

# **The Delegation of Investor Decision Making: What Drives Participants in Social Trading Networks to Engage in Copy Trading**

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## **ABSTRACT**

*This study analyses existing literature to identify what drives participants in social trading networks to engage in copy trading. A concept-centric review of literature extracts recurring, relevant concepts and builds insights used to inform an Investor Engagement Framework which models the drivers of investor engagement in copy trading. It is considered that the underlying drivers of the Technology Acceptance Model alone aren't adequate in describing what drives social trading participants to engage in copy trading. The addition of affect-based signals and cognition-based signal augments the model to reflect trustworthiness in social trading networks. These results firstly outline that the Technology Acceptance Model needed to be extended when applied to the context of copy trading within social trading networks. Secondly, the results suggest that for a participant in a social trading network to engage in copy trading, the investor they copy must provide affect-based and cognition-based signals of trustworthiness.*

**Subjects:** Finance, Information Systems

## **INTRODUCTION**

Social trading networks are described by Wohlgemuth, Berger, and Wenzel (2016) as online communities in which investors can follow others and directly copy their investment decisions. The transparent nature of these networks has led to their quick growth in popularity (Glaser & Risius, 2018). Participants make investments based upon information gathered in online communities. Copy trading within these communities allows participants in the network to replicate others' trades (Doering, Neumann, & Paul, 2015). Copy trading investors are split into two separate categories: signal providers and followers. Signal providers are individual investors whose investment decisions are available for followers to track and analyse. Followers are also individual investors; however, they copy the investment decisions of signal providers. Copy trading allows for instant and automated replication of signal provider trades by followers; therefore this allows the delegation of the investment decision. Following signal providers allows followers to efficiently gather appropriate amounts of information in a cost-effective way. Essentially, by engaging in copy trading, investors avoid excessive analysis by identifying their preferred signal providers and copying their trades

(Oehler, Horn, & Wendt, 2016). This study builds a framework which models the intention of participants in social trading networks to engage in copy trading.

The framework is based on an analysis of literature, from different domains, which discuss online trading, the growth of social trading networks, and the adoption of copy trading among retail investors (Barber & Odean, 2001b, 2002; Berger, Wenzel, & Wohlgemuth, 2018; Doering et al., 2015; Konana & Balasubramanian, 2005; Wohlgemuth et al., 2016). The framework created in this study is referred to as the Investor Engagement Framework (IEF). Monsuwé, Dellaert, and De Ruyter's (2004) research in online consumers' adoption of e-commerce describes perceived utilitarian gains as *ease of use* and *usefulness* and describes perceived hedonic gains as *enjoyment*. This study builds on existing research, such as Konana and Balasubramanian (2005), which suggests that satisfaction among online investors is largely driven by perceived utilitarian gains and perceived hedonic gains. The framework in this study similarly categorises ease of use and usefulness with utilitarian gains and categorises enjoyment with hedonic gains to extend Davis (1989)'s Technology Acceptance Model (TAM) to the context of online investing. Analysing existing literature highlighted that the core constructs of TAM alone are, at times, not sufficient in modelling user acceptance (Pikkarainen *et al.*, 2004). This study's framework extends existing research by including signal provider trustworthiness (Wohlgemuth et al., 2016) as an extension of TAM in the context of copy trading. Signal provider trustworthiness is included as an exogenous factor to mediate the relationships between TAM's core constructs and investors' intentions to engage in copy trading.

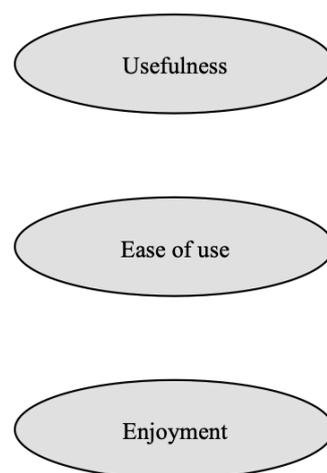
The next section of the paper presents the background literature that informed the study, examining the Technology Acceptance Model (TAM) which is used as an initial lens in this study. The next section addresses the methodology used to review and analyse relevant literature. Following that, the framework is introduced containing constructs that impact online investors' attitudes and intentions to engage in copy trading. The paper then describes usefulness, ease of use, and enjoyment as basic determinants of online investor intentions. The next section of the paper describes how signal provider trustworthiness mediates the relationship between usefulness, ease of use, and enjoyment and the intentions of online investors to engage in copy trading. The final section of the paper discusses the findings of the study, future research avenues, implications for researchers and implications for practitioners.

## BACKGROUND LITERATURE

This study's framework intends to illustrate online investors' intention to engage in copy trading through the lens of previous research on consumer adoption of new technologies. As described above, the core constructs of the framework are adapted from TAM (Davis, 1989). While TAM has been used generally as a method to gauge a user's willingness to accept emerging technology, previous literature has validated TAM as a predictor of technology adoption in the context of online investing (Balasubramanian, Konana, & Menon, 2003; Konana & Balasubramanian, 2005). Therefore, TAM constructs are considered to be appropriate as an initial basis for this study's framework.

TAM identifies two determinants, according to previous research, that play an important role in people's acceptance or rejection of information technology. The first determinant referred to as *perceived usefulness*, describes how people tend to use or not use an application to the extent that they believe it will help them improve performance. The second determinant referred to as *perceived ease of use* describes how an application that is easy to use is more likely to be accepted. Therefore, in addition to perceived usefulness, usage is theorized to be influenced by perceived ease of use. To align the core constructs of this study's framework with the core constructs of TAM, perceived usefulness is defined as the degree to which a person believes that using copy trading would enhance their online trading performance. Similarly perceived ease of use is defined as the degree to which a

person believes engaging in copy trading would be free of effort. Davis, Bagozzi, and Warshaw (1992) extend TAM with *enjoyment* as an additional basic determinant of technology user acceptance. This study's framework includes enjoyment as a core construct as per this more recent version of TAM. During the study, enjoyment is defined as the extent to which copy trading provides satisfaction among investors, despite any negative impacts on investment performance. In summary, the three basic determinants of user acceptance within this study's framework are perceived usefulness, perceived ease of use and enjoyment. Throughout this paper, these basic determinants will be referred to as the core constructs of the framework. Therefore, in a similar fashion to prior research based on online technology adoption (Konana & Balasubramanian, 2005; Monsuwé et al., 2004), this study's framework includes both utilitarian and hedonic basic determinants of investors' attitude towards copy trading. TAM core constructs are illustrated below in Figure 1. The remainder of this paper extends TAM by examining each core construct and identifying the corresponding underlying drivers in the context of copy trading.



