value       | Investment Intention            | -0.013                        | -0.121  | H2 not supported |
| Expected Investment Value       | Compatibility                   | 0.637                         | 9.548   | H7 supported     |
| Compatibility                   | Investment Intention            | 0.683                         | 5.120   | H9 supported     |

After assessing the direct effects between the latent variables, the indirect effects are examined. The results are presented in tables 22 and 23. The indirect effects are multiplications of the unstandardized parameter

estimates of the intervening variables (Diamantopoulos & Siguaw 2000, 70). Based on the results, expected sacrifice has an indirect negative effect on investment intention, subjective knowledge has an indirect positive effect on compatibility and investment intention, and the indirect effect of perceived behavioral control on investment intention is also positive.

**Table 22.** Indirect effects between exogenous and endogenous variables

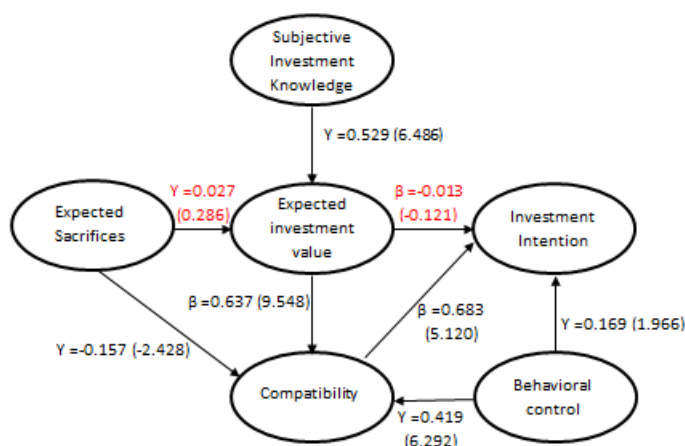
| Independent (exogenous) variable | Dependent (endogenous) variable | Indirect effect | T-value | Relationship          |
|----------------------------------|---------------------------------|-----------------|---------|-----------------------|
| Expected Sacrifice               | Compatibility                   | 0.032           | 0.285   | insignificant         |
| Expected Sacrifice               | Investment Intention            | -0.226          | -1.729  | negative, significant |
| Subjective Investment Knowledge  | Compatibility                   | 0.281           | 5.646   | positive, significant |
| Subjective Investment Knowledge  | Investment Intention            | 0.228           | 4.466   | positive, significant |
| Behavioral Control               | Investment Intention            | 0.296           | 4.098   | positive, significant |

Noteworthy is that while the direct relationship between expected investment value and investment intention is insignificant, the indirect effect is really strong (0.793 with  $t=4.519$ ). However, the indirect effects statistics including the standard errors and t-values need to be interpreted cautiously because if nonsignificant variables have been included in the multiplication of indirect paths, the results might be misleading (ibid, 70).

**Table 23.** Indirect effects between endogenous variables

| Dependent (endogenous) variable | Dependent (endogenous) variable | Indirect effect | T-value | Relationship          |
|---------------------------------|---------------------------------|-----------------|---------|-----------------------|
| Expected Investment Value       | Investment Intention            | 0.793           | 4.519   | positive, significant |

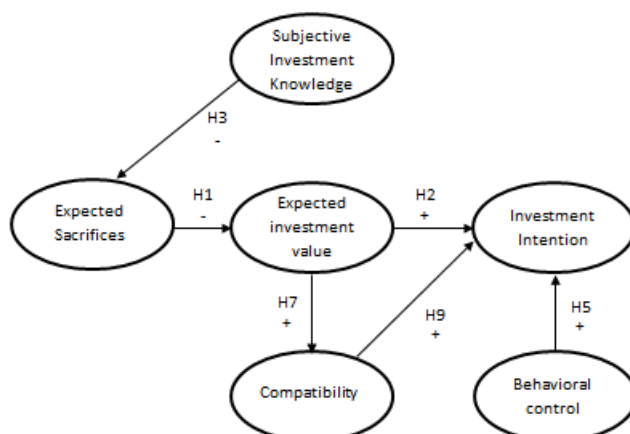
The results of the structural equation modeling (SEM) are illustrated in figure 8. However, as already discussed, even though the direct effect of expected investment value on investment value is insignificant, noteworthy is that the indirect effect is really strong (0.793 with  $t=4.519$ ). Other indirect effects not shown in the figure are presented in the tables 22 and 23 above.



**Figure 8.** Stocks-model: Paths between latent variables (t-values in parentheses)

#### 4.7.2 Structural model – funds

The assessment of the structural model for funds was conducted in similar manner as the assessment of the stocks-model. However, the fit of the initial model was not on an acceptable level, and thus the model had to be adjusted based on theoretical and practical justifications, taking modification indices into account. Figure 10 shows the revised model for investment funds. All other fit indices are on a good level except the p-value, which is  $<0.05$ . The fit indices are:  $\chi^2 = 67.615$  with 41 degrees of freedom,  $p = 0.00188$ , RMSEA = 0.0651, NNFI = 0.979, CFI = 0.984, GFI = 0.925.



**Figure 9.** Revised structural model for funds

The results of the structural model for funds are partly different than the results of the structural model for stocks (see table 24). Based on the data, subjective investment knowledge has a direct negative effect on expected sacrifices with a standardized coefficient of -0.401 (hypothesis 3). Thus, consumers with less knowledge of investment funds consider investing to be riskier and more troublesome than consumers with higher levels of knowledge. Likewise as in the stocks-model, behavioral control has a direct positive effect on investment intention with a path coefficient of 0.228 (hypothesis 5). Accordingly, consumers who believe their financial resources to be sufficient for investing in funds have higher intentions to invest. When compared to the stocks model, current self-assessed financial situation (behavioral control) seems to have a somewhat greater impact on intentions to invest in investment funds than on intentions to invest in stocks.



**Table 24.** Direct effects between exogenous and endogenous variables (funds-model)

| Independent (exogenous) variable | Dependent (endogenous) variable | Standardized GAMMA ( $\gamma$ ) | T-value | Hypothesis   |
|----------------------------------|---------------------------------|---------------------------------|---------|--------------|
| Subjective Investment Knowledge  | Expected Sacrifices             | -0.401                          | -4.644  | H3 supported |
| Behavioral Control               | Investment Intention            | 0.228                           | 4.009   | H5 supported |

The direct effects between endogenous variables are presented in table 25. Unlike in the stocks model, expected sacrifice has a strong direct effect on expected investment value with a path coefficient of -0.682 (hypothesis 1). Expected value then again has a strong positive effect on compatibility with a coefficient of 0.736 (hypothesis 7), which is slightly stronger than in the stocks-model. The relationship between expected investment value and investment intention is insignificant (hypothesis 2), as was also the case with stock investments. The strength of the relationship between compatibility and investment intention is quite similar to the result of the stocks-model, as the path coefficient is 0.587 (hypothesis 9).

**Table 25.** Direct effects between endogenous variables (funds-model)

| Dependent (endogenous) variable | Dependent (endogenous) variable | Standardized BETA ( $\beta$ ) | T-value | Hypothesis       |
|---------------------------------|---------------------------------|-------------------------------|---------|------------------|
| Expected Sacrifice              | Expected Investment Value       | -0.682                        | -7.975  | H1 supported     |
| Expected Investment Value       | Compatibility                   | 0.736                         | 8.986   | H7 supported     |
| Expected Investment Value       | Investment Intention            | 0.158                         | 1.495   | H2 not supported |
| Compatibility                   | Investment Intention            | 0.587                         | 5.868   | H9 supported     |

The indirect effects are presented in tables 26 and 27. Based on the results, subjective investment knowledge has an indirect positive effect on compatibility, investment intention, and expected investment value, and an indirect negative effect on expected sacrifice (see table 26). Behavioral control has also an indirect positive effect on investment intention.

**Table 26.** Indirect effects between exogenous and endogenous variables

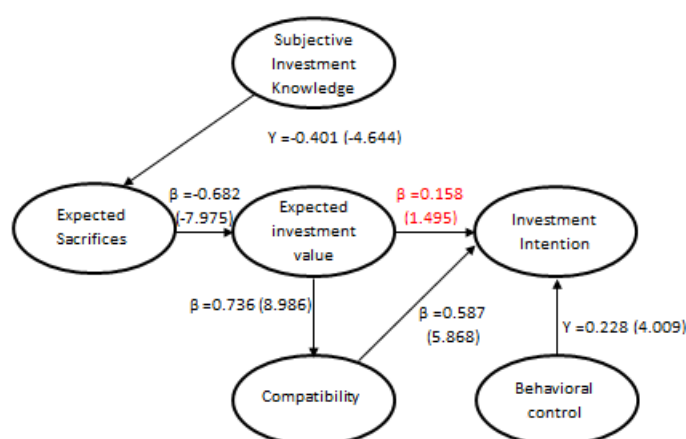
| Independent (exogenous) variable | Dependent (endogenous) variable | Indirect effect | T-value | Relationship          |
|----------------------------------|---------------------------------|-----------------|---------|-----------------------|
| Subjective Investment Knowledge  | Compatibility                   | 0.181           | 3.911   | positive significant  |
| Subjective Investment Knowledge  | Investment Intention            | 0.157           | 3.760   | positive, significant |
| Subjective Investment Knowledge  | Expected Sacrifice              | -0.245          | -4.644  | negative significant  |
| Subjective Investment Knowledge  | Expected Investment Value       | 0.146           | 4.123   | positive, significant |
| Behavioral Control               | Investment Intention            | 0.226           | 4.009   | positive, significant |

Table 27 displays the indirect effects between endogenous variables. Expected sacrifice has a strong indirect negative effect on compatibility (-0.739 with  $t=-6.699$ ), on investment intention (-0.642 with  $t=-6.018$ ), and on expected investment value (-0.597 with  $t=-7.975$ ). The indirect effect of compatibility on investment intention is positive and significant. Expected investment value has a strong indirect effect on both, compatibility (1.238 with  $t=8.986$ ) and on investment intention (1.076 with  $t=7.522$ ). Thus, again notable is the relationship between expected investment value and investment intention, which showed an insignificant direct relationship.

