

# Consumer Adoption of Access-Based Consumption Services - Case AirBnB

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### **Abstract**

Increasing internet and smart phone penetration has given rise to a new business model, in which the service companies act as intermediaries and allow consumers to exchange value between them. Usually this is done by facilitating resource exchange between the consumers – one party that needs a resource such as a car, a designer bag or a place to stay rents or shares this resource with another party that has no need for the resource at the moment. This phenomenon has been dubbed collaborative consumption, the sharing economy or access-based consumption and is the focus of this research. The current growth of this sector is extremely high, and several companies operating in this field have received valuations in excess of 10 billion USD and are preparing for large-scale initial public offerings.

Because this phenomenon is quite a recent one, scant quantitative research currently exists that studies why consumers engage in using these services. This study attempts to fill this gap by studying the consumer adoption process of AirBnB. The main questions are; what factors influence consumer adoption of AirBnB and what is the relative importance of the different factors. By using established theories from marketing, psychology and information systems research, a multi-tiered structural equation model is created based on empirical data from a survey of 124 consumers to test different factors influencing adoption.

The results indicate that expected performance and hedonic motivations are the primary drivers of adoption of AirBnB. Social influence is another driver of adoption, albeit to a lesser extent than expected performance and hedonic motivations. In addition, the more materialistic the consumer, the less likely she/he is to adopt AirBnB. Moreover, expected performance is positively influenced by perceived price value and trust. Trust in turn is positively influenced by perceived effectiveness of the feedback mechanisms and the perceived quality of the web site.

Based on the results, it can be argued that adopters of AirBnB are willing to exchange regulation and the safety that comes with it - that are inherent in traditional services such as hotels - in exchange for increased price value, increased perceived fun, and a working trust architecture.

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**Keywords** collaborative consumption, sharing economy, access-based consumption, AirBnB

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# 1. Introduction

Sustainability is an omnipresent topic in the marketplace in the 21<sup>st</sup> century (Albinsson and Perera 2012) and is garnering several major paradigm shifts in the field of consumer research and marketing in general (Kotler 2011; Sheth, Sethia, and Srinivas 2010). As the planet's finite resources are being consumed at an exponential rate and the world is facing the multiple challenges of overpopulation, climate change and environmental degradation, new ways of doing business and marketing in a more sustainable way are called for (Albinsson and Perera 2012; Kotler 2011; Sheth, Sethia, and Srinivas 2010).

To answer this need, a new disruptive business model powered by the Internet has risen in the form of collaborative consumption, or access-based consumption. Companies operating in this new sector of the economy provide a service to customers by offering a trusted, reputation based venue for consumers to exchange value between them – this can be anything from sharing (renting) an underutilized resource such as a car or an apartment or exchanging talent for money (such as putting together Ikea furniture). Companies such as AirBnB (apartments) Uber (taxi rides) and TaskRabbit (tasks, jobs) are among the biggest in this nascent field. The main goal of these services is to increase resource use efficiency by matching those with unused resources with those in need of them. In 2010, this field was already worth \$ 26 billion (Botsman & Rogers, 2010), and is growing at a rapid pace.

The purpose of this thesis is to explore the consumer adoption process of these access-based consumption services through a case example, AirBnB.

The terms “collaborative consumption”, “the sharing economy” and “access-based consumption” are still used interchangeably since this is theoretically still a relatively new field of research.

Therefore in this introductory part, firstly these three terms, “collaborative consumption”, “the sharing economy” and “access-based consumption” will be defined. Secondly, the case company, AirBnB will be introduced, and thirdly the research problem and objectives will be explained. Thereafter this introduction will conclude with the structure of this thesis.

## **1.1 Defining Collaborative Consumption, Access-Based Consumption and the Sharing Economy**

As the dangers of unsustainable overconsumption are being recognized more and more in the aftermath of the financial meltdown, communities, nations and individuals are looking for progressive ways to live their lives within the framework of sustainability (Albinsson and Perera 2012; Prothero et al. 2011; Sheth, Sethia, and Srinivas 2010). Sharing resources, living frugally and “doing instead of owning” are becoming more commonplace (Csikszentmihalyi 1999, 2001) – we are becoming an experience economy (Pine & Gilmore, 1999) and a new wave of internet-based service companies are responding to this trend. Consumers now have the option of accessing a vast amount of different resources from each other via these new exchanges, including apartments (AirBnB), taxi rides (Uber), toys (ToyShare) and services (Taskrabbit).

There are two crucial differences to older forms of peer-to-peer rental (such as time sharing). Firstly, the transaction costs are highly reduced for individuals, therefore renting or accessing anything in or out is easy and convenient and aided by smart new technologies such as GPS, smartphones and the Internet. Secondly, the social network and the feedback systems of these new services reduce the information asymmetry between the parties and generate trust, enabling transactions in this new online environment. Anyone caught cheating on the website faces a severe blowback to his/her online reputation making it unprofitable and unwise to double-deal in these exchanges (Fournier & Bardhi, 2013).

In consumer research, this new field of consumption has been labeled collaborative consumption, access-based consumption or the sharing economy. These three terms have virtually the same meaning with slight differences in their respective theoretical definitions, which will be explained next.

### **1.1.1 Collaborative Consumption**

Collaborative consumption as a term was first introduced by Felson & Spaeth over thirty years ago (Felson and Spaeth 1978), but only during recent years has this field become active as the necessary infrastructure via the internet has been developed. Therefore, the lack of research of this new phenomenon is understandable.

Collaborative consumption was popularized as a general term more recently by Botsman & Rogers in their 2010 bestselling book, “What’s Mine is Yours – the Rise of Collaborative Consumption”.

In academic discourse collaborative consumption has been conceptually defined by Albinsson & Perera (2012). They defined collaborative consumption to have three forms. The first category includes product service systems such as RelayRides where consumers pay each other for access to a resource. A consumer can take the role of a renter or a user, and the idea is to eliminate traditional middlemen such as agents and travel companies. Other examples of this category are cars, toys, tools, designer bags, jewelry and other resources that are commonly underutilized by their owners. Increasing the utilization rate of different consumer goods is a key point in collaborative consumption, as this reduces waste and increases efficiency (Botsman & Rogers, 2010).

The second category according to Albinsson & Perera (2012) is redistribution markets where un-needed goods can be exchanged by consumers themselves. Ebay is a general example of this category, but there are also many more niche marketplaces available for more specialized goods such as Apple products, music equipment and books.

The third category of collaborative consumption is collaborative lifestyles, where consumers “band together to share or exchange less tangible assets such as time, space, skills and money” (Albinsson and Perera 2012). Consequently space here can mean apartments (AirBnB, Couchsurfing) and skills can mean putting together Ikea furniture (TaskRabbit).

### **1.1.2 Access-Based Consumption**

Bardhi & Eckhardt (2012) defined market-mediated consumption where transfer of ownership does not take place as access-based consumption (ABC). In ABC, consumers acquire consumption time with items and in market-mediated contexts pay a price to access objects. Participating in ABC allows consumers to use objects that would otherwise be out of their reach, e.g. an urban consumer can have flexible access to a car he/she couldn’t otherwise own due to space, time, money or environmental reasons (Bardhi and Eckhardt 2012).

This conceptual paper, drawing from existing consumer research theory, defined six dimensions where the sphere of ABC can be differentiated among its many instances; temporality, anonymity, market-mediation, consumer-involvement, the type of accessed object and political consumerism. These dimensions will now be explained, since they are critical in understanding access-based consumption.

### *Temporality.*

Compared to regular ownership, access-based consumption is more transient and irregular. ABC varies along two ways in this dimension: duration and usage. *The duration of access* can be short-term, single-transaction, i.e. renting an apartment for one night from AirBnB. At the other end of the spectrum, access can be long-term, such as access to a community or a club (gym memberships, Netflix memberships, Zip-car access). Access in these cases can be dormant for long period's time, but a consumer still retains the access even though usage can be only infrequent. The other variable here is the *duration of usage*, which can vary from short-term use such as a one-night stay in an apartment via AirBnB to long-term leases of apartments and cars.

According to Bardhi & Eckhardt (2012), this temporality aspect influences especially the consumer-to-object relationship. With infrequent, short-term use, consumers are less likely to develop a perceived ownership of the object in question and relationships with other consumers accessing the object are thin and marginal as well. In long-term usage, consumers are more likely to develop these relations with the object in question and other consumers. Therefore access-based consumers are not severely susceptible to the endowment effect first described by Kahneman, Knetsch, and Thaler in 1990. This effect explains why people form strong bonds with objects they possess, and how this effect is magnified and increased, meaning greater value placed on the object as time passes (Strahilevitz and Loewenstein 1998). Consider for example a consumer involved in communal farming; a long-term use relationship with the garden is more likely to result in the consumer developing the traditional aspects of the relationship: perceived ownership, investing in the object(s) through labor and knowing the object(s) more intimately.