*Figure 1. The Core Constructs of TAM*

TAM has been widely used, but it is not perfect. Over time its limitations have been recognised and researchers have adapted and added to it (Lee, Kozar and Larsen, 2003; Silva, 2007). The TAM model is derived from the Theory of Reasoned Action (Yousafzai, Foxall and Pallister, 2010) which assumes that individuals are reasoned in their decision making (Fishbein and Ajzen, 1975). Investors are not always rational and reasoned in their decision making tough, and research such as in the area of behavioural finance takes this into account (Park and Sohn, 2013). Behavioural finance assumes that individuals making investment decision are influenced in ways that may not be rational (Baker and Andersson, 2010). Specific to social trading, research has shown irrational or unexpected results regarding areas such as trust (Wohlgemuth, Berger and Wenzel, 2016).

The question arises then as to whether investors involved in copy trading, who may not be fully rational in their decision making, can be analysed using TAM or whether TAM will need to be adapted and extended.

## **LITERATURE REVIEW METHODOLOGY**

In order to complete a comprehensive literature review, this paper followed the guidelines and instructions of Webster and Watson (2002) on creating a concept-centric matrix. A concept centric matrix is a tool used to analyse the literature to show connections between research articles and to identify the main occurring themes or concepts. The concepts are relevant articles are displayed in a matrix.

The review specifically focuses on literature in the field of copy trading. The intention of this review is to propose a framework to accurately synthesize and extend the existing literature, shed light on avenues for future research, and ultimately provide practical implications within the area of copy trading. To fulfil this intention and provide a complete review of literature, concepts identified within existing literature are the focus of the study.

In order to identify the source material for the literature review, the major contributions from leading journals in the Information Systems field (generally referred to as the ‘basket of eight’ information systems journals – see <https://aisnet.org/page/SeniorScholarBasket>) were examined. This basket consists of the European Journal of Information Systems, Information Systems Journal, Information Systems Research, Journal of AIS, Journal of Information Technology, Journal of MIS, Journal of Strategic Information Systems, and MIS Quarterly. Within these journals, the table of contents were reviewed to identify and highlight articles within the scope of copy trading. From there, literature and journals from outside the information systems field were also examined and highlighted as important due to the interconnected nature of information systems with other disciplines. Journals such as European Financial Management, Journal of Business Research, Review of Financial Studies, Decision Support Systems, International Journal of Service Industry Management and Journal of Decision Sciences were also examined. In addition to the examination of each journal’s table of contents, academic databases were used to efficiently filter and identify relevant articles. The databases examined included EBSCO, ProQuest, Science Direct, JSTOR and SSRN.

### **Step 1. Investigation of Leading Journals and Journal Databases**

The first step in reviewing existing literature involved searching relevant, leading journals and journal databases (Melville, Kraemer, & Gurbaxani, 2004). The investigation of the basket of eight information systems journals used keywords to identify relevant articles (Hamari, Koivisto, & Sarsa, 2014). Searches were conducted in titles and abstracts of papers using the following keywords: ‘online investing’, ‘online investors’, ‘online platforms’, ‘social trading’, ‘social influence in trading’ and ‘copy trading’. Following the search through titles and abstracts, each journal’s table of content was examined to identify any relevant research not identified by the initial keyword search.

This was followed by an extended search using the same keywords outside the basket of eight and information systems field of literature. Searches were also conducted in titles and abstracts of papers using the following keywords: ‘online investing’, ‘online investors’, ‘online platforms’, ‘social trading’, ‘social influence in trading’ and ‘copy trading’. Following the search through titles and abstracts, each journal’s table of content was examined as per Webster and Watson (2002) to identify any relevant research not identified by the initial keyword search. The additional search through these journals allowed for the identification of additional literature relevant to copy trading. By searching this additional layer of journals, literature was found that allowed the review to more holistically synthesize existing literature within the boundaries of this study.

In total, following the searches of the basket of eight information systems journals and relevant additional journals mentioned above, 12 articles were identified within the field of copy trading. These 12 articles included only one article from within the basket of eight Information Systems journals. A

likely explanation for this is the relatively recent emergence of literature in the field of copy trading. The extended search for literature outside the basket of eight accounted for the other 11 relevant articles identified. Following the analysis of each article's abstract, keywords, or the full article when necessary, 3 articles were deemed to be outside the scope of the research and were therefore excluded. The exclusion of these articles resulted in a total of 8 articles deemed relevant for an in-depth review.

## **Step 2. Backward Review**

During this step, the citations in the articles identified in step 1 were reviewed to identify prior studies in the field of copy trading. Within these citations, the keywords: 'online investing', 'online investors', 'online platforms', 'social trading', 'social influence in trading' and 'copy trading' were once again used to identify relevant articles. Reviewing the citations of articles from step 1 facilitated the chronologically backwards investigation of articles within the scope of the review (Levy & Ellis, 2006). This identified the initial literature in the field of online investing and, more recently, copy trading. A further set of 18 articles from journals and conference proceedings other than those formally searched were collected. Each of these articles was reviewed in full.

## **Step 3. Forward Review**

The third and final step involved using the Web of Science and Google Scholar to identify studies that cite the key articles identified in steps 1 and 2. Articles identified were searched using the keywords: 'online investing', 'online investors', 'online platforms', 'social trading', 'social influence in trading' and 'copy trading' to further refine the relevant articles. Reviewing the articles that cite those from step 1 and 2 facilitated the chronologically forward investigation of articles within the scope of the review (Levy & Ellis, 2006). This identified the more recent literature within the field of copy trading. A further set of 7 articles from journals and conference proceedings other than those reviewed in steps 1 and 2 were identified. Each of these articles was reviewed in full. In total, the 3 steps resulted in the full review of a set of 33 articles.

As per Webster and Watson (2002)'s guidelines, a concept-centric matrix was created using concepts from all articles identified in each of the 3 steps. Articles were reviewed in full and corresponding concepts were grouped. Concepts were then segregated by unit of analysis to keep each concept relevant and within the scope of copy trading. Articles referenced were grouped by concept. The concepts identified are therefore the key concepts from existing literature. The concept-centric matrix is seen below in Figure 2, which illustrates *usefulness* as a concept derived from the review of existing literature in copy trading. The 4 articles referenced are grouped by the concept *usefulness*. This concept is then isolated by *imitation*, *return on investment* and *risk management* as units of analysis. Once new concepts were not being extracted during the review of relevant articles, the review was deemed to be nearing completion with a relatively complete account of the relevant literature (Webster & Watson, 2002). The table conveys the key findings and relationships from existing literature. Each element in the table is described further below.