**Table 27.** Indirect effects between endogenous variables

| <b>Dependent (endogenous) variable</b> | <b>Dependent (endogenous) variable</b> | <b>Indirect effect</b> | <b>T-value</b> | <b>Relationship</b>   |
|--|--|------------------------|----------------|-----------------------|
| Expected Sacrifice                     | Compatibility                          | -0.739                 | -6.699         | negative, significant |
| Expected Sacrifice                     | Investment Intention                   | -0.642                 | -6.018         | negative, significant |
| Expected Sacrifice                     | Expected Investment Value              | -0.597                 | -7.975         | negative significant  |
| Compatibility                          | Investment Intention                   | 0.635                  | 5.868          | positive, significant |
| Expected Investment Value              | Compatibility                          | 1.238                  | 8.986          | positive, significant |
| Expected Investment Value              | Investment Intention                   | 1.076                  | 7.522          | positive, significant |

The SEM results for funds model are illustrated in figure 11. The most interesting differences between the stocks- and the funds-model are the effect of subjective investment knowledge on expected sacrifices and expected investment value, as well as the difference between the effects of expected sacrifices on expected investment value and compatibility. Moreover, in the stocks-model compatibility has much stronger effect on investment intentions, whereas in the funds-model the effect of expected investment value on compatibility is greater than in the stocks model.



**Figure 10.** Funds-model: Paths between latent variables (t-values in parentheses)

#### 4.8 T-tests

The last research hypothesis considering the differences between respondents with no prior investment experience and with investment experience were examined with t-tests. The independent sample t-test assesses statistical significance of mean differences of variables between two sample groups (Hair et al. 2009a). It was hypothesized that investors and non-investors differ in terms of subjective investment knowledge, expected sacrifices, expected investment value, perception of compatibility, behavioral control and intentions to invest. The results of the t-tests are shown in appendix 5.

Firstly, the Levene-test was examined (Levene 1960) to see whether the sample variances are equal ( $p > 0.05$ ). As shown in table 33 and 35 (appendix 5), the Levene test statistic is less than the critical value for SSIK, SCOMP, and SII in the stocks-model, and for FEMOT, FPSYCH, FSIK, FCOMP, FCBF, and FII in the funds-model (at the 0.05 significance level), and thus we cannot assume that the variances of these research items are equal.

Based on these results of the Levene-test, the results of the t-tests were next examined. As presented in tables 32 and 34 (appendix 5), the means

of the research variables between the consumers with and without prior investment experience differed on a statistically significant level ( $p < 0.05$ ) in terms of all research variables in both research models, except for financial risk. To test the magnitude of the difference, Cohen's  $d$  was used as the effect size estimate, as it is the most commonly used measure among researchers (Ferguson 2009). Cohen's  $d$  is calculated by dividing the difference between two group means by the pooled standard deviation (Cohen 1988, 20; Rosnow & Rosenthal 1996). Cohen (1988, 25) classified the effect sizes as large ( $d \geq 0.8$ ), medium ( $d = 0.5$ ), and small ( $d = 0.2$ ). The calculated Cohen's  $d$ 's are presented below in table 28.

**Table 28.** Effect sizes

| Item       | Cohen's D | Item       | Cohen's D |
|------------|-----------|------------|-----------|
| SECON      | 0.5342    | FECON      | 0.5709    |
| SFUNC      | 0.4786    | FFUNC      | 0.8879    |
| SEMOT      | 0.4518    | FEMOT      | 0.4573    |
| SEFFORT    | -0.5106   | FEFFORT    | -0.7982   |
| SFINANCIAL | -0.2352   | FFINANCIAL | -0.2829   |
| SSOURCE    | -0.50032  | FSOURCE    | -0.5820   |
| SPSYCH     | -0.4196   | FPSYCH     | -0.5506   |
| SSIK       | 0.8006    | FSIK       | 0.8696    |
| SCOMPAT    | 0.8195    | FCOMPAT    | 1.0711    |
| SBCF       | 0.7957    | FBCF       | 0.9829    |
| SII        | 1.4916    | FII        | 1.4867    |

As presented in table 28, the Cohen's  $d$ 's were above 0.2 (small effect) for all research variables. The largest effects in both research models were for investment intention ( $|1.49|$  in both models), and the second largest for compatibility ( $|0.82|$  in stocks-model and  $|1.07|$  in funds-model). Notable differences in the stocks model were also in subjective investment knowledge ( $|0.82|$ ) and for perceived behavioral control ( $|0.80|$ ). In the funds-model, large effect sizes were found for perceived behavioral control ( $|0.98|$ ), functional value ( $|0.89|$ ), subjective investment knowledge ( $|0.87|$ ), and for effort ( $|0.80|$ ). Excluding financial risk from the analysis (due to its insignificant difference found in prior analyses), the smallest

effect size found in the stocks-model was for psychological risk ( $|0.42|$ ) and in the funds-model for emotional value ( $|0.46|$ ). Based on the results, we can conclude that there are differences in the research items between consumers with investment experience and without investment experience, and thus hypothesis 10 is supported and accepted.

## 5 DISCUSSION AND CONCLUSIONS

The purpose of this research was to develop a theoretical model that defines how subjective investment knowledge, expected sacrifices, expected investment value, compatibility and perceived behavioral control affect consumer investment intentions. The underlying purpose was to obtain an improved understanding of Finnish consumers' investment behavior. The focal constructs of this thesis were derived from different consumer behavior theories, as it has been suggested that a marketing theoretical perspective could invigorate investment behavior research (e.g. Goldstein et al. 2008; Hoffmann & Broekhuizen 2009). The theoretical model was tested with two investment alternatives, namely stocks and investment funds. It was also studied whether there are differences in subjective investment knowledge, expected sacrifices, expected investment value, compatibility, perceived behavioral control and consumer investment intentions between consumers with and without prior investment experience.

As the research questions addressed causal research problems, a quantitative research method was used. The data was collected with a structured questionnaire that was distributed via e-mail to 2400 Finnish consumers. Altogether 244 responses were received, however only 154 of them were fully completed and therefore usable. As the response rate was low, the potential effect of the non-response bias on the research results needs to be taken into consideration. The data was analyzed with SPSS Statistics, LISREL 8.80 and Excel.

This chapter begins by summarizing the findings of the thesis. Thereafter the theoretical and managerial implications of the research are discussed. Lastly, the limitations and directions for future research conclude the thesis.

## 5.1 Summary of the findings

This thesis studied the effects of different factors on consumers' investment intentions. Two structural models were presented, one for stock investments and one for investment funds. Both models assessed the relationships between subjective investment knowledge, expected investment value, expected sacrifice, compatibility, perceived behavioral control and investment intentions.

Moreover, the research improved the understanding of the dimensions of value and sacrifice that average household consumers expect from investing. Whereas previous research has already defined and measured consumers' value perceptions in the investment context (Puustinen 2012; Puustinen et al. 2013), the sample of those studies only included members of the Federation of Stock Investors, and thus it was expected that a sample including ordinary consumers would yield different results. Therefore the target population of this research was average household consumers.

Based on the literature review, two higher order latent models were constructed, one for expected investment value and one for expected sacrifice. Based on the results of the second order confirmatory factor analyses, expected investment value among average household consumers falls into three dimensions; namely, expected economic value, expected functional value and expected emotional value. Thus, symbolic benefits (self-esteem and altruism) are not something average household consumers expect from stock or fund investing. Hence, consumers do not expect investing in stocks or mutual funds to help them to boost their self-esteem or status among their peers. Neither do average consumers expect to gain altruistic benefits, that is, to demonstrate their goodwill through stock or fund investing.