### *Anonymity.*

The anonymity aspect of access-based consumption affects the consumer-consumer-relationships involved in the behavior in question. Firstly, ABC differs with regards to the interpersonal anonymity involved in the consumption. In some cases consumption can be totally anonymous, such as with access to a car through a ride sharing company such as Zipcar. In other cases consumption can be totally public, as is usually with services involving social networks (AirBnB, TaskRabbit) or communal activities. This aspect can have an impact on how responsibly consumers behave during the exchange: anonymous consumption can lead to more irresponsible behavior, whereas public consumption and personal lenders between the parties usually lead to more responsible behavior during the exchange (Bardhi and Eckhardt 2012; Jenkins, Molesworth, and Scullion 2014) Secondly, the spatial anonymity differs among ABC-contexts. In other words, the

proximity of the object and the consumer influences the relationship. In more intimate situations, such as using a car parked always near one's home, the relationship can become quite near to de-facto ownership, whereas in less intimate situations, such as consuming shared resources far away from one's home (renting an AirBnB-apartment abroad, for instance), the relationship tends to be less habitual ((Bardhi and Eckhardt 2012).

### *Market-mediation.*

Whether or not ABC is market-mediated influences the consumer-consumer and consumer/object relationships. Non-market mediated ABC includes services through which consumers gain access to each other's services and resources with the help of technology. Time banks and toy libraries are examples of non-market-mediated ABC. In market-mediated ABC, the profit motif is the driving force behind the interactions. Examples include room renting through AirBnB and online rental services such as Spotify and Netflix. Non-market mediated ABC is driven by other motifs than profit – a good example is inter-personal borrowing studied by Jenkins, Molesworth and Scullion (2014). In this study it was found that borrowing is a significant factor for consumers in forming relationships and maintaining them. The nature of the relationship, on the other hand, determines and influences the nature and practices of borrowing (Jenkins, Molesworth, and Scullion 2014).

### *Consumer Involvement.*

The level of consumer involvement in different ABC-contexts influences the regulation of the relationship as well as the consumer-object-relationship. Involvement is low in traditional rental-type situations such as Netflix (TV, movies) and Spotify (music). Consumer co-creation is higher in more involved contexts, such as peer-to-peer rental services such as Relayrides, where customers are expected to service the equipment themselves. This can include making sure the car is operational, cleaning up, filling the gas tank etc. More governance is required in these high-involvement instances, where the whole business model relies on customers participating in the co-creation of value. On the other hand, more intense involvement naturally intensifies the relationship with the object(s) utilized, and thus the object is more likely to influence the consumer's extended self more radically (Belk 1988).

### *Type of Accessed Object.*

This dimension varies along two different lines. Firstly, the object in question can be either experiential or functional. Experiential access-based-consumption was studied by Chen (2009). In his study of access-based-consumption of art, it was argued that consumers do not derive value from a functional product unless it is owned (Chen 2009). Functional access was studied by Bardhi & Eckhardt (2012) in their conceptual paper. They reached a different conclusion, i.e. that customers do derive value from functional products in access-based-consumption.

Secondly, the object can be material or immaterial. Immaterial objects such as digitized music (Spotify) and videos (Netflix) are more suitable for sharing and these contexts are characterized more by altruistic motivations (Belk 2010) compared to material objects, where the inclusion of the profit motive and market-mediation are more common.

### *Political Consumerism*

As a final dimension, Bardhi & Eckhardt (2012) argued that the nature of access-based-consumption differs on a spectrum of political consumerism. Consumers participating in access-based-consumption convey their ideologies, values and interests by choosing between ownership and access-based-consumption. For example car and toy sharing can be seen to represent the environmental and anti-consumption values of many of its participants and their resistance to more traditional forms of consumer culture (Ozanne and Ballantine 2010). Other examples include community activities such as communal gardening and neighborhood swapping events, which represent the will of their creators to protect public areas and spheres from commercialization.

### **1.1.3 The Sharing Economy**

The Sharing Economy is the third term that is used to refer to this new area of consumerism where access is more important than ownership. Especially the popular business press has adopted this term, and references it often (see for example articles in *The Economist*, *Forbes*, *Harvard Business Review*, and *New York Times*).

The main points about this phenomenon are the same as with collaborative consumption and access-based-consumption. As pointed out earlier, these three terms are used almost interchangeably. For this thesis, I will refer to all three terms as access-based-consumption, since this concept has been rigorously defined in recent consumer research (Bardhi and Eckhardt 2012) and to avoid any confusion.

## 1.2 Case Company Background: AirBnB

In this chapter the history and main characteristics about AirBnB, the case company used in this thesis, will be explained briefly. The acronym AirBnB is derived from “Air, Bed & Breakfast”.

AirBnB was founded in 2008 in San Francisco, California. The housing rental peer-to-peer service has enjoyed phenomenal growth and currently operates in 192 countries around the world in 34 000 cities with over 500 000 individual housing locations up for rental (AirBnB, 2014). In early 2014 the company underwent another funding round that put the company valuation at 10 billion USD. This figure is 2 billion more than the current market capitalization of the InterContinental hotel chain, indicating high investor expectations for the future. (Bradshaw, 2014) This investor confidence is probably resultant of the fact that AirBnB’s growth can be expected to stay extremely fast because of its business model – the company requires almost no physical capital to operate, and thus is not burdened by the usual high capital requirements and operational challenges of expansion faced by the more traditional players in the hospitality industry.

The service originally catered to conference visitors who were unable to book lodgings in a temporarily saturated market. This quickly expanded to more cities and various different kinds of lodgings, including castles, tree huts and yurts. The main purpose of the service is to connect people with unused lodging space with those in need of it. The time span of the rentals varies from short-term stays to long-term housing mimicking traditional rental arrangements. The hosts are free to charge any amount they wish per day, week or month.

The company makes money primarily by charging a 6-12 % service fee from hosts of the total sum of every transaction.

The service relies heavily on social networks, and is connected to Facebook and Google+ profiles. Each user has a unique profile with detailed user history including rental and host statistics and reviews by other users (including stars from different categories, for example cleanliness and location, and verbal reviews). Guests and hosts are encouraged to review each experience with the service, thus building up the reputation of its users to mitigate informational asymmetries (Botsman & Rogers, 2010; AirBnB 2014).

Other trust-generating features of the site include a verification system that hosts can require of guests (in which case the guest also receives verification about the host). This verification process includes telephone, photo ID and social network profile verification.

Hosts also receive an insurance underwritten by Lloyds that covers any property damage up to 1 million USD. AirBnB also operates a 24-hour customer service hotline and other support services.

All of this is to bridge the trust gap between potential hosts and guests and to build credible online reputations for both hosts and guests. This is an important note, and will feature also in the adoption model of this thesis.

### **1.3 Research Gap**

Sharing in its various forms has received scant attention in previous consumer research (Belk 2010; Rahbek and Pedersen 2013). As the internet is creating and enabling a new wave of value being created in sharing resources, studying this consumer phenomena is increasingly important (Belk 2010). Consumers are adopting access-based consumption behaviors so fast that academics and marketers currently have trouble keeping up with the theory and practice of this new behavior (Prothero et al. 2011).

Thus far access-based consumption has been studied mostly via qualitative methods in different contexts. Albinsson & Perera (2012) studied swapping and sharing events and found that a sense community was a driving force behind these events, and that various ideas and skills are being exchanged in such events by a diverse group of people. Traditional online auction and barter sites (for example Ebay) have been studied in various contexts (Denegri-knott and Molesworth 2009; Melnik and Alm 2003; Nelson 2007; Standifird 2001) as have toy libraries (Ozanne and Ballantine 2010) and car sharing services (Bardhi and Eckhardt 2009).

In spite of growing consumer interest in these services, quantitative research into this area is still sparse, as is technology adoption research. The key question of why consumers adopt these services and continue to use them has been studied only in a few instances quantitatively using previously established models and theories (Moeller and Wittkowski 2010). This is most likely because the area of study is still relatively new. The purpose of this thesis is to fill this research gap and explore which factors influence consumer adoption of these new sharing services, and to construct an adopted theoretical model using theories from the research fields of technology adoption and consumer research. This thesis will use AirBnB as a case example, because it is one of the best known and largest examples of this field. The general characteristics of the sharing economy

companies (use of social networks, trust-centricity, highly perceived delivered value, sustainability) are quite similar, so generalizations from AirBnB to other similar companies are possible.

Therefore, the main research question becomes:

*Which factors have the strongest influence on consumer adoption of AirBnB?*

The secondary research question is:

*What are the relative strengths of the different factors influencing consumer adoption of AirBnB and services like AirBnB?*

A practical contribution from this thesis is a better understanding of consumer behavior and adoption in this context, which should help business practitioners' better design their products and services in this field to meet consumer wants and needs. Access-based consumption is a highly disruptive field to traditional operators in their respective sectors, and understanding access-based consumers is essential to practitioners facing competition from these new entrants.

In the technology adoption literature which is one of the most studied fields (e.g. Bagozzi, 2007) this thesis will contribute to the extant literature by adding a new context and testing the existing theories in this new context.