Concepts	Unit of Analysis	Number of Citations	Papers
Usefulness	Imitation	3	(Wohlgemuth et al., 2016), (Pan, Altshuler, & Pentland, 2012), (Berger et al., 2018).
	Risk management	4	(Berger et al., 2018), (Sharpe, 1964), (Markowitz, 1952), (Fama & MacBeth, 1973).
	Return on investment	10	(Barney, 1991), (Peteraf, 1993), (Berger et al., 2018), (Grahovac & Miller, 2009), (Jonsson & Regnér, 2009), (Madhok, Li, & Priem, 2010), (Barber & Odean, 2000), (Barber & Odean, 2001b), (Barber & Odean, 2002), (Konana & Balasubramanian, 2005).
Ease of use	Transparency	5	(Glaser & Risius, 2018), (Stoughton, 1993)
	Experience level	5	(Barber & Odean, 2002), (Konana & Balasubramanian, 2005), (Singh, Sandhu, & Kundu, 2010), (Pentland, 2013), (Berger et al., 2018).
	Reduced overtrading	9	(Barber & Odean, 2000), (Barber & Odean, 2001b), (Barber & Odean, 2001a), (Barber & Odean, 2002), (Choi, Laibson, & Metrick, 2002) (Konana & Balasubramanian, 2005), (Anderson, 2007), (Berger et al., 2018), (Pelster, 2019).
	Reduced fees	6	(Barber & Odean, 2001b), (Konana & Balasubramanian, 2005), (Berger et al., 2018), (Glaser & Risius, 2018; Oehler et al., 2016), (Glaser & Risius, 2018), (Kromidha & Li, 2019).
Enjoyment	Self-attribution	4	(Konana & Balasubramanian, 2005), (Kahneman & Riepe, 1998), (Gervais & Odean, 2001), (Berger et al., 2018).
	Illusion of knowledge	4	(Konana & Balasubramanian, 2005), (Barber & Odean, 2001b), (Barber & Odean, 2002), (Glaser & Risius, 2018).
	Illusion of control	3	(Langer, 1975), (Konana & Balasubramanian, 2005), (Barber &

			Odean, 2002), (Barber & Odean, 2001b).
Signal provider trustworthiness	Cognition-based signals	3	(McAllister, 1995), (Doering et al., 2015), (Wohlgemuth et al., 2016).
	Affect-based signals	4	(McAllister, 1995), (Pan et al., 2012), (Wohlgemuth et al., 2016), (Mesch, 2012).

Figure 2. Concept-Centric Matrix

## INVESTOR ENGAGEMENT FRAMEWORK CORE CONSTRUCTS

This section of the paper intends to discuss copy trading through the lens of TAM's core constructs of usefulness, ease of use and enjoyment. Each core construct is defined, applied to the context of a certain system and broken down into separate subcomponents referred to as underlying drivers of the core construct.

### Underlying Drivers of Core Constructs

While TAM and its core constructs are generally applied to user acceptance of emerging technology, this study considers TAM's core constructs as determinants of investors' adoption of copy trading. The following sections address each core construct and the corresponding underlying drivers in this context.

#### *Usefulness*

Perceived usefulness, as identified by TAM, plays an important role in a user's acceptance or rejection of new technology. Davis (1989) describes perceived usefulness as the extent to which people believe technology "will help them perform their job better". In the context of this study usefulness is defined as the degree to which an investor believes that by engaging in copy trading, they will improve their investment performance and outcomes. In this study's framework, three underlying drivers of the usefulness construct are identified as: imitation, return on investment and risk management, as illustrated by Figure 3. The framework refers to these underlying drivers as key characteristics of usefulness in copy trading, each is explained separately below.

*Imitation* is facilitated by the copy trading functionality of social trading networks. Copy trading refers to "automatically, simultaneously, and unconditionally replicate other investors' trades" (Wohlgemuth et al., 2016, p. 1). This feature enables investors to imitate more experienced and competent investors

and benefit from more profitable opportunities (Pan et al., 2012). Copy trading also allows for investors to bypass typical transactional costs and costs in gathering information, thus making it very attractive and practical for less-experienced traders. By engaging in copy trading, inexperienced investors can

imitate other more experienced investors to realise higher returns from the beginning and subsequently develop knowledge and expertise (Berger et al., 2018). Enhancing investors' profitability through imitation aligns with the framework's definition of perceived usefulness in that imitation allows investors to enhance returns.