Expected sacrifice then again consists of four dimensions: effort, financial risk, source risk, and psychological risk. Accordingly, consumers expect less value from investing when they anticipate investing to require a lot of effort, such as searching, learning or cognitive work. Therefore, consumers are prone to choose “easy” options for wealth allocation. Moreover, whereas standard finance considers financial risk as objective and measurable, the results of this research suggest that consumers base their decisions on their perceptions of the risk, which might sometimes be quite far from the reality. Source risk, then again, refers to the consumers feeling of distrust regarding the information they receive about the investment. Thus, if the consumers do not trust providers or sellers of the investment, they expect to receive less value from investing. The last dimension of expected sacrifice is the psychological risk of investing. Accordingly, consumers might want to avoid mental stress, worrying and anxiety, and therefore shun investing.

The relationship between expected sacrifice and expected value was strong in the funds-model ( $\beta = -0.682$ ), however, in the stocks-model the relationship was insignificant. This might indicate that the consumers who expect value from stock investing are indifferent about the sacrifices that investing would require, whereas fund investors are more concerned about investment related sacrifices. Also, it might be that the respondents were less familiar with stock investing and therefore they might have had difficulties in estimating the sacrifices and expected value. However, in the stocks model expected sacrifice affected perceived compatibility negatively ( $\gamma = -0.157$ ), referring that the more sacrifices one expects to have to make, the less compatible one perceives the stock investing to be with his or her life.

One of the central findings of the thesis was that when it comes to stock investments, the level of expected value is strongly affected by the consumer’s self-assessed knowledge level ( $\gamma = 0.524$ ), whereas in the case of investment funds, subjective knowledge has a strong direct effect

on expected sacrifices ( $\gamma = -0.401$ ). As to the best of our knowledge, no prior research has studied how consumers' knowledge levels affect their evaluations of the investment products and investment related sacrifice. However, as discussed in the theoretical part of the thesis, several research papers within the field of consumer behavior have suggested that knowledge level has an impact on consumer evaluative processes and thereby affect their product assessments.

A certainly surprising finding was that the relationship between expected investment value and investment intentions was insignificant in both models. Then again, in both models expected investment value affected compatibility and thus also had an indirect effect on investment intentions. The relationship between expected value and compatibility was slightly stronger in the funds model ( $\beta = 0.736$ ) than in the stocks model ( $\beta = 0.637$ ). Conversely, compatibility had a somewhat stronger effect on investment intentions in the stocks-model ( $\beta = 0.683$ ) than in the funds-model ( $\beta = 0.587$ ). Thus, consumers seem to be more concerned about the changes in behavior that stock investing would require than about the requirements of fund investing.

Another unexpected finding was that consumers' self-assessed wealth (perceived behavioral control) had quite a small impact on their investment intentions in both models. In the funds-model the relationship was slightly higher ( $\gamma = 0.228$ ) than in the stocks-model ( $\gamma = 0.169$ ). Accordingly, even if consumers would have the money to invest and acknowledge it, they do not necessarily invest it.

The results also suggest that consumers with and without prior investment experience evaluate the dimensions of expected investment value and expected sacrifices, as well as the compatibility, behavioral control, subjective investment knowledge and investment intentions differently. The largest effects in both investment alternatives were in investment intention, implying that consumers with no investment experience are

significantly less likely to invest than consumers with prior investment experience. The second largest difference between the investors and non-investors was in their evaluation of the investment's compatibility. Other notable differences in the stocks model were found in subjective investment knowledge and perceived behavioral control whereas in the funds model the greatest effect sizes were in behavioral control, functional value, subjective investment knowledge, and effort. Noteworthy was that the difference in the evaluation financial risk was not statistically significant between the groups in the case of both investment alternatives.

## **5.2 Theoretical implications**

It has been suggested that marketing theoretical viewpoint could invigorate investment research (e.g. Goldstein et al. 2008; Hoffmann & Broekhuizen 2009, Aspara & Tikkanen 2010) since there is no reason for setting investment and savings decisions apart from other consumer choices (Zhou & Pham 2004; Puustinen 2012). Consequently, to gain new insights into average household consumer's investment decision-making, this thesis investigated investment behavior from a consumer behavioral perspective.

Previous research has shown that multiple value dimensions might be better able to explain consumer investment behavior than economic value alone (Puustinen 2012; Puustinen et al. 2013). However, prior research has only investigated perceptions of value in the post-investment phase whereas the focus of this thesis was in the pre-investment stage. As perceived value is considered to be dynamic in nature and change over the stages of the purchase process (Gardial et al. 1994; Parasunaman 1997; Woodruff 1997), this thesis added knowledge on the pre-investment perceptions of value, that is, expected investment value. Moreover, where previous research measured perceived investment value among the members of the Federation of Stock Investors (Puustinen et al. 2013), this

this thesis measured perceptions of investment value among average household consumers. Based on the results, expected investment value among ordinary consumers is also multidimensional, however, only consisting of three dimensions, namely economic, functional and emotional. Thus, symbolic benefits were not something ordinary consumers expected to gain from investing in stocks or funds.

The way investment value was measured in the research of Puustinen (2012) and Puustinen et al. (2013) mainly focused on the benefits of investing (means-end value-model). As the purpose of this thesis was not only to explain why consumers do invest in stocks or investment funds, but also why they do not, more emphasis was given on studying the consumers' perceptions of investment related sacrifice. Expected sacrifice was found to be a multidimensional higher order construct, consisting of four dimensions, namely effort, financial risk, source risk, and psychological risk. To the best of my knowledge, no prior research has measured consumer's expectations of investment related sacrifice. Thus, this is a contribution to the current investment literature and should be more empirically tested and verified. Moreover, the measurement items need more reviewing as the scale was constructed purely for the purposes of this study.

Surprisingly, the direct relationship between expected investment value and investment intention was found to be insignificant in both research models. This was somewhat surprising as most consumer behavior theories suggest that consumer's evaluation of the behavior would impact behavioral intentions directly (e.g. Consumer Theory, Theory of Reasoned Action, Theory of Planned Behavior). However, it has been argued that when the behavior requires changes in lifestyle and actions, high values might not determine behavior directly due to "value-action gap" (e.g. Pickett-Baker & Ozaki 2008). The value-action gap has been mostly researched in the field of environmental behavior, where it has been found

that consumers generally evaluate environmentally friendly products highly, however still might not intend to purchase them as using them would require a change in one's behavior, and thus would not assimilate perfectly with one's life. However, expected investment value affected investment intentions indirectly via compatibility, making it a significant determinant of consumer investment intentions. Accordingly, the results suggest that even though a consumer would expect to receive value from investing, he or she will not invest if the investment alternative is not perceived to be compatible with his or her current life. Thus, investing needs to match with the consumer's past experiences, existing values and practices, to increase investment intentions. Thus, consumers are prone to choosing investment options that are easily assimilated with their life.

Furthermore, the research made a contribution regarding the effect of investment knowledge on investment intentions. Whereas the relationship between financial knowledge and financial behavior has been acknowledged in prior research (e.g. Lusardi & Mitchell 2005; 2007), it has remained somewhat unclear whether knowledge affects intentions directly or indirectly. Thus, it has been suggested (e.g. Pellinen et al. 2011) that future studies should concentrate on examining the consequences of financial knowledge. The results of this research suggested that subjective investment knowledge has a positive effect on expected investment value (stocks-model) and a negative effect on expected sacrifice (funds-model). Consequently, the results support the findings within the field of consumer behavior, which have indicated that consumers with differing levels of product knowledge use different evaluative strategies and therefore assess products differently. Hence, the effect of subjective investment knowledge on investment intentions is indirect in nature.

Whereas behavioral finance has been criticized for its inability to deliver theoretical models, this thesis' aim was to build a structural model based on solid theoretical and practical justifications to explain consumers' intentions to invest in stocks and investment funds. More specifically, the

objective of the model was to test the relationships between expected investment value, expected sacrifice, perceived compatibility, behavioral control, subjective investment knowledge, and investment intentions. The validity of the model in explaining investment intentions was tested for two investment alternatives, that is, for stocks and investment funds. Whereas the funds-model displayed a better fit, the fit of both models were within an acceptable range. Thus, the theoretical model as a whole can be considered as a contribution to the prior literature, as it describes well the complex relationships between expected investment value, expected sacrifice, perceived compatibility, behavioral control, subjective investment knowledge, and investment intentions.

Moreover, the results revealed that consumers with and without prior investment experience evaluate all of the investigated aspects of investing differently, except for financial risk. Thus the results support the notion that past experiences affect the attractiveness of consumer alternatives (Murray & Häubl 2007), by revealing that consumers without investment experience evaluate investment related sacrifices higher and value, compatibility and intentions lower. Accordingly, our suggestion that cognitive lock-in affects consumer investment decisions is supported. The finding also strengthens the idea that investment decisions are not made based on the consideration of risk and returns alone, but instead might be affected by skill-based habits and automated behaviors, which then again could explain why consumers become locked-in to inferior investment or savings alternatives, such as deposit accounts.

### **5.3 Managerial implications**

There is no doubt that more active capital markets would benefit the whole society. The amount of privately-owned financial capital keeps rising and further expands consumer investment opportunities beyond bank deposits. Even though the interest of Finnish households in investing has improved (Pellinen 2011), there is still no denying that over 80 billion euros lie on

deposit accounts (Official Statistics of Finland 2014) and that only 15% of Finns own stocks (Ministry of Finance 2012). In view of that, the amount of potential investors is enormous. Consequently, an improved understanding of the factors affecting consumer investment and savings decisions will assist not only financial companies in developing more precise marketing and selling strategies but also public actors in their decision making.