## **1.4 Thesis Structure**

The structure of this thesis as follows. Next, the relevant literature in relation to the construction of the theoretical model will be discussed. Secondly, the theoretical model will be constructed based on established theories and constructs and the research hypotheses will be introduced. Thirdly, the methodology will be described and the empirical results presented. The thesis will conclude with discussion of the results and its limitations along with future research opportunities.

## 2. Literature Review

This chapter will introduce the main theoretical technology acceptance models relevant for this thesis and the building of the adoption model for this context. The relevant models include The Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (1 & 2). Based on previous research, the factors influencing consumer acceptance of access-based-consumption services will be discussed and hypotheses for this study will be formulated. Thereafter at the end of this chapter an adopted model of technology acceptance will be presented based on the literature review.

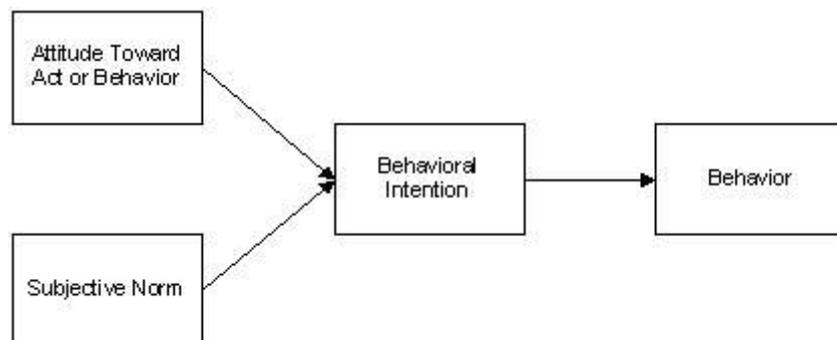
### 2.1.1 The Theory of Planned Behavior

The Theory of Planned Behavior (TPB) (Ajzen 1991) is one of the most studied adoption models that is used to predict and understand human behavior and has been utilized and validated in various contexts of studying human behavior (for a review of existing studies, see for example (Armitage and Conner 2001). Electronic commerce adoption has been studied in various contexts using TPB (Ajzen 1991; Chiu et al. 2014; Pavlou and Fygenson 2006; Venkatesh, Thong, and Xu 2012). The model has been used in its original form, combined with the Technology Acceptance Model (TAM) and extended to fit various different contexts (Dörr et al. 2013; Pavlou and Fygenson 2006).

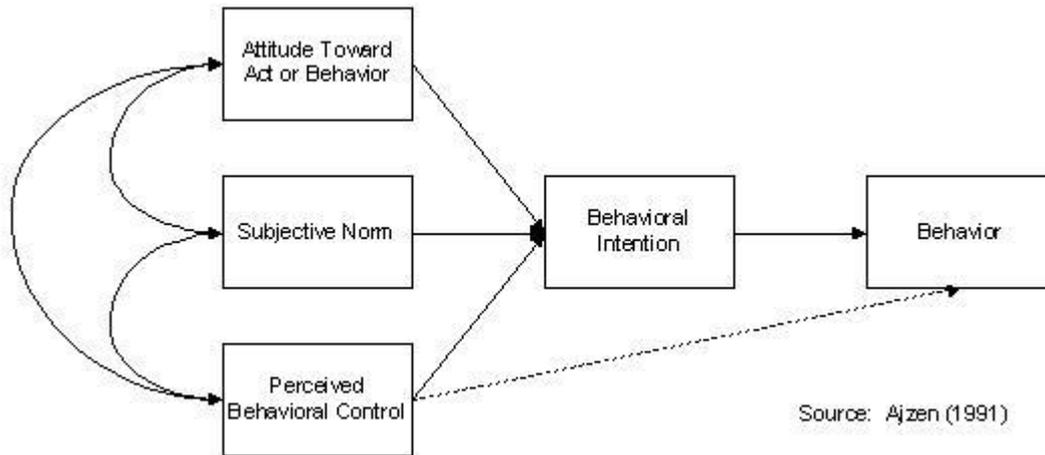
TPB was originally developed as an extension of The Theory of Reasoned Action (TRA).

Depicted below are both models, both the original TRA and TPB with the added construct of perceived behavioral control.

**Figure 1. The Theory of Reasoned Action (Ajzen 1980)**



**Figure 2. The Theory of Planned Behavior (Ajzen 1991)**



TRA is suitable to use in various contexts, as its behavioral prediction power extends to many fields of human behavior due to its general nature (Ajzen 1991). TRA and TPB both have at their core an individual's behavioral intention to perform a specific action – this intention generally correlates well with behavior itself and this correlation has been validated in many contexts (Pavlou and Fygenon 2006).

An individual's motivations, their willingness to perform a given action and the effort they are willing to spend to perform a specific action are assumed in the models to be captured by the attitude-construct (Ajzen 1991). External factors such as demographics therefore influence attitudes, which in turn influence the behavior itself in question.

The second construct in both TRA and TPB is the subjective norm, which refers to the individuals' perceived (real or imagined) social pressures towards performing or not performing the specific action.

The added construct from TRA to TPB was Perceived Behavioral Control (PBC), which was found to improve the predictive power of the model consistently across contexts (Ajzen 1991). Perceived Behavioral Control refers to the ease at which the individual sees himself capable of performing the action in question. PCB captures both past experience and perceived future obstacles and difficulties (Ajzen 1991).

The model generally predicts that the more positive and favorable an individual's attitude and subjective norms toward a behavior are, the stronger the intention to execute the behavior is. Moreover, the greater the perceived behavioral control is (PCB), the stronger the intention. The

relative importance of these three constructs is expected to vary based on the context studied (Ajzen 1991).

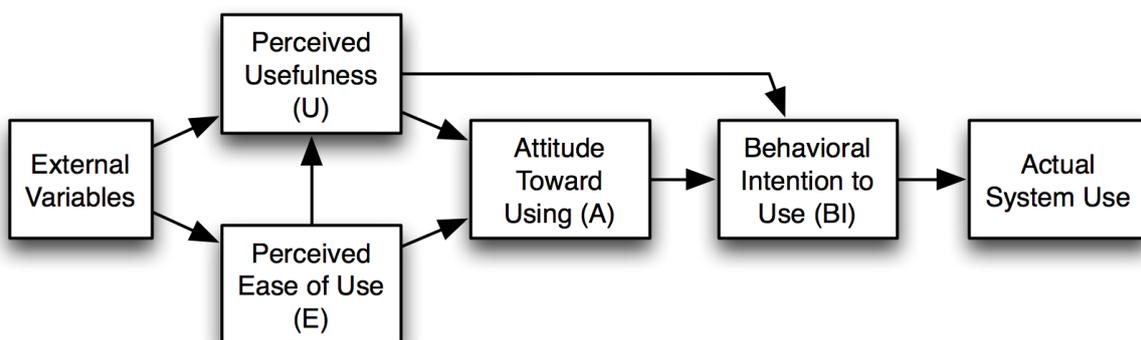
TPB is well suited for extensions and different configurations in specific contexts and in studying intentions to adopt a product or a service. It is also often used combined with other streams of theory such as the Technology Acceptance Model (Dörr et al. 2013).

### 2.1.2 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was developed by Davis to study corporate IT-acceptance. TAM constructed two new relevant and valid measurement scales for predicting user acceptance of IT, i.e. perceived usefulness and perceived ease of use. The original focus of TAM was not in the consumer context, but rather corporate IT since corporate IT adoption was a more urgent research concern at the time (Davis 1989).

The two main constructs, perceived usefulness and perceived ease of use were determined to be paramount in determining user IT adoption. Perceived usefulness captures the extent to which a user “believes that using a particular system would enhance his or her job performance”. Perceived ease of use on the other hand captures whether “a user believes that using a particular system would be free of effort” (Davis 1989). The model has been well validated empirically, with the model explaining an average of 40 % of variance in user acceptance of IT (Venkatesh and Davis 2000). The model is depicted graphically below.

**Figure 3. Technology Acceptance Model (Davis, 1989)**



TAM is similar to the Theory of Reasoned Action (TRA) in many aspects. The main difference is that TAM states that other constructs than attitude can have an effect on behavioral intention to use, mainly perceived usefulness, which in turn is influenced by external variables (experience,

background etc.) and perceived ease of use (Davis 1989). The corporate aspect is visible here – consider an employee that does not have a positive attitude toward adopting for instance a mobile app – his or her behavioral intention will be still influenced by perceived usefulness, i.e. the job requiring the use of the app for maximal performance regardless how “good or bad” the app feels.

Although having originally been developed to study IT-adoption behavior in organizational contexts, TAM has been extended to be used in consumer research as well (Koufaris 2002; Moon and Kim 2001; Pavlou 2003; Venkatesh and Davis 2000; Venkatesh, Thong, and Xu 2012; Wu and Wang 2005). TAM was extended to TAM2 by Davis & Venkatesh to include constructs for social influence (subjective norm, voluntariness and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability and perceived ease of use). (Venkatesh and Davis 2000). TAM2 did better than the original TAM, with TAM2 explaining up to 60 % of variance in user acceptance of IT versus 40 % with the original TAM (Venkatesh and Davis 2000).