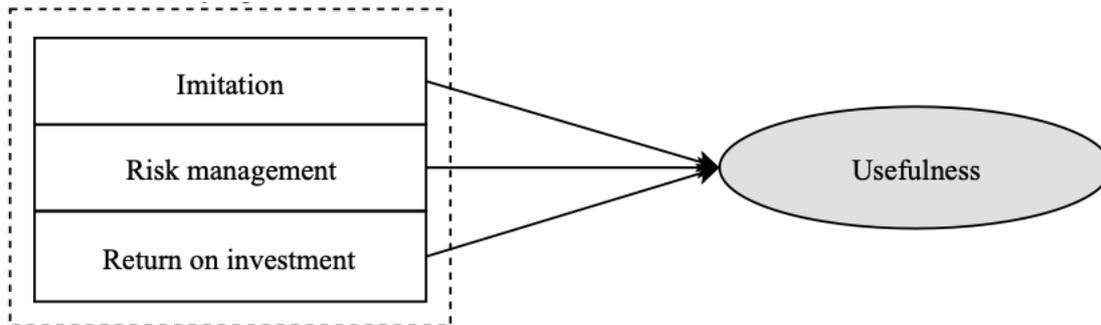


Figure 3. Usefulness Underlying Drivers

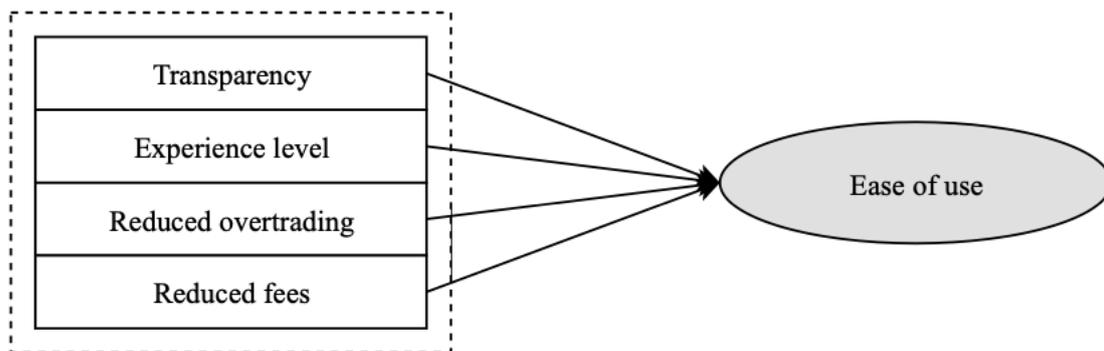
*Risk management* in copy trading is highlighted by Berger et al. (2018) as playing a primary role in explaining performance outcomes. In investment contexts, risk refers to the potential for deviation of returns from expected outcomes (Sharpe, 1964). Previous literature identifies diversification as a primary method of investment risk mitigation (Markowitz, 1952). In tailoring a portfolio to a particular risk appetite, investors' decisions are considered to be influenced by the risk-return trade-off of a particular investment (Fama & MacBeth, 1973). Berger et al. (2018) describe how investors can build portfolios diversified by imitated investors in accordance with their own objectives and risk appetite. Signal providers are assigned a risk score by the social trading platform to portray their risk exposure to imitators. Imitators can then choose to imitate signal providers with risk scores aligning with their own preferences. The research of Berger et al. (2018) solidifies the idea that by identifying signal providers with similar risk appetites, followers can achieve improved returns via imitation. Therefore, risk management in a copy trading context aligns with the framework's definition of usefulness as the investor believes that copy trading could improve risk management via the diversification of signal providers, enhancing portfolio performance.

*Return on investments* in copy trading is primarily influenced by the resource-based view as described by Berger et al. (2018). Barney (1991, p. 1) and Peteraf (1993)'s resource-based view suggests that uniqueness among firms allows for "sustained competitive advantage". Their research also points out that inimitable resources are likely to produce increased returns; therefore, if competitors can imitate these resources, equally improved returns are realised. Existing literature also points out the significant cost of emulating and rearranging resources as barriers to imitation (Jonsson and Regnér (2009). In the context of copy trading platforms, inexperienced investors can undermine these barriers to imitation by avoiding typical transactional costs and costs in gathering information when imitating more experienced investors' trades. Early research in online investing discusses how overtrading causes online investors to underperform more traditional investment strategies (Barber & Odean, 2000, 2001b, 2002; Konana & Balasubramanian, 2005). Copy trading offers a solution to these inexperienced online investors by neutralising their lack of experience via imitation and realising returns comparable to those of more competent investors (Berger et al., 2018). This aligns with the framework's definition of usefulness in that by engaging in copy trading, investors can enhance their returns.

In summary, imitation, risk management and return on investment are enhanced by copy trading according to previous literature. This study's framework defines usefulness as the degree to which an online investor can enhance their investment performance. By incorporating the analysis of existing literature on online investing and copy trading, the framework suggests that imitation, risk management and return on investments are the foundational underlying drivers of perceived usefulness among investors in copy trading.

### ***Ease of use***

Perceived ease of use, as identified by TAM, plays an important role in a user's acceptance or rejection of new technology and is defined in this study as the ease with which investors can copy trades and realise improved returns. In this study's framework, four underlying dimensions of the ease of use core construct are identified and included: transparency (Glaser & Risius, 2018), experience level (Balasubramanian et al., 2003; Berger et al., 2018), reduced overtrading (Anderson, 2006; Barber & Odean, 2000; Choi et al., 2002) and reduced fees (Barber & Odean, 2001b; Berger et al., 2018; Glaser & Risius, 2018; Konana & Balasubramanian, 2005; Kromidha & Li, 2019; Oehler et al., 2016) as illustrated by Figure 4. The framework refers to these underlying drivers as key characteristics of ease of use in online copy trading; each is described separately below.



*Figure 4. Ease of Use Underlying Drivers*

*Transparent* social trading networks are becoming increasingly relevant as disintermediating platforms. Signal provider transparency in these networks combined with automated and immediate replication of their decisions allows for extensive control over investments (Glaser & Risius, 2018). The study of Stoughton (1993) highlights the bias of investment managers in prioritising their own profits over the underlying investor. A fundamental difference of copy trading to traditional investment manager-client relationships is the degree of transparency regarding signal provider decisions. In traditional delegated portfolio management, investors receive periodic updates on returns. Copy trading in comparison is fully transparent in that investors can see every decision made by signal providers in real-time. Due to the visibility of signal provider performance, followers can identify more competent investors with more conservative approaches, and in doing so, increasing their chance of improved returns (Glaser & Risius, 2018). The degree of transparency in copy trading platforms allows investors to easily choose a signal provider based on the information available, aligning with the framework's core construct, ease of use.

In terms of online investors' *experience level*, Barber and Odean (2002) point out that the democratization of information online means investors have access to data similar to investment

professionals; however, a clear disparity with regard to experience level exists. Their study goes on to point out that the more overconfident an investor is, the more likely they are to overstate their experience level and ultimately the more likely they are to begin investing online. Overconfidence is then highlighted among these online investors who trade excessively resulting in subpar returns. The study ultimately suggests that rational investors would not engage in overtrading. Konana and Balasubramanian (2005) describe how, traditionally, competent brokers with superior knowledge are used to manage investments. Their study also identifies that overconfidence is evident among inexperienced investors; however, this overconfidence is corrected by experience. The work of Singh et al. (2010) highlights a disparity in experience level between adopters and non-adopters of investing online. However, the study goes on to identify that younger investors value information obtained online more than older, more experienced, investors. Ultimately, the study finds that inexperienced investors are more likely to adopt online investing. Existing research after the emergence of copy trading, such as Pentland (2013)'s study of the social trading platform eToro, reveals that followers who imitate investors with diversified portfolios can achieve higher returns. This finding highlights that imitation can allow average or inexperienced investors to realise improved and in some cases above-average returns. Berger et al. (2018) further consolidate this finding by presenting empirical evidence that inexperienced investors can achieve returns comparable to those of experienced investors. Therefore the disparity in experience levels among online investors identified by Barber and Odean (2002), Konana and Balasubramanian (2005) and Singh et al. (2010) is somewhat bridged by copy trading and improved returns are realised with relatively lower levels of effort aligning with this framework's core construct of usefulness.