Based on the results of this research, the aging population with increased wealth is not going to make a drastic change in the Finnish financial markets itself. This is because perceived behavioral control only has a minor effect on one's investment intentions, meaning that even if one perceives he or she would have the money to invest in stocks or funds, it only increases his or her investment intentions to a small extent.

However, the results suggest that the assessment of the benefits and sacrifices of investment products is strongly affected by one's self-assessed investment knowledge. Moreover, self-assessed knowledge affects consumer's intentions to invest indirectly. Thus, subjective knowledge increases consumers' expectations regarding stock and fund investments value and decreases the expectation of investment related sacrifice. Consequently, by educating consumers, both public actors and financial companies are able to positively influence consumers investment related anticipations and thereby increase their investing activities. Yet, it needs to be acknowledged that providing financial education is much more than simply providing information. An excessive amount of complex information might in fact make consumers even more unwilling to learn about financial matters (Diacon & Ennew 2001). Educating, then again, should consist of a combination of informing, skill-building, and motivating, which together enable the changes in one's behavior. (Hilgert et al. 2003).

Thus, taking into account that self-assessed knowledge reflects one's objective knowledge and self-confidence, wealth managers and

investment advisors should provide the customer with investment information that is as easy to understand as well as to encourage them to believe that they know enough to make informed decisions. After all, consumers are more likely to purchase products when the products are perceived less complex and easier to understand (e.g. Davis et al. 1989; Moore & Benbasat 1991; Rogers 1995; Venkatesh 1999), and the results of this study suggest that the same applies to investment products.

Furthermore, the results suggest that consumers have higher intentions to invest when they expect the investment alternative to deliver economic, functional and emotional value for them. Expected economic value is increased when the consumer believes that the management fees of the investment are low. Functionality, then again, refers to the convenience of investing, and thus consumers who are less interested in investment related matters and want to devote less time for investment related activities might look for complete solutions – even if their monetary cost would be higher than other investment alternatives. Emotional value refers to the consumer's anticipation regarding the excitement and enjoyment of investing. Accordingly, when consumers expect investing to be exciting and fun, their intentions to invest are higher. Consequently, by understanding the different dimensions of expected investment value, financial companies are able to create more effective marketing and selling strategies by focusing on value delivery. As suggested by Puustinen (2012), financial companies can create competitive advantages by focusing on prize, solutions, experiences or meaning. However, based on the results of this thesis, if the target market of the company consists of average household consumers, focusing on meaning (i.e. symbolic value) would be pointless.

Moreover, not only the managers in financial conglomerates but also public actors should understand that consumers are not only motivated by financial gains when making investment and saving decisions. Thus, simply changing the dividend taxation, as suggested by the Ministry of



Finance (2012), most likely would not cause the desired change in the amount of stock investors. After all, most Finns are not even familiar with the current taxation.

The results also revealed that consumers not only avoid investing because of the financial risk, but also because of the required effort, fear of psychological burden and the risk of becoming cheated by unethical actors. Financial companies can reduce consumers' expectations of required effort by creating simple and easy investment services which necessitate a minimal amount of information searching and learning. And as previously stated, even though the basic assumption in economic theory is that consumers are better off with more options, too many alternatives cause an information overload (Tapia & Yermo 2007). To reduce the cognitive burden, the amount of investment options should be rather limited, and served with simple information without excessive financial jargon. Moreover, to reduce the consumers' fears, anxiety and nervousness, wealth managers and investment advisors should have excellent social and emotional skills (empathy) to be able to support customers emotionally in the pre-investment stage. Finally, it is important that financial services and products are presented as transparent as possible because the distrust in products and their providers is also a major concern of the consumers and thereby decrease their investment intentions. Thus, on the basis of the results, the reputation of companies and financial advisors is a critical factor in consumer financial decision making.

Finally, as perceived compatibility has the greatest effect on investment intentions, consumers should be provided with investment services and products which require the least amount of change in their behavior and which are easily assimilated into one's life. Thus, the results suggest that consumers currently keep their assets on a bank account – not because accounts are the least risky option, but because they consider it to be most compatible with their past behavior and current needs, and also to

require the least amount of change in behavior. Yet, as previously mentioned perceived compatibility is affected by expected investment value and expected sacrifice, which then again are affected by the consumer's assessment of his or her investment knowledge. Acknowledging these relationships, managers and public actors are better able to affect consumer saving and investment decisions and promote investing in stocks and funds.

Overall, the results provide several implications for managers and public decision makers about the complex interrelations of subjective knowledge, expected sacrifice, expected investment value, compatibility, perceived behavioral control and consumers' investment intentions. Understanding which factors affect consumer stock and fund investment intentions positively and which negatively will assist in the attempts to affect consumer wealth allocation decisions. Moreover, the thesis provided insights into how consumers with different experience levels evaluate investing, and how consumer preference might be affected by previous behavior. Consequently, the results can assist managers as well as public authorities as they are creating strategies and schemes to promote household investing.

#### **5.4 Limitations of the research and future directions**

The thesis is subject to several limitations that need to be acknowledged when interpreting the results and conclusions. These limitations, however, provide possibilities for future research. Firstly, the research was limited only on a single country. As the characteristics of Finnish financial markets differ quite radically from many other domestic financial markets (Sunikka et al. 2010), and likewise does the investment behavior of Finnish consumers from consumers living in countries with more active capital markets, the results are not applicable to other countries. Accordingly, taking into consideration that country-specific differences might affect the

results, more empirical research is needed to verify the validity of the theoretical models in other settings.

Moreover, as the focus of the research was only on consumers aged between 45-65 years (due to the age group's highest individual net worth), the results cannot be generalized to consumers of all age. After all, it is expected that consumers of different age have different motives and goals for investing, and thus are likely to evaluate investing differently. Furthermore, the research was delimited to stocks and funds, and thus other investment products might yield different results, as individuals are likely to have different motivations to invest in those.

It also cannot be denied that the response rate of the study was below desired, and the nonresponse bias might have affected the results. The questionnaire recipients who decided not to respond might have been less interested in investment related matters, and as one can notice in the description of respondent profile, the sample consists mostly of consumers with prior investment experience. Since consumers with high and low involvement levels are expected to evaluate investing differently, a higher response rate would have yielded more reliable results. In order to get a better understanding of the behavior and beliefs of those consumers who have never invested in stocks or investment funds, future research could aim at testing the model with data of only consumers with no previous investment experience.

On a conceptual level, it needs to be acknowledged that there are several definitions for the value concept and thus controversies exist on how it should be correctly conceptualized and measured. This thesis adopted the investment value theory of Puustinen et al. (2013), however gave more focus on investment related sacrifices as the antecedents of expected investment value. Since to the best of our best knowledge, no prior research has defined nor measured the expected sacrifices of investing, the measurement scale was developed, tested and purified here for the

first time. Therefore, more empirical research is required in order to verify the validity and reliability of the scale. Also, as the theory suggested that expected sacrifice would consist of more dimensions than just the four, future research could focus on further testing of the dimensions.

Additionally, as mentioned in the theoretical part, perceived value is dynamic in nature (e.g. Parasuraman 1997; Woodruff 1997; Karkkila 2008) and this research only gives a static pre-investment view on consumer's value perceptions. In order to see how one's evaluations change during the investment process, a longitudinal study would offer new insights to investment research. Moreover, it would help financial companies in assessing their service strategies as they would gain more knowledge on how consumers' expectations differ from their experiences and whether there is a gap between them.

Since the results suggested that subjective investment knowledge affects consumer's evaluations of investment products and investment intentions, future research could focus on determining the antecedents of subjective investment knowledge. A better understanding of the factors which affect one's self-assessed knowledge would assist in influencing consumer financial and investment behavior. After all, based on the results of this research, the level of consumers' subjective stock and investment fund knowledge indirectly affect consumer investment intentions. Moreover, understanding which other factors besides expected investment value, expected sacrifices, and perceived behavioral control affect perceived compatibility would offer more information on the further development of investment products and services.

Furthermore, the results gave initial support to the suggestion that cognitive lock-in affects consumer investment decisions. However, the group comparisons were only made between two respondent groups; those with previous investment experience and those with no investment experience, and consequently the evidence is quite thin. As it has been

suggested that cognitive lock-in is an increasingly important factor affecting consumer behavior (e.g. Johnson 2003) as the physical barriers to switch between products and their providers have disappeared. Therefore, future research could focus more closely on its role on consumer investment decisions and to the extent that skill-based habits influence investment choices.