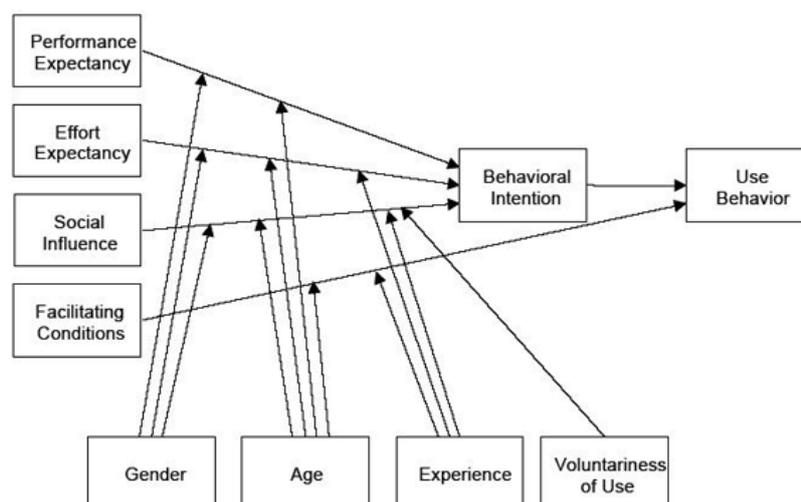
### 2.1.3 Unified Theory of Acceptance and Use of Technology (UTAUT, UTAUT2)

The original UTAUT was proposed by Venkatesh et al. in 2003 after a review of 8 existing, prominent models of user adoption of IT. The 8 models reviewed were The Model of PC Utilization, Innovation Diffusion Theory, Social Cognitive Theory, Theory of Reasoned Action, Technology Acceptance Model (and TAM2), Theory of Planned Behavior and Combined TAM/TPB.

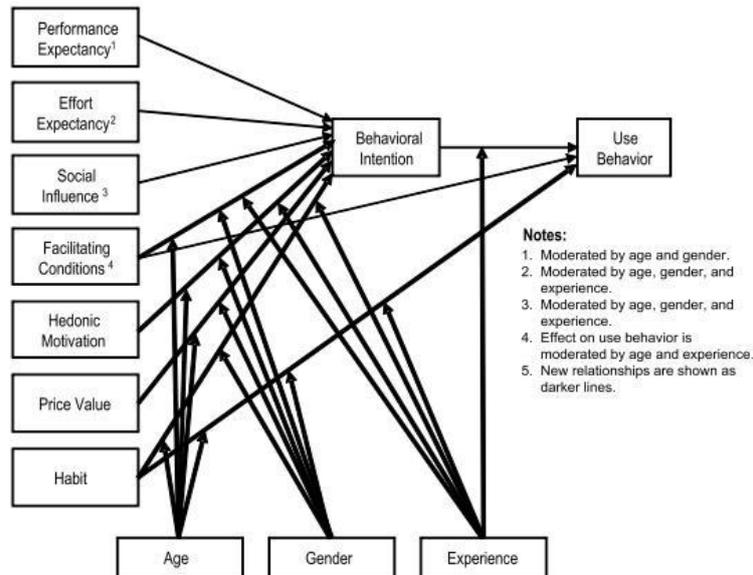
The revised unified model was developed for corporate IT use mainly, i.e. for a non-consumer context. The model was extended to UTAUT2 in 2012 for the specific intention of making it usable in consumer contexts (Venkatesh et al. 2003; Venkatesh, Thong, and Xu 2012)

Both models are next depicted graphically.

**Figure 4. Unified Theory of Acceptance and Use of Technology (Venkatesh et. al., 2003)**



**Figure 5. Unified Theory of Acceptance and Use of Technology 2 (Venkatesh et. al., 2012)**



Both models study the effects of a number of external variables (e.g. Performance Expectancy, Effort Expectancy ) in relation to behavioral intentions, which in turn have an effect on use itself. These relationships are moderated by age, gender and experience along with voluntariness of use in the original UTAUT. For instance an older woman is expected to show a weaker correlation between intentions and hedonic motivation than young men.

The new core constructs added to UTAUT2 were habit, price value and hedonic motivation. These added constructs increased the variance explained by the model in consumer contexts significantly: behavioral intention variance was explained 56 to 74 % better than UTAUT, and technology use variance was explained 40 to 52 % better.

The original UTAUT has been used in various contexts and fields in both its original form and as a partial or modified version and has been well validated empirically (Venkatesh, Thong, and Xu 2012). The contexts vary from internet banking adoption (Martins, Oliveira, and Popovič 2014) to studying cultural differences in technology adoption (Im, Hong, and Kang 2011). Usually the model is modified to study a specific added construct, such as the effect of risk on consumer adoption of airline ticket reservations online (Cunningham et al. 2005).

## **2.2 Research Model and Hypothesis Development**

The purpose of this thesis is to firstly study the factors influencing consumer adoption of access-based-consuming services through a case example, adoption of AirBnB. Secondly the purpose is to build a theoretical model that is able to predict consumer adoption of these services. The model will be based on existing theory and empirically validated constructs.

Since UTAUT2 includes all the most recent advances in consumer technology adoption literature, it will be used as a basis for this study with slight modifications. Firstly, the habit-construct will be removed since this thesis studies *use intentions* and *not actual use*. Secondly, the moderators are removed from the model since they are not expected to reveal any useful additional information due to the sampling method used. Thirdly, some new constructs will be added to the model to modify it to be more suitable for use in this context, i.e. behavioral intention to use AirBnB.

Since the adoption of ABC-services is still in its infancy globally, studying actual consumer use of these services is nearly impossible. Therefore the actual focal point of this thesis is studying the intentions of consumers to use these services in the future. Intentions have been shown to be a valid measure and a good indicator of actual use (Sheppard, Hartwick, and Warshaw 1988). In addition, self-reported usage has been shown to be problematic as a surrogate measure of actual usage (Szajna 1996).

In the case of ABC-services, the model will be extended to suit the current context. Especially the role of risk in adoption of AirBnB will be studied, since risk-mitigating mechanisms are at the core of the whole AirBnB business model.

Next the theoretical adoption model for the case of AirBnB will be presented along with a number of hypotheses to be tested out empirically. Several factors will be presented that are hypothesized to influence intentions to use AirBnB.

### **2.2.1 Performance Expectancy**

Venkatesh et al. (2012) defined performance expectancy as “the degree to which using technology will provide benefits to consumers in performing certain activities”. In one form or another, performance expectancy is included in most mainstream technology adoption frameworks. As previously noted in 2.1.2, in TAM this construct is called perceived usefulness. It is also the

strongest predictor of intention in both voluntary (consumer) and involuntary settings as reported by Venkatesh et al. (2003) in their review of 8 mainstream technology acceptance frameworks. Moreover, a longitudinal study by Szajna (1996) confirmed the supremacy of perceived usefulness as a construct in technology adoption models. They confirmed it to have a strong and enduring prediction power on use intentions. In his study, Szajna (1996) reported that performance expectancy explained 52 % of the variance in user intentions. Similar results were reported by Taylor and Todd (1995) in their study of TPB and two variations of TPB (a decomposed model of the belief structures and the original model intact). They reported that perceived usefulness was the strongest predictor behavioral intentions in the case of TAM-modeling

In addition, performance expectancy has also been empirically validated in consumer e-commerce-travel adoption research. In a meta-analysis of online-travel purchasing adoption research, Amaro and Duarte (2013) found strong support for the performance expectancy construct. They reported that Kamarulzamann (2007) found perceived usefulness to be positively correlated with consumer adoption of online travel shopping among UK consumers. A study by San Martín and Herrero (2012) using Venkatesh et al's original UTAUT framework also confirmed the positive influence of performance expectancy on online travel purchase intention.

Performance expectancy has also been validated in an international context. Im, Hong, and Kang (2011) studied the relationships of Venkatesh et al's UTAUT (2003) constructs and how they were affected by culture. The countries of the study were U.S and South Korea. Performance expectancy was confirmed unilaterally to be the strongest predictor of use intentions, and no significant variation was observed between the countries. Therefore, performance expectancy is important regardless of cultural differences (at least between U.S and Korean consumers).

In more general e-commerce context, this construct has also received universal empirical support and use. Koufaris (2002) applied TAM with constructs from consumer behavior theory and psychology to study online consumer behavior (specifically how cognitive and emotional responses from consumers effect intentions to return and to make unplanned purchases). They found perceived usefulness to be the greatest predictor of behavior, with shopping enjoyment the second most important construct. Ha and Stoel (2009) found that consumers' perceived usefulness of a B2C-apparel shopping web site influenced intentions to shop online along with attitudes towards the web site. The quality of e-shopping determined perceived usefulness. Quality was in turn determined by how successful the following determinants were: web site design, customer service, privacy/security and atmospheric/existential items. The study by Ha and Stoel (2009) highlighted

the fact that e-commerce is a multifaceted business, requiring attention to many aspects, not just basic issues such as pricing and delivery.