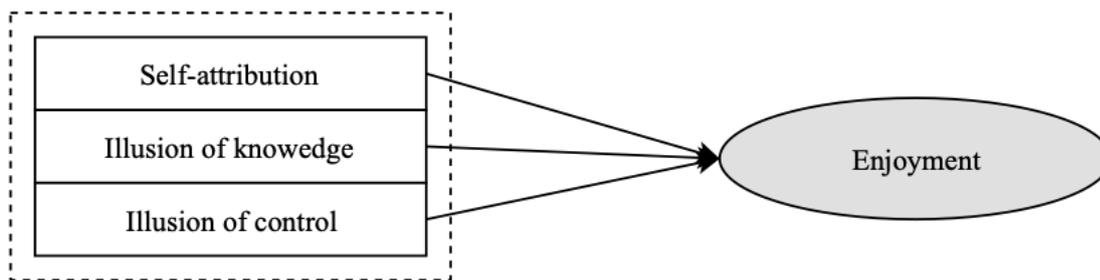
*Overtrading* as described above is a destructive attribute of overconfident online investors who trade excessively and therefore reduce returns (Anderson, 2007; Barber & Odean, 2000, 2001a, 2001b, 2002; Choi et al., 2002; Konana & Balasubramanian, 2005). Online investing reduces traditional costs associated with liquidity, transactions and commissions. However, Barber and Odean (2002) identify that increased speculation among investors online offsets these cost reductions. These speculative losses are a result of overconfident, irrational, investors. Copy trading has the potential to neutralise this irrationality. This is pointed out by the research of Berger et al. (2018) who propose that less competent, excessive traders can imitate more rational and competent traders, resulting in improved returns. The findings of Pelster (2019) highlight attention from peers and an increase in followers results in an increase in trading volumes; however, these volumes decrease in time. In summary, by identifying rational and more competent investors, less rational and less competent investors can delegate their decisions to signal providers and to a certain extent, reduce irrational overtrading. This reduction in irrational overtrading via copy trading requires a lower level of effort from investors to realise higher returns, aligning with this framework's core construct, usefulness.

*Reduced fees* are pointed out in early online investing literature by Barber and Odean (2001b) and Konana and Balasubramanian (2005) as a benefit for investors using disintermediated online platforms that significantly reduce the cost of executing trades and gathering investment information. However, overtrading stems partially from these reduced costs which, while lower per transaction, can accumulate with increased trading volume (Barber & Odean, 2001a). Copy trading has been identified as a method for less competent investors to imitate more rational investors and, therefore, reduce irrational overtrading (Berger et al., 2018) and reduce costs accumulated from increased trading volume. In combination with rational trading volumes reducing costs, recent literature focusing on copy trading highlights cost efficiency with regard to transactions and acquiring information via copy trading (Glaser & Risius, 2018; Oehler et al., 2016). This observation is reiterated by Berger et al. (2018) who point out that costs in transacting and gathering information are incurred by the signal provider, not the follower. Kromidha and Li (2019) highlight the low cost of choosing between alternative signal providers. Generally, copy trading has proven to be cost-effective and free of significant effort relative to traditional investing. This aligns with the framework's core construct of usefulness.

In summary, based on an analysis of previous literature, copy trading’s increased transparency, reduction of fees and reduction of overtrading among inexperienced investors allows for an investing experience that generally requires less effort than traditional methods. This study’s framework defines ease of use as the ease with which investors can copy trades and realise improved returns as per TAM. By incorporating the analysis of existing literature on online investing and copy trading, the framework posits that transparency, experience level, reduced overtrading and reduced fees are the foundational underlying drivers of perceived ease of use among investors in copy trading.

### **Enjoyment**

Enjoyment is an extension of TAM identified by Davis et al. (1992) which acts as an additional basic determinant of a user’s acceptance or rejection of new technology. Enjoyment is defined during this study as the extent to which copy trading provides satisfaction among investors, despite any negative impacts on investment performance. In this study’s framework, three underlying dimensions of the enjoyment core construct are identified and included: self-attribution, illusion of knowledge, and illusion of control (Anderson, 2006; Barber & Odean, 2000, 2001b, 2002; Konana & Balasubramanian, 2005; Looney, Valacich, Todd, & Morris, 2006; Uchida, 2006; Unsal & Movassaghi, 2001) as illustrated by Figure 5.



*Figure 5. Enjoyment Underlying Drivers*

The framework refers to these underlying drivers as key characteristics of enjoyment for copy trading. Each is described separately below.

*Self-attribution* is evident when investors attribute decisions with positive outcomes to themselves, and negative outcomes elsewhere (Konana & Balasubramanian, 2005). The applicability of self-attribution to online investing is particularly evident with investors using traditional brokers. The perceived competence and experience levels of brokers result in an assumption among investors that broker decisions are well informed (Kahneman & Riepe, 1998). Volatility in financial markets can result in undesirable broker decisions; in this case, self-attribution is evident when investors assign the responsibility of their losses to a broker (Konana & Balasubramanian, 2005). Gervais and Odean (2001) find that investors often relate their own insights to increased returns and as a result recognise failures less and overemphasise successes. Konana and Balasubramanian (2005) go on to point out that investors exaggerate the quality of their own decisions due to the vast amount of information available online. Ultimately this allows for investors to overemphasise decisions with positive outcomes and relieve decisions with negative outcomes. Their study goes on to highlight that overconfident investors, subject to self-attribution, will be satisfied with a lower return. Berger et al. (2018) describe how by imitating signal providers in copy trading, investors can delegate investment

decisions to more experienced or more competent investors. Therefore, the investor's decision shifts from being between trades to between signal providers. Considering the decision made by followers between signal providers ultimately results in either positive or negative financial returns, self-attribution can be applied to the context of copy trading. Investors can associate successful investment outcomes with their own choice of signal provider and can associate unsuccessful investment outcomes with the decisions of the signal providers they follow. Overconfidence stemming from self-attribution ultimately derives greater satisfaction for investors (Konana & Balasubramanian, 2005), aligning with the framework's core construct of enjoyment.