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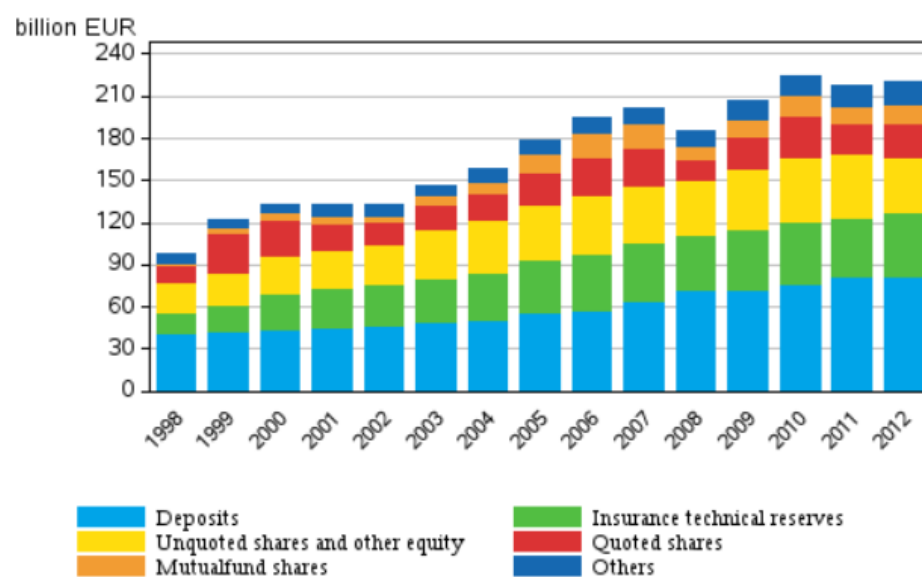
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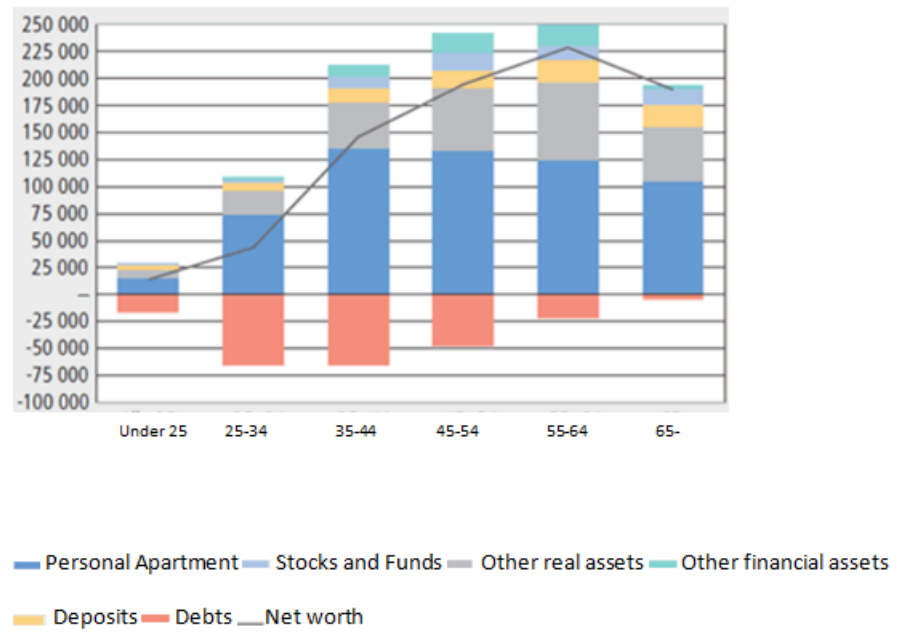
## APPENDICES

### Appendix 1: Financial assets of households



**Figure 11.** Financial assets of households 1998-2012 (EUR billion)  
(Official statistics of Finland 2014)

## Appendix 2: Net worth by age group



**Figure 12.** Net worth by age group (in euros) (Statistics Finland 2012a)

### Appendix 3: Demographics by investment experience

**Table 29.** Demographics by investment experience

| Characteristics                      | All respondents (N=154) |      | Previous investing experience (N=115) |      | No investing experience (N=39) |      |
|--------------------------------------|-------------------------|------|---------------------------------------|------|--------------------------------|------|
|                                      |                         | %    |                                       | %    |                                | %    |
| <b><u>Age</u></b>                    |                         |      |                                       |      |                                |      |
| under 45                             | 0                       | 0    | 0                                     | 0    | 0                              | 0    |
| 45-49                                | 21                      | 13.6 | 15                                    | 13.0 | 6                              | 15.4 |
| 50-54                                | 25                      | 16.2 | 16                                    | 13.9 | 9                              | 23.1 |
| 55-59                                | 39                      | 25.3 | 28                                    | 24.3 | 11                             | 28.2 |
| 60-64                                | 52                      | 33.8 | 40                                    | 34.8 | 12                             | 30.8 |
| over 65                              | 17                      | 11.0 | 16                                    | 13.9 | 1                              | 2.6  |
| <b><u>Education</u></b>              |                         |      |                                       |      |                                |      |
| Primary school                       | 9                       | 5.8  | 7                                     | 6.1  | 2                              | 5.1  |
| Secondary education                  | 51                      | 33.1 | 32                                    | 27.8 | 19                             | 48.7 |
| Bachelor's degree                    | 54                      | 35.1 | 40                                    | 34.8 | 14                             | 35.9 |
| Master's degree                      | 37                      | 24.0 | 33                                    | 28.7 | 4                              | 10.3 |
| Doctoral degree                      | 3                       | 1.9  | 3                                     | 2.6  | 0                              | 0    |
| <b><u>Socio economic group</u></b>   |                         |      |                                       |      |                                |      |
| Upper-level employee                 | 19                      | 12.3 | 16                                    | 13.9 | 3                              | 7.7  |
| Lower-level employee                 | 18                      | 11.7 | 8                                     | 7.0  | 10                             | 25.6 |
| Manual worker                        | 26                      | 16.9 | 17                                    | 14.8 | 9                              | 23.1 |
| Student                              | 2                       | 1.3  | 1                                     | 0.9  | 1                              | 2.6  |
| Pensioner                            | 52                      | 33.8 | 44                                    | 38.3 | 8                              | 20.5 |
| Unemployed                           | 10                      | 6.5  | 4                                     | 3.5  | 5                              | 12.8 |
| Other                                | 27                      | 17.5 | 24                                    | 20.9 | 3                              | 7.7  |
| <b><u>Gross monthly income</u></b>   |                         |      |                                       |      |                                |      |
| <500                                 | 5                       | 3.2  | 2                                     | 1.7  | 3                              | 7.7  |
| 1001-1500                            | 10                      | 6.5  | 5                                     | 4.3  | 5                              | 12.8 |
| 1501-2000                            | 19                      | 12.3 | 14                                    | 12.2 | 5                              | 12.8 |
| 2001-2500                            | 27                      | 17.5 | 21                                    | 18.3 | 6                              | 15.4 |
| 2501-3000                            | 25                      | 16.2 | 15                                    | 13.0 | 10                             | 25.6 |
| 3001-3500                            | 14                      | 9.1  | 10                                    | 8.7  | 4                              | 10.3 |
| 3501-4000                            | 20                      | 13.0 | 18                                    | 15.7 | 2                              | 5.1  |
| 4001-4500                            | 9                       | 5.8  | 8                                     | 7.0  | 1                              | 2.6  |
| 4501-5000                            | 5                       | 3.2  | 4                                     | 3.5  | 1                              | 2.6  |
| 5001-5500                            | 6                       | 3.9  | 4                                     | 3.5  | 2                              | 5.1  |
| 5501-6000                            | 1                       | 0.6  | 1                                     | 0.9  | 0                              | 0    |
| 6001-6500                            | 3                       | 1.9  | 3                                     | 2.6  | 0                              | 0    |
| >6500                                | 10                      | 6.5  | 10                                    | 8.7  | 0                              | 0    |
| <b><u>Profession</u></b>             |                         |      |                                       |      |                                |      |
| Manager                              | 23                      | 14.9 | 33                                    | 19.1 | 1                              | 2.6  |
| Professional                         | 16                      | 10.3 | 15                                    | 13.0 | 1                              | 2.6  |
| Associate professional               | 29                      | 18.8 | 18                                    | 15.7 | 11                             | 28.2 |
| Clerical support worker              | 12                      | 7.8  | 5                                     | 4.3  | 7                              | 17.9 |
| Service/ sales worker                | 10                      | 6.5  | 8                                     | 7.0  | 2                              | 5.1  |
| Agricultural / forestry worker       | 6                       | 3.9  | 6                                     | 5.2  | 0                              | 0    |
| Craft/ related trades worker         | 10                      | 6.5  | 8                                     | 7.0  | 2                              | 5.1  |
| Plant/ machine operator or assembler | 5                       | 3.2  | 5                                     | 4.3  | 0                              | 0    |
| Other                                | 43                      | 27.9 | 28                                    | 24.3 | 15                             | 38.5 |