To sum up, the first hypothesis is:

*H1: Performance expectancy positively influences consumer intention to use AirBnB.*

### **2.2.2 Effort Expectancy**

Effort expectancy refers to the degree of perceived difficulty of using a technology. Generally, the easier a technology is to use in the adoption phase, the more positive attitude the user has towards using it. Effort expectancy has been well validated by empirical research and was part of Davis' original TAM as well as the revised TAM2 (Davis 1989; Venkatesh and Davis 2000). As previously mentioned in 2.1.2, in TAM effort expectancy, or perceived ease of use as it is called in TAM, is the only determinant of use intentions along with perceived usefulness. Davis (1989) calls perceived ease of use a "fundamental determinant" of use intentions.

In an e-commerce context, effort expectancy has also received ample empirical support. Childers et al. (2002) demonstrated that both utilitarian and hedonic motivations are important for consumers adopting e-commerce. Perceived ease of use was a strong predictor of attitudes toward behavior in all cases they examined. Perceived ease of use was defined to consist of navigation and convenience constructs (Childers et al. 2002). Thus, time saving and ease of navigation are important determinants of perceived ease of use in an e-commerce context. Similar results were reported by Devaraj, Fan, and Kohli (2002). They studied consumer satisfaction of e-commerce through three frameworks: TAM, Transaction Cost Analysis (TCA) and Service Quality (SERVQUAL). TAM components, i.e. perceived usefulness and perceived ease of use were found to be significant determinants in consumers forming attitudes and service quality opinions of the e-commerce channel. Interestingly, perceived ease of use was a stronger determinant of attitudes than perceived usefulness, explaining 75,02 % of variance in consumer behavior (Devaraj, Fan, and Kohli 2002).

In a more specific context of online travel shopping adoption, effort expectancy has also received broad empirical support. In their meta-analysis of online travel purchasing, Amaro and Duarte (2013) reported that perceived ease of use has a positive influence on online travel purchasing intentions. This influence is both direct and indirect, affecting also perceived usefulness and intentions through perceived usefulness.

Thus, the next hypothesis is:

*H2: Effort expectancy positively influences consumer intention to use AirBnB.*

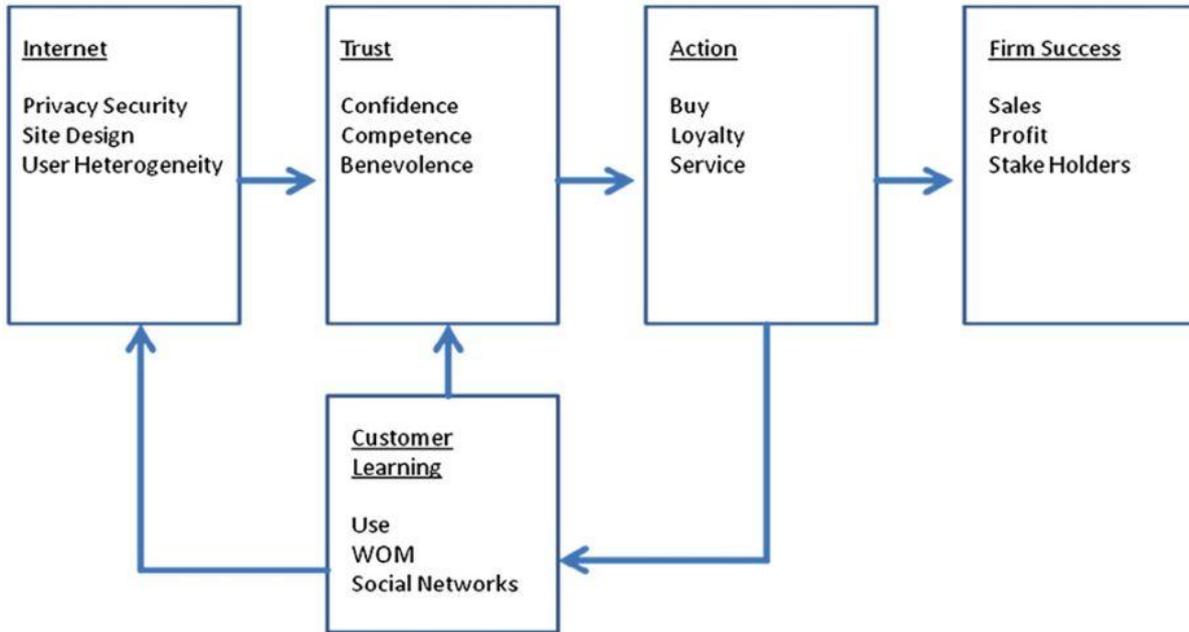
### **2.2.3 Trust**

Since the beginning of online shopping in the 1990's, the role of trust has been recognized to be of central importance to consumers (c.f. Chang, Cheung, and Tang 2013; Jones and Leonard 2008; Sirdeshmukh, Singh, and Sabol 2002; Urban, Amyx, and Lorenzon 2009). A lack of trust in online shopping is a key deterrent for consumers in adopting e-commerce and is preventing the internet from reaching its full potential as a transaction medium for exchange and commerce (Palvia 2009).

Therefore online trust has received significant interest among researchers in its many dimensions. While there is no unilaterally accepted measure of trust in the online sphere, there have been many attempts to quantify and measure trust and its effects on intentions to shop online (c.f. D Gefen, Karahanna, and Straub 2003; Harris and Goode 2004; Pavlou and Fygenson 2006). Online trust involves accepting a position of vulnerability, that is, trusting that the other party (seller or buyer) will fulfill his or her part in the exchange. Trust also involves security features of the site in question and the payment processing capabilities, general trust in the online seller or marketplace and trust in the other parties of the transactions (i.e. other consumers in C2C-marketplaces). The anonymous, intangible nature of most online transactions heightens the importance of trust (Beldad, de Jong, and Steehouder 2010).

Consequently online trust is a multifaceted and complex issue and involves many factors and interdependencies. In a comprehensive review of recent literature on the subject, Urban, Amyx, and Lorenzon (2009) distilled how online trust works into an overall framework which is depicted below.

**Figure 6. Online Trust Architecture (Urban et. al, 2009)**



This framework shows how the online e-commerce site affects trust, which in turn affects consumer actions that lead to positive or negative results for the firm. Consumers also learn from their buying experiences and transactions, from word-of-mouth communication from other consumers and from their real or virtual social networks. Consequently trust is a mediating factor that influences consumer buying behavior (e.g. transacting online and getting involved in the site’s community) (Urban, Amyx, and Lorenzon 2009). Higher levels of should thus lead to higher perceived usefulness and thereafter indirectly to a higher intention to use AirBnB in the context of this study’s adoption model. Therefore, the next hypothesis is:

*H3: Trust relates positively to performance expectancy.*

Moreover in the case of AirBnB, the effect of customer learning from use and social networks is especially strong. The site has built up a large, active community of users who are encouraged to review every transaction they make to generate information to potential adopters and to reduce the information asymmetry between “buyers” and “sellers” on the site. For example, when searching the site for apartments, the site by default sorts the results based on previous reviews, thus giving the renters with the best feedback the most visibility. These kinds of feedback mechanisms have become the norm in online marketplaces, and were pioneered by the likes of the online auction house Ebay.

The implications of the effectiveness of these feedback mechanisms has been empirically studied by Pavlou and Gefen (2004) who studied consumer behavior in the context of Ebay online auctions. They studied the links between consumer intentions to transact and their impressions of the trustworthiness of the community of sellers and the consumers' perceived risk deriving from the community of sellers. They found the two strongest predictors of trust in the community of sellers to be the effectiveness of feedback mechanisms present and trust in the intermediary (i.e. Ebay). This trust then reduced perceived risk and increased intentions to transact in Ebay (Pavlou and Gefen 2004).

Furthermore, feedback mechanisms were also studied by Ba and Pavlou (2002). The contextual setting was once again Ebay's auction site. The findings of this study supported the centrality of feedback mechanisms. Firstly, Ba and Pavlou (2002) found that sellers with higher rated feedback profiles elicited more trust in potential buyers. Secondly, the more positive reviews, the higher level of trust generated. Moreover, negative ratings had a stronger (negative) effect on trust than positive ones. Thirdly, higher levels of trust lead to higher price premiums, i.e. highly rated sellers got a better price for their wares. Lastly, the effect of trust was more prominent in more expensive items. This last conclusion is interesting from the point of view of AirBnB, where most transactions are higher in value than Ebay. Trust can thus be said to be of special importance in the context of AirBnB. Consequently, the next hypothesis is:

*H4: Perceived effectiveness of feedback mechanisms relates positively to trust.*

Based on previous research, in addition to requiring effective feedback mechanisms, there is one more critical component in the formation of trust in a consumer's mind. This component is the *perceived quality of the website* of the e-commerce marketplace. The perceived quality of a website is an environmental cue that shapes consumer intentions through trust (Chang and Chen 2008). Chang and Chen (2008) studied whether environmental cues, i.e. perceived web site quality and web site brand influenced consumer intentions to transact on the site in question, and whether or not this effect was mediated by perceived trust and perceived risk. Their findings confirmed that these environmental cues do affect consumer intentions, and that this effect is indeed mediated by perceived risk and trust.