*The illusion of knowledge* is referred to by Konana and Balasubramanian (2005) as an investor's excessive perception of their own competence and expertise. This stems from the study of Barber and Odean (2001b) who suggest that online investors have access to far more information than previously, often in disintermediated environments. The proposition that the volume of information available correlates with increased knowledge and better decision-making appeals to investors. However, the relevance of the information and the ability of the investor to use the information is more important. Therefore, a greater volume and variety of information is likely to feed the illusion of knowledge and ultimately promote overconfidence (Barber & Odean, 2002). With regard to information in copy trading, Glaser and Risius (2018, p. 2) highlight the high degree of transparency for investors. When engaging in copy trading, investors have "real-time resolution control" over their invested capital and full visibility over signal provider trading decisions along with the wealth of financial information provided online outside social trading platforms. Due to this volume of information available on social trading platforms, it is reasonable to assume that online investors' illusion of knowledge does not deteriorate in the context of copy trading. Konana and Balasubramanian (2005) associate investors' satisfaction levels with the illusion of knowledge, again aligning with this framework's core construct of enjoyment.

*The illusion of control* is defined by Langer (1975, p. 3) as an excessively high "expectancy of personal success". Essentially, the illusion of control in copy trading is observed when an investor overestimates their ability to control an investment outcome (Konana & Balasubramanian, 2005). In the online investing domain, Barber and Odean (2002) have identified involvement as a catalyst for the illusion of control among online investors. In a survey, their study observed that one of the main reasons investors began trading online was due to a feeling of empowerment. Barber and Odean (2001b) highlight that online investors are likely to trade excessively and speculatively as a result of the illusion of control when making investments, ultimately decreasing returns. Konana and Balasubramanian (2005) describe how the illusion of control among investors results in overconfident trading, consistent with the findings of Barber and Odean (2001b). In the context of copy trading, control among followers can be transferred from choosing between trades to choosing between signal providers via copy trading. As such, control in the traditional sense of online investing remains however trades are executed by signal providers via imitation (Berger et al., 2018). Konana and Balasubramanian (2005) identify that the illusion of control among online investors results in overconfident trading and increased self-attribution, ultimately deriving satisfaction for investors, aligning with this framework's core construct of enjoyment.

In summary, according to previous literature, self-attribution among participants in copy trading, combined with an illusion of knowledge and an illusion of control provides satisfaction for investors. This study's framework defines enjoyment as the extent to which the activity of using a new application is perceived to provide reinforcement, apart from any performance consequences that may be anticipated as per TAM. By incorporating the analysis of existing literature on online investing and copy trading, the framework suggests that self-attribution, the illusion of knowledge and illusion of control are the foundational underlying drivers of enjoyment among investors in copy trading.

### ***Signal provider trustworthiness***

Usefulness, ease of use and enjoyment were adapted from TAM (Davis, 1989, 1993) as the core constructs for this research's framework. These core constructs, as per TAM, are considered basic determinants of a user's acceptance or rejection of a new technology. While these constructs and their underlying drivers illustrate to a certain extent why an online investor would engage in copy trading, the framework suggests that the TAM core constructs alone aren't enough to engage online investors. Previous literature has identified that for TAM to accurately reflect a user's acceptance of certain technology, additional factors of acceptance must be considered (Pikkarainen *et al.*, 2004). This study considers signal provider trustworthiness as a mediator for the relationship between TAM's core constructs and an online investor's intention to engage in copy trading. By adding signal provider trustworthiness as a core construct, the framework is refined specifically to the context of copy trading. Therefore, signal provider trustworthiness and its subcomponents, cognition-based signals and affect-based signals, are added to TAM's core constructs to model investors' intention to engage in copy trading. This is illustrated in figure 6.

Existing literature has identified the importance of signalling trustworthiness, in a variety of contexts in online communities, to overcome the difficulties of developing trust online (O'Sullivan, 2015; Pagani, Hofacker, & Goldsmith, 2011; Shankar, Urban, & Sultan, 2002; Yousafzai, Pallister, & Foxall, 2005). While trust online has been highlighted and researched in varying contexts, the work of Wohlgemuth *et al.* (2016) highlight the importance of signalling trustworthiness specifically within social trading networks. Their research describes how trustworthiness plays a particularly relevant and important role in the context of copy trading. Copy trading allows investors to directly imitate a signal provider's financial decisions and, by copying these decisions without evaluation beforehand, investors must trust these signal providers. Considering the financial responsibility of each decision within social trading networks, trust and signal provider trustworthiness plays a particularly significant role. Pan *et al.* (2012) also point out that the lack of offline interaction in copy trading means investors solely rely on signals sent by other participants in social trading networks; therefore, the trustworthiness of signal providers is critical.

McAllister (1995) examines interpersonal trust among managers and professionals in organisations. The study found that trust is both cognition-based and affect-based. Previous literature describes how cognition-based trust is a result of "good reasons" for trust such as reliability, dependency and competency (Lewis and Weigert (1985). Affect-based trust is described as a result of interpersonal, emotional connections (McAllister (1995). Cognition-based and affect-based trust has since been applied to the interpersonal trust of investors engaging in copy trading (Wohlgemuth *et al.*, 2016). The complex nature of financial trading requires cognition-based signals of trustworthiness to establish trust among participants in copy trading. The integration of social networks in social trading platforms means affect-based signals are also required to establish trust between signal providers and participants. Neither cognition-based nor affect-based signals on their own are deemed enough to establish trust between signal providers and followers. Trust, therefore, is modelled in the context of copy trading as a combination of cognition-based signals and affect-based signals from the signal provider. This model is conceptualised and tested in Wohlgemuth *et al.* (2016)'s study of signal provider trustworthiness on the social trading network eToro.

### ***Cognition-Based Signals of Trustworthiness***

*Cognition-based signals* of trustworthiness indicate the technical competence of a trusted individual in a specific field or for a specific task. In the context of copy trading, the domain-specific task and indicator of technical competence are referred to as the identification and execution of profitable investment decisions (Doering *et al.*, 2015).

In Wohlge-muth et al. (2016)'s study, four cognition-based signals of trustworthiness were identified. The first signal was "profitable trades", referring to the number of trades with positive outcomes. The second cognition-based signal of trustworthiness was "return", referring to the annual return on investment. The third cognition-based signal of trustworthiness was "maximum drawdown", referring to an investor's greatest loss over the course of one week as a percentage of the account's balance. The fourth cognition-based signal of trustworthiness was "risk level", referring to the risk appetite of the signal provider in question. These four cognition-based signals of trustworthiness provide a detailed picture of the signal provider's trustworthiness.