## Appendix 4: Descriptive statistics for research items

**Table 30.** Descriptive Statistics - Stock Investments

|       | N         | Mean      | Std. Deviation | Skewness  |            | Kurtosis  |            |
|-------|-----------|-----------|----------------|-----------|------------|-----------|------------|
|       | Statistic | Statistic | Statistic      | Statistic | Std. Error | Statistic | Std. Error |
| SSIK1 | 154       | 3,56      | 2,124          | ,619      | ,195       | -,613     | ,389       |
| SSIK2 | 154       | 4,34      | 2,164          | ,139      | ,195       | -,966     | ,389       |
| SSIK3 | 154       | 2,43      | 1,796          | 1,475     | ,195       | 1,572     | ,389       |
| SEMS1 | 154       | 3,62      | 1,517          | ,353      | ,195       | -,438     | ,389       |
| SEMS2 | 154       | 3,58      | 1,503          | ,281      | ,195       | -,472     | ,389       |
| SEMS3 | 154       | 3,55      | 1,601          | ,306      | ,195       | -,566     | ,389       |
| SEEF1 | 154       | 3,63      | 1,637          | ,160      | ,195       | -,893     | ,389       |
| SEEF2 | 154       | 3,84      | 1,639          | ,021      | ,195       | -,856     | ,389       |
| SEEF3 | 154       | 3,66      | 1,639          | -,046     | ,195       | -,641     | ,389       |
| SFCO1 | 154       | 3,42      | 1,763          | ,232      | ,195       | -1,051    | ,389       |
| SFCO2 | 154       | 3,80      | 1,776          | ,068      | ,195       | -1,005    | ,389       |
| SFCO3 | 154       | 3,88      | 1,665          | -,027     | ,195       | -,734     | ,389       |
| SEEE1 | 154       | 2,81      | 1,645          | ,763      | ,195       | -,428     | ,389       |
| SEEE2 | 154       | 3,30      | 1,764          | ,317      | ,195       | -,995     | ,389       |
| SEEE3 | 154       | 2,79      | 1,656          | ,599      | ,195       | -,727     | ,389       |
| SSAL1 | 154       | 3,61      | 1,701          | ,071      | ,195       | -1,006    | ,389       |
| SSAL2 | 154       | 2,94      | 1,671          | ,632      | ,195       | -,400     | ,389       |
| SSAL3 | 154       | 2,62      | 1,500          | ,677      | ,195       | -,220     | ,389       |
| SSES1 | 154       | 2,48      | 1,438          | ,848      | ,195       | ,203      | ,389       |
| SSES2 | 154       | 2,47      | 1,531          | ,859      | ,195       | -,185     | ,389       |
| SSES3 | 154       | 2,51      | 1,552          | ,758      | ,195       | -,464     | ,389       |
| SMC1  | 154       | 3,50      | 1,505          | ,630      | ,195       | -,245     | ,389       |
| SMC2  | 154       | 3,48      | 1,573          | ,537      | ,195       | -,505     | ,389       |
| STC1  | 154       | 3,64      | 1,691          | ,324      | ,195       | -,790     | ,389       |
| STC2  | 154       | 3,64      | 1,842          | ,341      | ,195       | -1,042    | ,389       |
| SSC1  | 154       | 4,98      | 1,619          | -,427     | ,195       | -,844     | ,389       |
| SSC2  | 154       | 4,76      | 1,637          | -,376     | ,195       | -,879     | ,389       |
| SLC1  | 154       | 5,12      | 1,546          | -,617     | ,195       | -,513     | ,389       |
| SLC2  | 154       | 5,06      | 1,507          | -,541     | ,195       | -,475     | ,389       |
| SCE1  | 154       | 4,52      | 1,610          | -,155     | ,195       | -,825     | ,389       |
| SCE2  | 154       | 5,12      | 1,551          | -,624     | ,195       | -,436     | ,389       |
| SFR1  | 154       | 4,92      | 1,540          | -,444     | ,195       | -,512     | ,389       |
| SFR2  | 154       | 4,83      | 1,583          | -,419     | ,195       | -,663     | ,389       |
| SSR1  | 154       | 3,85      | 1,800          | ,015      | ,195       | -1,071    | ,389       |
| SSR2  | 154       | 3,54      | 1,872          | ,244      | ,195       | -1,061    | ,389       |

|                    |     |      |       |       |      |        |      |
|--------------------|-----|------|-------|-------|------|--------|------|
| SSO1               | 154 | 4,29 | 1,825 | -,233 | ,195 | -,984  | ,389 |
| SSO2               | 154 | 4,41 | 1,631 | -,225 | ,195 | -,737  | ,389 |
| SPR1               | 154 | 4,13 | 1,853 | ,001  | ,195 | -1,106 | ,389 |
| SPR2               | 154 | 3,82 | 1,812 | ,185  | ,195 | -,969  | ,389 |
| SPR3               | 154 | 3,74 | 1,853 | ,169  | ,195 | -1,070 | ,389 |
| SCO1               | 154 | 3,32 | 2,067 | ,366  | ,195 | -1,253 | ,389 |
| SCO2               | 154 | 3,28 | 1,928 | ,328  | ,195 | -1,130 | ,389 |
| SCO3               | 154 | 3,21 | 1,912 | ,409  | ,195 | -1,106 | ,389 |
| SCO4               | 154 | 3,05 | 1,928 | ,595  | ,195 | -,863  | ,389 |
| SBCF1              | 154 | 3,82 | 2,293 | ,096  | ,195 | -1,571 | ,389 |
| SBCF2 rev.coded    | 154 | 4,59 | 2,216 | -,555 | ,195 | -1,219 | ,389 |
| SBCF3              | 154 | 3,68 | 2,171 | ,110  | ,195 | -1,461 | ,389 |
| SII1               | 154 | 2,83 | 2,219 | ,892  | ,195 | -,796  | ,389 |
| SII2               | 154 | 2,80 | 2,247 | ,906  | ,195 | -,791  | ,389 |
| SII3               | 154 | 2,81 | 2,246 | ,888  | ,195 | -,810  | ,389 |
| Valid N (listwise) | 154 |      |       |       |      |        |      |

**Table 31. Descriptive Statistics – Investment funds**

|       | N         | Mean      | Std. Deviation | Skewness  |            | Kurtosis  |            |
|-------|-----------|-----------|----------------|-----------|------------|-----------|------------|
|       | Statistic | Statistic | Statistic      | Statistic | Std. Error | Statistic | Std. Error |
| FSIK1 | 154       | 3,30      | 2,226          | ,784      | ,195       | -,475     | ,389       |
| FSIK2 | 154       | 3,81      | 2,202          | ,381      | ,195       | -,934     | ,389       |
| FSIK3 | 154       | 1,93      | 1,348          | 2,027     | ,195       | 4,573     | ,389       |
| FEMS1 | 154       | 3,61      | 1,634          | ,247      | ,195       | -,843     | ,389       |
| FEMS2 | 154       | 3,47      | 1,560          | ,389      | ,195       | -,661     | ,389       |
| FEMS3 | 154       | 3,42      | 1,596          | ,437      | ,195       | -,620     | ,389       |
| FEEF1 | 154       | 3,58      | 1,664          | ,174      | ,195       | -,841     | ,389       |
| FEEF2 | 154       | 3,45      | 1,625          | ,281      | ,195       | -,612     | ,389       |
| FEEF3 | 154       | 3,61      | 1,705          | ,073      | ,195       | -1,060    | ,389       |
| FFCO1 | 154       | 3,55      | 1,934          | ,247      | ,195       | -1,224    | ,389       |
| FFCO2 | 154       | 4,19      | 1,844          | -,189     | ,195       | -1,157    | ,389       |
| FFCO3 | 154       | 4,30      | 1,941          | -,261     | ,195       | -1,168    | ,389       |
| FEEE1 | 154       | 2,44      | 1,551          | 1,077     | ,195       | ,495      | ,389       |
| FEEE2 | 154       | 2,66      | 1,523          | ,836      | ,195       | ,035      | ,389       |
| FEEE3 | 154       | 2,25      | 1,435          | 1,293     | ,195       | 1,367     | ,389       |
| FSAL1 | 154       | 3,32      | 1,864          | ,326      | ,195       | -1,081    | ,389       |
| FSAL2 | 154       | 2,72      | 1,659          | ,898      | ,195       | -,041     | ,389       |
| FSAL3 | 154       | 2,48      | 1,564          | 1,188     | ,195       | ,824      | ,389       |
| FSES1 | 154       | 2,23      | 1,480          | 1,465     | ,195       | 1,764     | ,389       |