Another study highlighting the importance of perceived web site quality in the formation of trust was published by Everard and Galletta (2006). They studied how presentational flaws influence perceived site quality and whether or not this influences trust towards the e-commerce site in

question and through trust, intentions to transact on the site. All hypotheses were confirmed by their study – perceived site quality thus influenced trust, which influenced intentions to buy.

In the case of AirBnB and access-based consumption services, perceived web site quality should also therefore influence how trustworthy consumers perceive the site to be and through trust, it should influence their intentions to use AirBnB. Therefore,

*H5: Perceived web site quality relates positively to trustworthiness.*

### **2.2.5 Hedonic Motivation**

Taking into account the hedonic value a consumer derives from shopping is fundamental to understanding consumer behavior across most consumer contexts (Babin, Darden, and Griffin 1994). Enjoyment and fun, both hedonic motivations, are major determinants of new technology and service acceptance (c.f. Ha and Stoel 2009). Hedonic motivations are defined here as the fun or pleasure a consumer derives from using a technology (Venkatesh, Thong, and Xu 2012).

Providing a fun and enjoyable shopping experience has been recognized as a key competitive advantage to retailers (Arnold and Reynolds 2003). Consequently, online e-commerce quickly recognized the importance of not only utilitarian but hedonic shopping motivations for consumers (Childers et al. 2002). E-shopping environments are today designed to elicit experiential, positive experiences and to be fun to use.

The great emphasis consumers place on enjoyment in e-commerce has been studied in different contexts. Hedonic motivations have been found to positively affect consumer's repeat purchase intentions in online shopping (Chiu et al. 2014). Enjoyment has also been positively linked to attitudes towards online shopping (c.f. Childers et al. 2002). Hedonic motivations are also a part of Venkatesh et. al's (2012) UTAUT2-framework that is used to study technology acceptance in consumer contexts, and are thus included as a construct in this study as well.

The next hypothesis is thus:

*H6: Hedonic motivation positively influences consumer's intention to use AirBnB.*

## 2.2.6 Facilitating Conditions

Facilitating conditions refer to consumer's perceptions of the resources and support that they have available to perform a behavior (Venkatesh, Thong, and Xu 2012). The greater the facilitating conditions, the easier it is for consumers to engage in the behavior in question. Among consumers, this variable can be expected to vary more as technology use is voluntary for the most part, and consumers differ greatly in the resources, skills and support they have available.

Facilitating conditions have been included as a construct in almost all mainstream IS-technology acceptance models and has found wide support as an important factor to consider in technology acceptance research (c.f. Venkatesh et al. 2003). As explained in 2.1.1, in the Theory of Planned Behavior and the Technology Acceptance Models, this construct was called *perceived behavioral control*. In addition to capturing the element of perceived behavioral control, facilitating conditions also capture the degree of compatibility of the technology with the existing values, experience and needs of the consumer (Venkatesh et al. 2003).

In the case of AirBnB, the use of the service requires foremost knowledge and skills related to general internet use, i.e. browsing, navigating the site and performing reservations and payments via the site. Access-based consuming services differ more generally from their more traditional counterparts by their heavy utilization of mobile channels, i.e. smartphones. AirBnB is no exception to this, and the service provides mobile "apps" on all major mobile platforms (iOS, Android). To fully utilize AirBnB, it is thus necessary for a consumer to have the resources (smartphone) and skills to use the service via its mobile platform. Facilitating conditions can thus be expected to be especially important in the case of studying the intention to use AirBnB (and services like it). If the use experience of AirBnB is not compatible with the current existing needs and skills of a potential adopter, the user could naturally be hypothesized to be less inclined to adopt the services. For example, if a consumer is not familiar with smart phones, AirBnB's compatibility is not congruent.

*Thus, H7: Facilitating conditions positively influence consumer intention to use AirBnB.*

## 2.2.7 Social Influence

Social influence is another construct that has been present in various forms in nearly every major technology acceptance model. In the Theories of Reasoned Action and Planned Behavior this construct is called *subjective norm*, as mentioned in 2.1.1. Despite missing as a construct from the original Technology Acceptance Model, in TAM2 a social dimension was added to the model, which improved its predictive capabilities considerably (Venkatesh and Davis 2000).

Social influence is defined here as the degree to which a consumer's important others (friends, family etc.) believe he or she should use the technology (Venkatesh, Thong, and Xu 2012). It can thus be viewed as a degree of social or peer pressure a consumer perceives related to the adoption of a particular technology.

As mentioned previously, social influence has been found to be a fundamental construct in technology adoption research and is well empirically supported. There are, however, some conflicting results between voluntary (consumer) and non-voluntary contexts. For example, in their seminal paper on UTAUT Venkatesh et. al. (2003) found that social influence was not a significant predictor of behavior in voluntary (consumer) settings, but in a workplace (non-voluntary) context the construct was a significant predictor of behavior. In their formation of UTAUT2, Venkatesh et. al. (2012) studied this construct again. The effect of social influence was slightly diminished in voluntary settings compared to non-voluntary contexts, but its effect was still statistically significant.

Similar contradictory results have been found in adoption research of online travel purchasing. Lee, Qu, and Kim (2007) found that subjective norm (social influence) had a statistically significant impact on Korean consumer's intentions to purchase travel online. However other similar and recent studies in 2001, 2005 and 2012 found no significance in the social influence construct (Amaro and Duarte 2013). However, Dörr et. al. (2013) found that subjective norms were the strongest predictors of the intention to use music-as-a service (services such as Spotify) by consumers currently using illegal downloads as their main source of music. This shows that the power of subjective norms is strongly contextual – among music pirates subjective norms matter more than among online purchasers of travel-related services.

In the case of AirBnB and access-based consuming services, it will be interesting to see whether social influence plays a role in adoption. These services are still novel for most consumers, so social influences could be argued to play a strong role in their adoption. Potential adopters of having close contacts with existing AirBnB-users could be argued to be more likely to adopt such services.

In sum, as this construct is a part of UTAUT2 and has been used in almost all technology adoption studies, it will be incorporated to the current research model as well. Thus the next hypothesis is:

*H8: Social influence is positively related to intention to use AirBnB.*

### **2.2.8 Price Value**

Price value was added as a construct to UTAUT2 by Venkatesh et. al. (2012) due to the logical fact that consumers are more price sensitive than corporate users of technology, because they have to shoulder the costs of the use themselves. Price value was defined by Venkatesh et. al (2012) as the “cognitive tradeoff between the perceived benefits of the applications and the monetary cost for using them”. Thus price value is positive if the perceived benefits exceed the monetary costs, and vice versa (Venkatesh, Thong, and Xu 2012).

Providing perceived value to customers is critical to any business enterprise and is constantly discussed among practitioners. Consequently most companies include value creation and provision in some form into their mission statements and strategies (Sweeney and Soutar 2001).

In the case of AirBnB, value is created through eliminating the traditional middlemen (hotels, travel agencies) from the equation and empowering consumers to create their own rental markets in this category around the world. Perceived value could be a strong incentive for consumers to use the service, as the prices of the room rentals of AirBnB could be argued to be highly competitive in most cases.

Thus, the next hypothesis is:

*H9: Price value is positively related to intention to use AirBnB.*

### **2.2.9 Materialism**

Materialism, defined here as a psychometric value of consumers, has recently received constant and considerable interest among consumer researchers, in public policy debates and among social commentators (Richins 2004; Scott, Martin, and Schouten 2014). Materialistic behavior is generally seen as harmful both at the individual and societal level, because it is one of the driving forces of environmental degradation, reduced biodiversity, natural resource overconsumption and global warming (Scott, Martin, and Schouten 2014).

Definitions of materialism vary among contexts. In popular parlance materialism is often defined as “a way of thinking that gives too much importance to material possessions rather than to spiritual or intellectual things” as defined by Merriam-Webster Encyclopedia 2014. Studying materialism at the level of an individual consumer (versus studying it at a level of cultures) provides rich and exciting opportunities for research. Individual differences in materialism provide new explanatory power

with regards to consumer reactions and variance in behavior in multiple consumer research contexts (Richins and Dawson 1992).

In developing a reliable, valid scale for consumer materialism, Richins and Dawson (1992) defined materialism based on an extensive review of previous multidisciplinary research along three central themes. Firstly, consumers high on materialistic tendencies place greater emphasis than others on *acquisition centrality*. Consequently, materialists place high value on acquiring and having possessions. A high level of material consumption is a central theme in materialists' lives and serves as a central tenet in their lives and as a goal guiding their actions (Richins and Dawson 1992). Secondly, materialists believe that this *high level of consumption leads to happiness and well-being in their lives*, and in turn, a lack of consumption leads to misery and an unsatisfactory life. Materialists are indeed different from non-materialists in this regard: they place lesser (or non-existing) emphasis on other sources of happiness such as personal relationships, personal development or unique life experiences (Richins and Dawson 1992). Thirdly, materialists *view success as a determinant of the quality and amount of possessions a consumer achieves*. This applies to themselves as well as others. Materialists derive value and a greater self-image from the (monetary) market-value of their possessions, not the satisfaction their possessions produce (Richins and Dawson 1992). According to Richins and Dawson (1992), these three themes of materialism are viewed typical and logical by consumers themselves as well.