### ***Affect-Based Signals of Trustworthiness***

*Affect-based signals* of trustworthiness indicate that a trusted individual shares similar values with the trustor (McAllister, 1995). The social component of affect-based signalling complements the technical cognition-based signals of trust. A differentiating factor between cognition-based and affect-based signals of trustworthiness is the ability to transfer affect-based signals between tasks. As a result, affect-based signals of trustworthiness generate interpersonal trust as a result of demonstrating social competence (Pan et al., 2012). Examples of these include full name, personal pictures, number of followers, and previous performance.

In Wohlge-muth et al. (2016)'s study, two affect-based signals of trustworthiness were identified. Building on the study of McAllister (1995, p. 30), the first two affect-based signals were derived from "citizenship behaviour"; in the context of social trading. This refers to the behaviour of participants with the intention of "effective community functioning not directly resulting from self-interest or reward-seeking behaviour" (Wohlge-muth et al., 2016, p. 3). In the study, the disclosure of both a personal picture and full name, in addition to a username, were affect-based signals of trustworthiness and enough to portray a signal provider's identity to followers. This aligns with the findings of Mesch (2012), who associate the disclosure of personally identifiable information with online trust. The second indicator of affect-based signals of trustworthiness was interaction frequency (Wohlge-muth et al. (2016). In the context of copy trading, interaction frequency referred to the trading frequency of members in the online community. This signal was quantified by identifying a trader's number of active days on the investment platform.

The results of Wohlge-muth et al. (2016) highlight the complementary nature of cognition-based signals and affect-based signals in establishing trust and prompting decisions among followers in the context of copy trading. Specifically, in terms of signalling, the results of their study illustrate that "profitable trades", "return" and "maximum drawdown" are cognition-based signals. In conjunction with these is the presence of a picture, full name and interaction frequency, which are affect-based signals enabling followers to establish trust in signal providers.

In summary, financial performance matters when establishing trust among followers, however signal providers must also demonstrate each appropriate affect-based signal. Followers do not rely on the cognition-based signal, "risk level", to establish trust. Wohlge-muth et al. (2016) refer to the risk-return trade-off associated with trading and corresponding follower preferences as a plausible

explanation for this finding. Their findings also highlight the importance of trustors preferences in establishing trust.

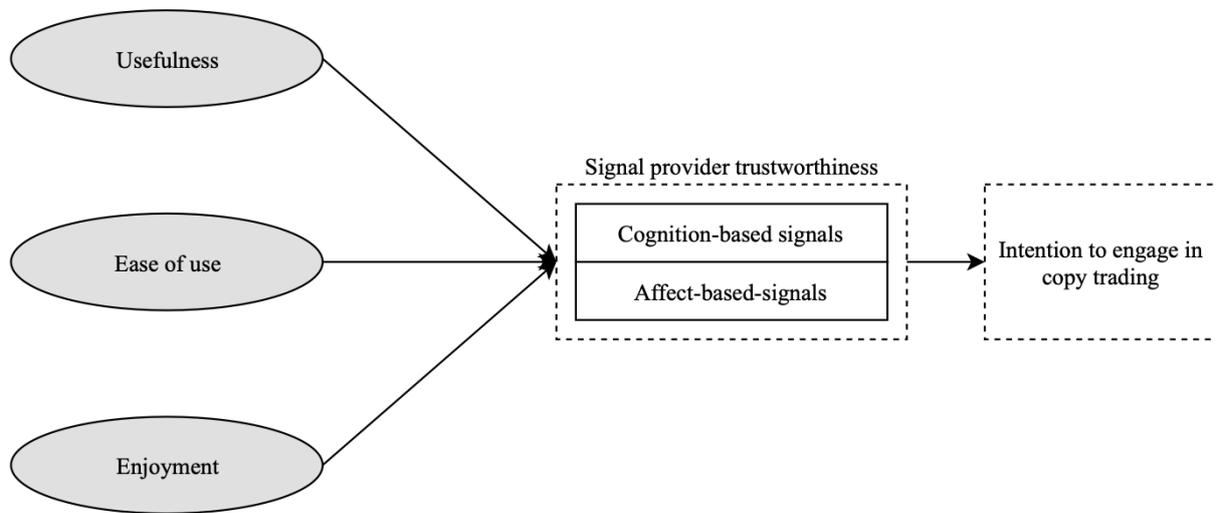


Figure 6. Signal Provider Trustworthiness as a Mediator

## INVESTOR ENGAGEMENT FRAMEWORK DISCUSSION

This study’s framework intends to model online investors’ intention to engage in copy trading; this is illustrated in full in Figure 7. Three of the framework’s core constructs are derived from TAM: usefulness; ease of use; and enjoyment. These core constructs are used as a basis to examine investor intentions to engage in copy trading. To contextualise the constructs, features of copy trading are identified as underlying drivers of each core construct. Firstly, the framework identifies that imitation, risk management and return on investment are deemed to enhance investor performance, therefore, increase the perceived usefulness of copy trading. This suggests that for investors to engage in copy trading, it must be emphasised and clear that financial performance will be increased. Secondly, the framework highlights that transparency, experience level, reduced overtrading and reduced fees drive perceived ease of use. This suggests that copy trading appeals more to investors when it is perceived to be free of effort. Thirdly, the framework suggests that self-attribution, the illusion of knowledge and illusion of control make copy trading more enjoyable for investors regardless of the investment outcome.

Finally, the framework includes signal provider trustworthiness as an additional core construct which mediates the relationship between TAM’s core constructs and an investor’s intention to engage in copy trading. The inclusion of signal provider trustworthiness builds on TAM’s core constructs in the specific context of copy trading. This trustworthiness is broken down into two separate forms of signalling, cognition based-signalling and affect-based signalling. The framework suggests that when delivered effectively, cognition-based signals and affect-based signals of trustworthiness form the trust necessary for investors to engage in copy trading.

While usefulness, ease of use, enjoyment and signal provider trustworthiness are highlighted individually as core constructs of investor engagement in copy trading, the framework’s overall contribution is that the core constructs and their underlying drivers must work interdependently. It is

considered that an investor's intention to engage in copy trading is nullified when any of the core constructs or their underlying drivers are absent.