|                    |     |      |       |       |      |        |      |
|--------------------|-----|------|-------|-------|------|--------|------|
| FSES2              | 154 | 2,00 | 1,319 | 1,647 | ,195 | 2,693  | ,389 |
| FSES3              | 154 | 2,01 | 1,328 | 1,569 | ,195 | 2,286  | ,389 |
| FMC1               | 154 | 3,76 | 1,551 | ,281  | ,195 | -,700  | ,389 |
| FMC2               | 154 | 3,79 | 1,621 | ,316  | ,195 | -,846  | ,389 |
| FTC1               | 154 | 3,12 | 1,622 | ,710  | ,195 | -,282  | ,389 |
| FTC2               | 154 | 3,08 | 1,786 | ,785  | ,195 | -,421  | ,389 |
| FSC1               | 154 | 4,06 | 1,846 | ,080  | ,195 | -1,059 | ,389 |
| FSC2               | 154 | 4,21 | 1,748 | ,012  | ,195 | -1,069 | ,389 |
| FLC1               | 154 | 4,42 | 1,737 | -,155 | ,195 | -1,065 | ,389 |
| FLC2               | 154 | 4,42 | 1,714 | -,197 | ,195 | -,968  | ,389 |
| FCE1               | 154 | 3,90 | 1,828 | ,224  | ,195 | -1,097 | ,389 |
| FCE2               | 154 | 4,14 | 1,887 | ,016  | ,195 | -1,224 | ,389 |
| FFR1               | 154 | 4,40 | 1,578 | -,112 | ,195 | -,896  | ,389 |
| FFR2               | 154 | 4,12 | 1,697 | ,073  | ,195 | -,913  | ,389 |
| FSR1               | 154 | 3,21 | 1,777 | ,530  | ,195 | -,777  | ,389 |
| FSR2               | 154 | 3,02 | 1,866 | ,705  | ,195 | -,654  | ,389 |
| FSO1               | 154 | 3,86 | 1,965 | ,139  | ,195 | -1,183 | ,389 |
| FSO2               | 154 | 4,25 | 1,835 | -,085 | ,195 | -1,032 | ,389 |
| FPR1               | 154 | 3,47 | 1,954 | ,382  | ,195 | -1,109 | ,389 |
| FPR2               | 154 | 3,27 | 1,858 | ,558  | ,195 | -,799  | ,389 |
| FPR3               | 154 | 3,14 | 1,903 | ,684  | ,195 | -,772  | ,389 |
| FCO1               | 154 | 3,48 | 2,118 | ,245  | ,195 | -1,366 | ,389 |
| FCO2               | 154 | 3,49 | 2,014 | ,241  | ,195 | -1,261 | ,389 |
| FCO3               | 154 | 3,27 | 2,017 | ,400  | ,195 | -1,180 | ,389 |
| FCO4               | 154 | 3,20 | 1,995 | ,399  | ,195 | -1,201 | ,389 |
| FBCF1              | 154 | 3,76 | 2,278 | ,096  | ,195 | -1,538 | ,389 |
| FBCF2 rev. coded   | 154 | 4,53 | 2,215 | -,445 | ,195 | -1,319 | ,389 |
| FBCF3              | 154 | 3,77 | 2,249 | ,086  | ,195 | -1,530 | ,389 |
| FII1               | 154 | 2,72 | 2,174 | ,957  | ,195 | -,619  | ,389 |
| FII2               | 154 | 2,76 | 2,244 | ,914  | ,195 | -,766  | ,389 |
| FII3               | 154 | 2,73 | 2,230 | ,919  | ,195 | -,766  | ,389 |
| Valid N (listwise) | 154 |      |       |       |      |        |      |



### Appendix 5: Group mean differences by prior investment experience

**Table 32.** Group mean differences by investment experience (stocks)

|                | Investment experience | N   | Mean   | Std. Deviation | Std. Error Mean |
|----------------|-----------------------|-----|--------|----------------|-----------------|
| SECON          | Yes                   | 115 | 3,7942 | 1,40909        | ,13140          |
|                | No                    | 39  | 3,0342 | 1,43636        | ,23000          |
| SFUNC          | Yes                   | 115 | 4,0304 | 1,61719        | ,15080          |
|                | No                    | 39  | 3,2821 | 1,50348        | ,24075          |
| SEMOT          | Yes                   | 115 | 3,1333 | 1,61366        | ,15047          |
|                | No                    | 39  | 2,4701 | 1,32170        | ,21164          |
| SEFFORT        | Yes                   | 115 | 4,7413 | 1,40133        | ,13068          |
|                | No                    | 39  | 5,4487 | 1,36952        | ,21930          |
| SFINANCIAL     | Yes                   | 115 | 4,7870 | 1,45858        | ,13601          |
|                | No                    | 39  | 5,1410 | 1,55152        | ,24844          |
| SSOURCE        | Yes                   | 115 | 4,1522 | 1,61024        | ,15016          |
|                | No                    | 39  | 4,9359 | 1,52255        | ,24380          |
| SPSYCH         | Yes                   | 115 | 3,7522 | 1,77627        | ,16564          |
|                | No                    | 39  | 4,4744 | 1,66603        | ,26678          |
| SSIK           | Yes                   | 115 | 3,7768 | 1,87042        | ,17442          |
|                | No                    | 39  | 2,4615 | 1,41549        | ,22666          |
| SCOMPATIBILITY | Yes                   | 115 | 3,4957 | 1,92228        | ,17925          |
|                | No                    | 39  | 2,1795 | 1,29008        | ,20658          |
| SBCF           | Yes                   | 115 | 4,1391 | 2,04719        | ,19090          |
|                | No                    | 39  | 2,6154 | 1,78245        | ,28542          |
| SII            | Yes                   | 115 | 3,3522 | 2,32074        | ,21641          |
|                | No                    | 39  | 1,2308 | ,52373         | ,08386          |

**Table 33.** Independent samples T-test (stocks)

|                    |                                | Levene's Test for<br>Equality of Variances |      | t-test for Equality of Means |         |                 |
|--------------------|--------------------------------|--|------|------------------------------|---------|-----------------|
|                    |                                | F  | Sig. | t                            | df      | Sig. (2-tailed) |
| SECON              | Equal variances assumed        | ,394                                       | ,531 | 2,897                        | 152     | ,004            |
|                    | Equal variances not<br>assumed |  |      | 2,869                        | 64,560  | ,006            |
| SFUNC              | Equal variances assumed        | ,003                                       | ,960 | 2,541                        | 152     | ,012            |
|                    | Equal variances not<br>assumed |  |      | 2,634                        | 70,074  | ,010            |
| SEMOT              | Equal variances assumed        | 1,875                                      | ,173 | 2,315                        | 152     | ,022            |
|                    | Equal variances not<br>assumed |  |      | 2,554                        | 79,368  | ,013            |
| SEFFORT            | Equal variances assumed        | ,286                                       | ,593 | -2,740                       | 152     | ,007            |
|                    | Equal variances not<br>assumed |  |      | -2,771                       | 66,962  | ,007            |
| SFINANCIAL         | Equal variances assumed        | ,497                                       | ,482 | -1,289                       | 152     | ,199            |
|                    | Equal variances not<br>assumed |  |      | -1,250                       | 62,326  | ,216            |
| SSOURCE            | Equal variances assumed        | ,628                                       | ,429 | -2,662                       | 152     | ,009            |
|                    | Equal variances not<br>assumed |  |      | -2,737                       | 68,987  | ,008            |
| SPSYCH             | Equal variances assumed        | ,026                                       | ,872 | -2,228                       | 152     | ,027            |
|                    | Equal variances not<br>assumed |  |      | -2,300                       | 69,502  | ,024            |
| SSIK               | Equal variances assumed        | 7,715                                      | ,006 | 4,015                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 4,599                        | 86,248  | ,000            |
| SCOMPATIB<br>ILITY | Equal variances assumed        | 13,667                                     | ,000 | 3,978                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 4,812                        | 98,209  | ,000            |
| SBCF               | Equal variances assumed        | 1,625                                      | ,204 | 4,144                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 4,438                        | 74,625  | ,000            |
| SII                | Equal variances assumed        | 125,737                                    | ,000 | 5,648                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 9,140                        | 141,254 | ,000            |

|                    |                                | t-test for Equality of Means |                          |  |         |
|--------------------|--------------------------------|------------------------------|--------------------------|--|---------|
|                    |                                | Mean<br>Difference           | Std. Error<br>Difference | 95% Confidence Interval of the<br>Difference |         |
|                    |                                |                              |                          | Lower  | Upper   |
|                    |                                |                              |                          |  |         |
| SECON              | Equal variances assumed        | ,76001                       | ,26238                   | ,24163                                       | 1,27840 |
|                    | Equal variances not<br>assumed | ,76001                       | ,26489                   | ,23093                                       | 1,28910 |
| SFUNC              | Equal variances assumed        | ,74838                       | ,29454                   | ,16646                                       | 1,33031 |
|                    | Equal variances not<br>assumed | ,74838                       | ,28408                   | ,18181                                       | 1,31496 |
| SEMOT              | Equal variances assumed        | ,66325                       | ,28645                   | ,09731                                       | 1,22918 |
|                    | Equal variances not<br>assumed | ,66325                       | ,25968                   | ,14640                                       | 1,18009 |
| SEFFORT            | Equal variances assumed        | -,70741                      | ,25821                   | -1,21755                                     | -,19727 |
|                    | Equal variances not<br>assumed | -,70741                      | ,25528                   | -1,21696                                     | -,19787 |
| SFINANCIAL         | Equal variances assumed        | -,35407                      | ,27468                   | -,89676                                      | ,18862  |
|                    | Equal variances not<br>assumed | -,35407                      | ,28324                   | -,92019                                      | ,21205  |
| SSOURCE            | Equal variances assumed        | -,78372                      | ,29440                   | -1,36537                                     | -,20208 |
|                    | Equal variances not<br>assumed | -,78372                      | ,28633                   | -1,35494                                     | -,21250 |
| SPSYCH             | Equal variances assumed        | -,72219                      | ,32416                   | -1,36263                                     | -,08174 |
|                    | Equal variances not<br>assumed | -,72219                      | ,31402                   | -1,34855                                     | -,09582 |
| SSIK               | Equal variances assumed        | 1,31527                      | ,32756                   | ,66812                                       | 1,96243 |
|                    | Equal variances not<br>assumed | 1,31527                      | ,28600                   | ,74675                                       | 1,88380 |
| SCOMPATIB<br>ILITY | Equal variances assumed        | 1,31616                      | ,33083                   | ,66255                                       | 1,96978 |
|                    | Equal variances not<br>assumed | 1,31616                      | ,27351                   | ,77341                                       | 1,85892 |
| SBCF               | Equal variances assumed        | 1,52375                      | ,36770                   | ,79729                                       | 2,25020 |
|                    | Equal variances not<br>assumed | 1,52375                      | ,34338                   | ,83965                                       | 2,20785 |
| SII                | Equal variances assumed        | 2,12140                      | ,37557                   | 1,37939                                      | 2,86342 |
|                    | Equal variances not<br>assumed | 2,12140                      | ,23209                   | 1,66258                                      | 2,58023 |