Along similar lines, Belk (1985) defined materialistic consumers to have a greater tendency to exhibit three sub-traits: *possessiveness, envy and non-generosity*. *Possessiveness* was defined here to mean a tendency to retain and guard one's ownership of possessions (Belk 1985) and to be concerned about losing one's possessions. Moreover, possessiveness means wanting strong ownership instead of the lesser forms of renting, borrowing or sharing and a tendency to retain and save possessions (Belk 1985). *Envy* is considered by Belk (1985) to entail desire for others' possessions (physical, experiences or people) and resentment of the owner of these possessions – especially if the other person is perceived to be less worthy of them. Envy is generally considered a harmful and negative trait that can lead to crime and destructive behavior (Belk 1985). Lastly, Belk (1985) defined *non-generosity* to be “unwillingness to give or share possessions with others”. All of these three traits could be argued to be harmful to the adoption of a service like AirBnB, since the use involves at least moderate amounts of sharing and rental. Naturally AirBnB users also stay in other people's homes, and thus envious behavioristic patterns might lead to discomfort.

Examining materialism as a determinant of consumer adoption of AirBnB here was prompted by recent consumer research by Bardhi, Eckhardt, and Arnould (2012). Bardhi et. al. (2012) examined consumer relationship to possessions in the context of global nomadism, i.e. citizens who travel and relocate internationally frequently. They found these consumers to have a “liquid” relationship to possessions. This “liquidness” was characterized to comprise of three central components: situational value, use-value and immateriality (Bardhi, Eckhardt, and Arnould 2012). Based on (the scant) previous research on access-based consumption (c.f. Bardhi and Eckhardt 2009, 2012; Moeller and Wittkowski 2010), these same values could be central to access-based consumption, and thus the question whether consumers engaging in access-based consumption are materialistic is an interesting one. As consumers engaging in the use of AirBnB have many of the same characteristics as global nomads (placing high value on use and situational value of items), it could be hypothesized that they are also less materialistic than the general population.

In addition, previous research has found that consumers high in materialistic values also exhibit profiles of high neuroticism and low agreeableness (Watson 2014). These are thus the two main personality traits that accompany materialism. Neuroticism is one of the 5 main character dimensions of a personality, can be defined as a tendency to be overly negative for prolonged periods of time, and is usually accompanied by prolonged states of anxiety, moodiness, worry, envy, and jealousy (Thompson 2008). Agreeableness is another of the 5 character dimensions, and depicts how warm, kind, affectionate, cooperative and sympathetic a person is (Thompson 2008).

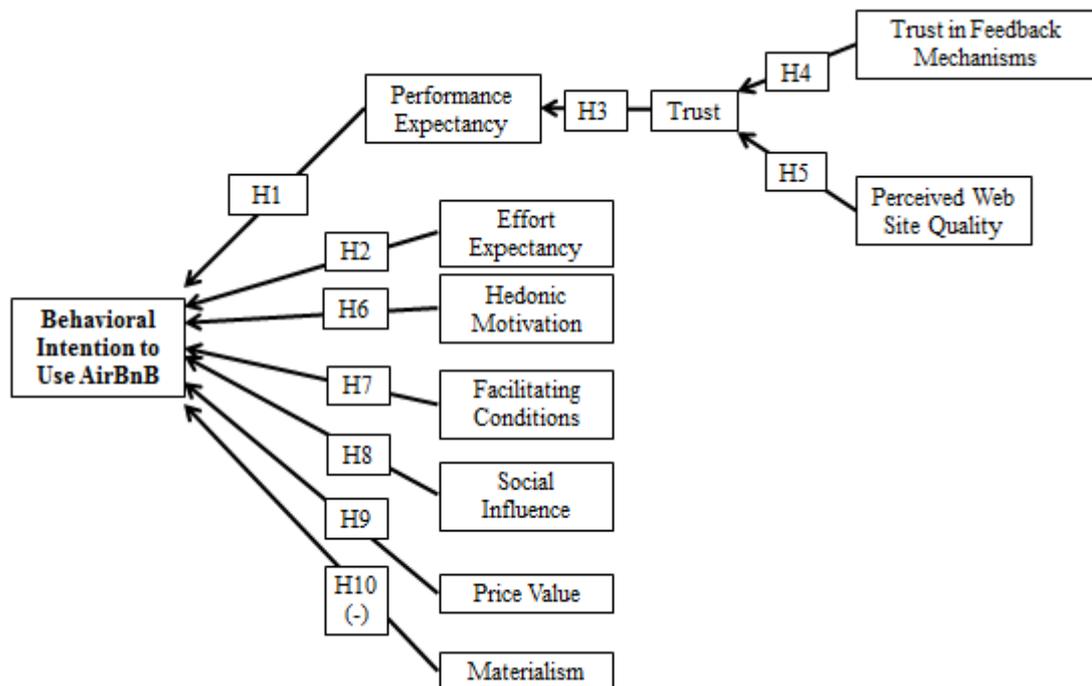
Since access-based consuming requires at least moderate levels of trust and cooperation, a logical conclusion would be that consumers exhibiting high levels of materialism (defined here as scoring highly on the scale developed by Richins (2004)) are not optimally suited for these types of consumption activities. Thus, the last hypothesis is:

*H10: The more materialistic the consumer, the lesser his/her intention to use AirBnB.*

## 2.3 Final Research Model

The following figure presents the final research model along with a list of hypotheses based on the literature review.

**Figure 7. Final Research Model and Summary of Hypotheses**



Path	Hypothesis
PE -> BI	H1
EE -> BI	H2
Trust -> PE	H3
FB -> Trust	H4
WQ -> Trust	H5
HM -> BI	H6
FC -> BI	H7
SI -> BI	H8
PV -> BI	H9
MM -> BI	H10

### 3. Methodology

This chapter introduces the empirical methods utilized in the study. First the quantitative methods employed are introduced, and thereafter the empirical data collection process and its development are explained.

#### 3.1 Structural Equation Modeling

The purpose of this study is to test empirically the proposed conceptual model that was introduced based on previous research and literature. The interplay between the suggested constructs is also of interest; for example the strengths of relationships between the different constructs. As can be seen from the literature review part, all the constructs used in the study have been previously validated. However this is a novel context, so the validity and reliability of the constructs must first be studied. Techniques from the structural equation modeling (SEM) family were employed to test the constructs and to validate and revise the proposed model. The analysis was done using IBM SPSS v. 22 and IBM Amos v. 22 software.

Structural equation modeling is a second-generation family of statistical procedures that can be used to test and estimate causal relations (Bagozzi and Yi 2011). SEM includes both exploratory and confirmatory methods. Although the constructs used in the model have been previously validated empirically, it is still necessary to ensure their validity and reliability in this context. SEM moreover allows for the use of latent or theoretical variables – variables that cannot be measured directly but are estimated in the model through their manifest variables (in this case their survey items). This necessitated the choice of SEM as this study's primary methodology, as the model includes several latent variables that are measured through their manifest variables.

SEM is a large-sample technique (Kline, 2005). The more complex the model being investigated, the more data is required. There are no commonly agreed upon “adequate” sample sizes for SEM, and guidelines vary. Bagozzi and Yi (2011) recommend a sample of at least 100, preferably 200 or more. Kline (2005) provides the following rough guidelines: under 100 case -samples can be considered small, 100-200 to medium, and over 200 large. This study thus falls in the medium range sample, as there are a total of 124 usable cases to be examined.

#### 3.2 Data Collection

The research data was collected via an online survey. The survey was distributed to respondents via Facebook. 491 participants were invited to take the survey, resulting in 124 usable, complete

answers (a response rate of 25.25 %). The sample largely represents the researchers' extended social circle, i.e. it is non-random. 91.1 % of the respondents were 19-30 years old, with 53.2 % of age 19-25. A table of the demographics of the population of the survey is next presented.

**Table 1. Demographic Characteristics of the Respondents**

<b>Demographic characteristic</b>	<b>Nr. of respondents</b>	<b>%</b>
<b>Age</b>		
0-18	1	0.8
19-25	66	53.2
26-30	47	37.9
31-40	4	3.2
41-50	2	1.6
over 51	4	3.2
<b>Education level</b>		
Vocational school	1	0.8
High school	17	13.7
Bachelor's degree	67	54.0
Master's degree or higher	33	26.6
Other	6	4.8
<b>Gender</b>		
Female	65	52.4
Male	59	47.6
<b>Online purchasing freq. during last 3 months</b>		
0	7	5.6
1-3 times	64	51.6
4-6 times	27	21.8
7 or more times	26	21.0
<b>Previous experience about Airbnb</b>		
No	62	50.0
I have visited the site but not booked anything.	35	28.2
Yes	27	21.8

The gender division of the sample is quite even, with 52.4 % female and 47.6 % male respondents respectively. The education level of the sample is quite high, with 54 % having a Bachelor's degree and 26.6 % having completed a Master's degree or a higher degree.