## **Implications for Practitioners and Researchers**

The framework proposed in this study ultimately details the copy trading features that specifically attract investors and build trust. These details primarily benefit practitioners. Understanding what impacts trust among investors in copy trading is important in the development of strategic and technological advancements to increase investor satisfaction and outcomes. The framework suggests that platform providers and marketers should identify and emphasise the features that users find easy to use, benefit from, and enjoy: for example, increased returns as a result of copy trading. Finally, the framework shows that platform and signal providers must emphasise the availability of signal providers' personal information and performance information to build trust with investors.

A further benefit of this paper's framework is in helping researchers understand the drivers of online investors to engage in copy trading and delegate their investment decisions to others online. The framework is based upon TAM's core constructs, However this paper extends TAM with the introduction of signal provider trustworthiness as an exogenous factor and by identifying drivers of the core constructs. Signal provider trustworthiness mediates the relationship between investors' decisions to engage in copy trading and TAM's core constructs of user acceptance. Therefore, the framework emphasises the importance of building trust between participants in copy trading. While the framework discusses each of the core constructs and their corresponding underlying drivers, it does not rank or weigh the constructs and drivers in terms of relevance or importance. To further understand what drives user acceptance of copy trading, future research could explore which specific features of this framework have the most significant effect on user intentions to engage in copy trading and intentions to delegate investment decisions to others. While objectives generally vary from investor to investor, an attempt could be made to filter out less significant factors in engaging in copy trading to further refine the framework presented in this study.

## **CONCLUSION**

Existing research on copy trading identifies individual features that drive its growing popularity. This paper proposes a conceptual framework to accurately synthesize and extend this existing literature. As new research in the area of copy trading is conducted, the framework could change and adapt with further refinement of the concepts and their relationships. Additional research could include data collection, such as interviews with those involved in copy trading, to refine the model.

Firstly, the paper identifies that TAM's core constructs must be extended when applied to the context of copy trading engagement. Trust is considered paramount in investment decisions, particularly when the decision is influenced by others. As a result of this, signal provider trustworthiness is identified as an appropriate core construct to extend TAM. In total, perceived usefulness, perceived ease of use, enjoyment and signal provider trustworthiness make up the framework's core constructs. Finally, the overall contribution of the framework proposed in this study is that the combination of perceived usefulness, ease of use, enjoyment and signal provider trustworthiness drive investor engagement in copy trading.

For researchers, the framework should more effectively model online investor's intention to engage in copy trading and provide a useful lens for future research in the area.

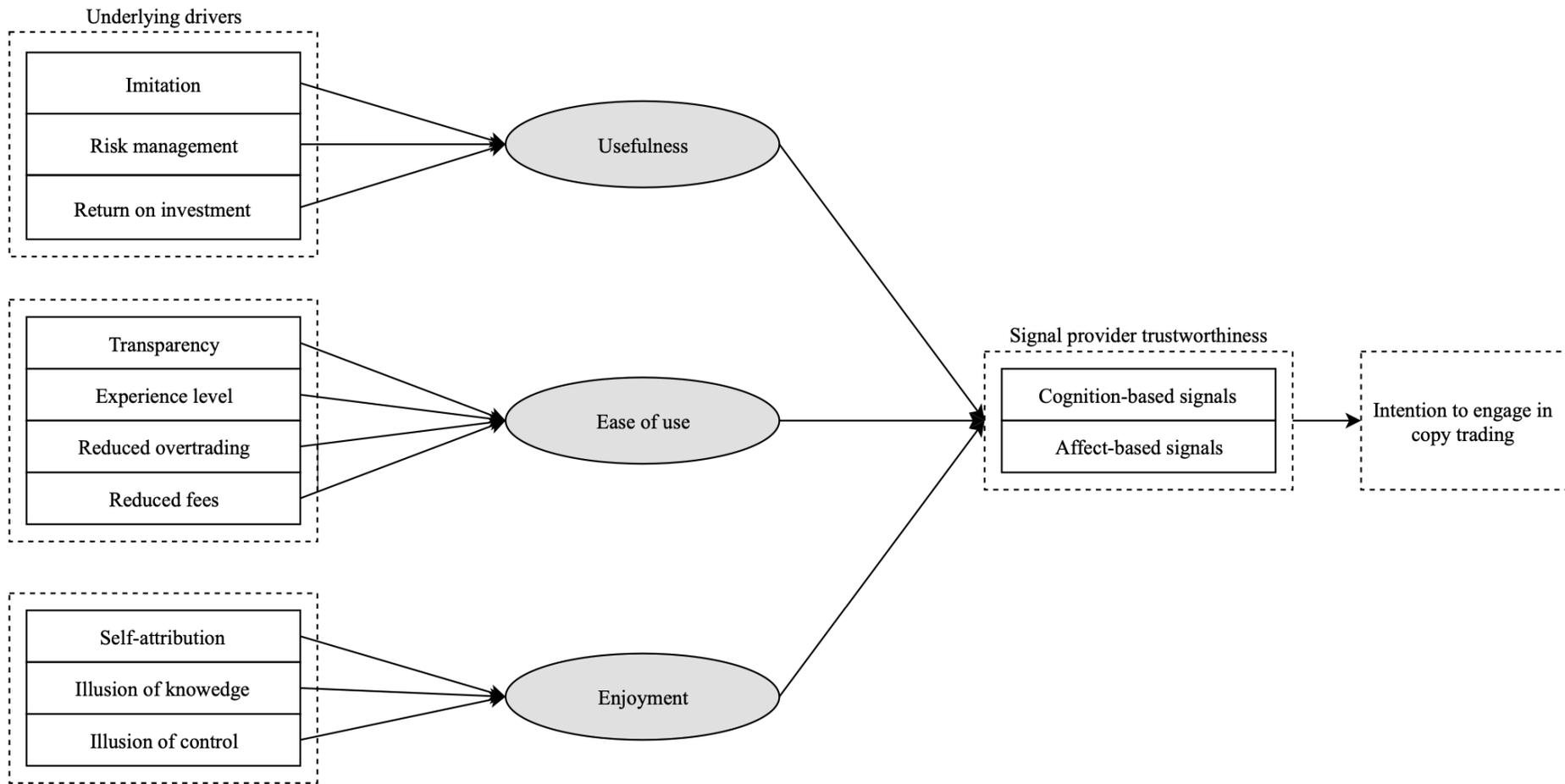


Figure 7. Full IEF Modelling Investors' Intention to Engage in Copy Trading

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