**Table 34.** Group mean differences by investment experience (funds)

|                    | Investment<br>experience | N   | Mean   | Std. Deviation | Std. Error Mean |
|--------------------|--------------------------|-----|--------|----------------|-----------------|
| FECON              | Yes                      | 115 | 3,7420 | 1,48682        | ,13865          |
|                    | No                       | 39  | 2,9402 | 1,32204        | ,21170          |
| FFUNC              | Yes                      | 115 | 4,6043 | 1,68650        | ,15727          |
|                    | No                       | 39  | 3,1923 | 1,49391        | ,23922          |
| FEMOT              | Yes                      | 115 | 2,5971 | 1,51052        | ,14086          |
|                    | No                       | 39  | 2,0085 | 1,06372        | ,17033          |
| FEFFORT            | Yes                      | 115 | 3,8283 | 1,65048        | ,15391          |
|                    | No                       | 39  | 5,0321 | 1,36591        | ,21872          |
| FFINANCIAL         | Yes                      | 115 | 4,1478 | 1,52461        | ,14217          |
|                    | No                       | 39  | 4,6026 | 1,69045        | ,27069          |
| FSOURCE            | Yes                      | 115 | 3,8087 | 1,77282        | ,16532          |
|                    | No                       | 39  | 4,7821 | 1,57194        | ,25171          |
| FPSYCH             | Yes                      | 115 | 3,0435 | 1,72006        | ,16040          |
|                    | No                       | 39  | 4,0641 | 1,98739        | ,31824          |
| FSIK               | Yes                      | 115 | 3,3507 | 1,77915        | ,16591          |
|                    | No                       | 39  | 2,0085 | 1,30784        | ,20942          |
| FCOMPATIB<br>ILITY | Yes                      | 115 | 3,7783 | 1,95474        | ,18228          |
|                    | No                       | 39  | 2,0769 | 1,22226        | ,19572          |
| FBCF               | Yes                      | 115 | 4,2348 | 2,16564        | ,20195          |
|                    | No                       | 39  | 2,3718 | 1,62512        | ,26023          |
| FII                | Yes                      | 115 | 3,2609 | 2,29640        | ,21414          |
|                    | No                       | 39  | 1,2051 | ,46901         | ,07510          |

**Table 35.** Independent samples T-test (funds)

|                    |                                | Levene's Test for<br>Equality of Variances |      | t-test for Equality of Means |         |                 |
|--------------------|--------------------------------|--|------|------------------------------|---------|-----------------|
|                    |                                | F  | Sig. | t                            | df      | Sig. (2-tailed) |
| FECON              | Equal variances assumed        | 2,996                                      | ,086 | 2,990                        | 152     | ,003            |
|                    | Equal variances not<br>assumed |  |      | 3,169                        | 73,107  | ,002            |
| FFUNC              | Equal variances assumed        | 1,999                                      | ,159 | 4,645                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 4,932                        | 73,377  | ,000            |
| FEMOT              | Equal variances assumed        | 5,198                                      | ,024 | 2,249                        | 152     | ,026            |
|                    | Equal variances not<br>assumed |  |      | 2,663                        | 93,213  | ,009            |
| FEFFORT            | Equal variances assumed        | 1,417                                      | ,236 | -4,101                       | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | -4,501                       | 78,530  | ,000            |
| FFINANCIAL         | Equal variances assumed        | 2,171                                      | ,143 | -1,565                       | 152     | ,120            |
|                    | Equal variances not<br>assumed |  |      | -1,487                       | 60,326  | ,142            |
| FSOURCE            | Equal variances assumed        | 1,199                                      | ,275 | -3,045                       | 152     | ,003            |
|                    | Equal variances not<br>assumed |  |      | -3,232                       | 73,306  | ,002            |
| FPSYCH             | Equal variances assumed        | 4,675                                      | ,032 | -3,076                       | 152     | ,002            |
|                    | Equal variances not<br>assumed |  |      | -2,864                       | 58,500  | ,006            |
| FSIK               | Equal variances assumed        | 13,105                                     | ,000 | 4,327                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 5,024                        | 88,982  | ,000            |
| FCOMPATIB<br>ILITY | Equal variances assumed        | 20,453                                     | ,000 | 5,101                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 6,361                        | 105,943 | ,000            |
| FBCF               | Equal variances assumed        | 10,198                                     | ,002 | 4,919                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 5,656                        | 87,031  | ,000            |
| FII                | Equal variances assumed        | 110,167                                    | ,000 | 5,540                        | 152     | ,000            |
|                    | Equal variances not<br>assumed |  |      | 9,059                        | 137,527 | ,000            |

|                    |                                | t-test for Equality of Means |                          |  |         |
|--------------------|--------------------------------|------------------------------|--------------------------|--|---------|
|                    |                                | Mean<br>Difference           | Std. Error<br>Difference | 95% Confidence Interval of the<br>Difference |         |
|                    |                                |                              |                          | Lower  | Upper   |
|                    |                                |                              |                          |  |         |
| FECON              | Equal variances assumed        | ,80186                       | ,26820                   | ,27197                                       | 1,33175 |
|                    | Equal variances not<br>assumed | ,80186                       | ,25306                   | ,29753                                       | 1,30619 |
| FFUNC              | Equal variances assumed        | 1,41204                      | ,30398                   | ,81146                                       | 2,01262 |
|                    | Equal variances not<br>assumed | 1,41204                      | ,28628                   | ,84153                                       | 1,98255 |
| FEMOT              | Equal variances assumed        | ,58855                       | ,26167                   | ,07157                                       | 1,10554 |
|                    | Equal variances not<br>assumed | ,58855                       | ,22103                   | ,14965                                       | 1,02746 |
| FEFFORT            | Equal variances assumed        | -1,20379                     | ,29354                   | -1,78374                                     | -,62384 |
|                    | Equal variances not<br>assumed | -1,20379                     | ,26744                   | -1,73618                                     | -,67141 |
| FFINANCIAL         | Equal variances assumed        | -,45474                      | ,29050                   | -1,02868                                     | ,11920  |
|                    | Equal variances not<br>assumed | -,45474                      | ,30575                   | -1,06627                                     | ,15679  |
| FSOURCE            | Equal variances assumed        | -,97336                      | ,31961                   | -1,60480                                     | -,34191 |
|                    | Equal variances not<br>assumed | -,97336                      | ,30114                   | -1,57349                                     | -,37322 |
| FPSYCH             | Equal variances assumed        | -1,02062                     | ,33181                   | -1,67618                                     | -,36507 |
|                    | Equal variances not<br>assumed | -1,02062                     | ,35637                   | -1,73385                                     | -,30739 |
| FSIK               | Equal variances assumed        | 1,34218                      | ,31016                   | ,72940                                       | 1,95496 |
|                    | Equal variances not<br>assumed | 1,34218                      | ,26718                   | ,81130                                       | 1,87305 |
| FCOMPATIB<br>ILITY | Equal variances assumed        | 1,70134                      | ,33350                   | 1,04244                                      | 2,36024 |
|                    | Equal variances not<br>assumed | 1,70134                      | ,26745                   | 1,17108                                      | 2,23160 |
| FBCF               | Equal variances assumed        | 1,86299                      | ,37875                   | 1,11470                                      | 2,61128 |
|                    | Equal variances not<br>assumed | 1,86299                      | ,32940                   | 1,20828                                      | 2,51769 |
| FII                | Equal variances assumed        | 2,05574                      | ,37107                   | 1,32262                                      | 2,78886 |
|                    | Equal variances not<br>assumed | 2,05574                      | ,22693                   | 1,60702                                      | 2,50446 |