Moreover the sample consists largely of frequent users of different kinds of online purchasing, with only 5.6 % reporting that they hadn't purchased any products or services online during the last three months. Half of the sample had no previous experience with AirBnB, 28.2 % had visited the site but not booked anything, and 21.8 % had previously used the service.

Although the sample is non-random, it could be argued that it represents the main potential target group of AirBnB – young, highly educated individuals who buy frequently online. The findings however cannot be generalized to the general population, but the proposed conceptual model can be tested and results can be obtained from the potential main target group of AirBnB.

### 3.3 Survey Development

Since the actual use of AirBnB is still quite a new phenomenon, it would be counter-productive and difficult to study only actual users of AirBnB. The current, actual users of AirBnB are high on the innovation diffusion curve (Rogers, 1995) so studying their behavior would lead to skewed results in terms of the general population. Therefore the approach taken in this study was to study intentions of use, which are highly correlated with actual use (c.f. Venkatesh and Davis 2000). In general, people can be expected to do what they say they intend to do on a fairly good confidence level (Ajzen 1991).

Thus the respondents were given a real life scenario (that can be found in Appendix A) and were induced to use AirBnB in an everyday situation. Thereafter the survey was administered.

The survey itself was developed from an extensive literature review covering such diverse disciplines as information systems research, psychology and relevant consumer behavior theories and marketing literature. Relevant constructs were identified from existing literature to study this new context, use of access-based consumption services and as a case in point, AirBnB. The main core of the model is derived from the latest influential model in consumer technology acceptance literature, Venkatesh et. al's UTAUT2. This model was modified to fit the context of the study, with some constructs removed as inappropriate (such as habit from the original model) and some added to study the hypothesized causalities.

Some of the indicators were used unaltered, and some went through slight modifications to fit the study in context. The modifications were minor in nature and were done to adopt the indicators to the context of AirBnB.

All items were scaled with a 7-point Likert scale with 1 = “strongly disagree” and 7 = “strongly agree”. Two items were reverse scaled to test for anomalies and to make sure the answers given were consistent. The survey was administered in English and Finnish. The Finnish translation was done with careful consideration for the wording of the questions. Even slight changes in context between the languages would cause problems in the analysis so careful attention was paid to this point. The initial survey was pretested with 5 people and revisions made based on the comments received. The final version of the survey was released after further consultation with the test group.

At the end of the quantitative survey the respondents were given a chance to openly express comments and thoughts about AirBnB based on their previous experiences and attitudes that had been formed. The section yielded interesting comments that will be thematically introduced based on the construct-structure along with the quantitative results.

## 4. Data Analysis and Results

This chapter introduces the data analysis process that was done using structural equation modeling. The measurement model and its modification will be firstly discussed, followed by the structural model.

### 4.1 Initial Measurement Model

Before engaging in path analysis and testing the structural model, both the measurement model and the structural model need to be analyzed in terms of the quality of their constructs (Fornell and Larcker 1981). Thus, firstly, factor loadings were analyzed to identify any problematic indicators and to assess convergent validity. Secondly, reliability of the constructs was studied through composite reliability (CR) and average variance extracted (AVE). The table containing the constructs, indicators, factor loadings and their means and standard deviations is presented next.

**Table 2. Initial Constructs, Indicators, Factor loadings, Means and Standard Deviations**

<b>Construct and indicators</b>	<b>Factor loading</b>	<b>Based On</b>	<b>Mean</b>	<b>Std</b>
<b>F1 : Behavioral Intention</b>				
[BI1] I intend to use Airbnb in the future.	0.884	Venkatesh et. al. (2012)	4.927	1.899
[BI2] I will always try to use Airbnb when I am searching for accommodations.	0.776	Venkatesh et. al. (2012)	3.863	1.735
[BI3] I plan to use Airbnb frequently when searching for accommodations.	0.829	Venkatesh et. al. (2012)	4	1.632
<b>F2 : Effort Expectancy</b>				
[EE1] Learning how to use Airbnb is easy for me.	0.768	Venkatesh et. al. (2012)	5.839	1.315
[EE2] My interaction with Airbnb is clear and understandable.	0.919	Venkatesh et. al. (2012)	5.435	1.177
[EE3] I find Airbnb easy to use.	0.885	Venkatesh et. al. (2012)	6.923	1.178
<b>F3. Perceived Effectiveness of Feedback Mechanism</b>				
[FB1] I feel confident that Airbnb's Ratings & Feedback mechanism (comments, stars and ratings by other users) gives accurate information about the users' reputation.	0.783	Pavlou & Gefen (2004)	5.113	1.218
[FB2] A considerable amount of useful feedback information about the transaction history of different users is available through Airbnb's Ratings & Feedback mechanism.	0.804	Pavlou & Gefen (2004)	5.032	1.249
[FB3] I believe that the Ratings & Feedback mechanism in Airbnb's marketplace is effective.	0.822	Pavlou & Gefen (2004)	4.694	1.163
[FB4] I believe that the Ratings & Feedback mechanism in Airbnb's marketplace is reliable and dependable.	0.774	Pavlou & Gefen (2004)	4.903	1.158
<b>F4: Facilitating Conditions</b>				
[FC1] I have the resources (smartphone, internet access etc.) necessary to use Airbnb.	0.591	Venkatesh et. al. (2012)	6.734	1.068
[FC2] I have the knowledge necessary to use Airbnb.	0.66	Venkatesh et. al. (2012)	5.621	1.406
[FC3] Using Airbnb would fit into my lifestyle.	0.779	Moore & Benbasat (1991)	4.863	1.472
[FC4] I can get help from others when I have difficulties using Airbnb.	0.372	Venkatesh et. al. (2012)	4.863	1.537
<b>F5: Hedonic Motivation</b>				
[HM1] Using Airbnb is fun.	0.903	Venkatesh et. al. (2012)	4.903	1.411
[HM2] Using Airbnb is enjoyable.	0.864	Venkatesh et. al. (2012)	5	1.281
[HM3] Using Airbnb is very entertaining.	0.776	Venkatesh et. al. (2012)	4.355	1.351
<b>F6: Materialism - Centrality</b>				
[MC1/RQ] I try to keep my life simple, as far as possessions are concerned.	0.512	Richins (2004)	4.355	1.629
[MC2] Buying things gives me a lot of pleasure.	0.687	Richins (2004)	4.161	1.589
[MC3] I like a lot of luxury in my life.	0.786	Richins (2004)	4.258	1.647
<b>F7: Materialism - Happiness</b>				
[MH1] My life would be better if I owned certain things I don't have.	0.786	Richins (2004)	3.540	1.619
[MH2] I'd be happier if I could afford to buy more things.	0.882	Richins (2004)	3.927	1.628
[MH3] It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.	0.627	Richins (2004)	3.403	1.771

*Note: All the loadings are significant at  $p < 0.001$ . A 7-point Likert scale was used in the data collection.*

**Table 2 continued**

<b>F8: Materialism - Success</b>				
[MS1] I admire people who own expensive homes, cars, and clothes.	0.711	Richins (2004)	3.435	1.593
[MS2] The things I own say a lot about how well I'm doing in life.	0.758	Richins (2004)	3.346	1.448
[MS3] I like to own things that impress people.	0.851	Richins (2004)	3.483	1.620
<b>F9: Performance Expectancy</b>				
[PE1] I find Airbnb useful in finding accommodations.	0.871	Venkatesh et. al (2012)	5.209	1.536
[PE2] Using Airbnb helps me accomplish things more quickly.	0.725	Venkatesh et. al (2012)	5.040	1.427
[PE3] I think Airbnb is a practical and handy resource in finding accommodations.	0.787	Venkatesh et. al (2012)	5.435	1.263
<b>F10: Price Value</b>				
[PV1] Airbnb offers reasonably priced accommodations.	0.816	Venkatesh et. al (2012)	5.306	1.368
[PV2] The accommodations available through Airbnb are good value for the money.	0.842	Venkatesh et. al (2012)	5.669	1.292
[PV3] At the current prices, the accommodations available in Airbnb provide good value for the money.	0.921	Venkatesh et. al (2012)	5.217	1.233
<b>F11: Social Influence</b>				
[SI1] It is expected that people like me would use Airbnb.	0.403	Nysveen et. al. (2005)	5.467	1.439
[SI2] Using Airbnb would improve my image among my peers.	0.84	Moore & Benbasat (1991)	3.564	1.520
[SI3] People who are important to me probably think that I should use Airbnb.	0.79	Venkatesh et. al (2012)	3.919	1.388
<b>F12: Trust</b>				
[T1] Airbnb probably knows how to provide excellent service.	0.787	Hwang and Kim (2007)	4.838	1.128
[T2] Promises made by Airbnb are likely to be reliable.	0.836	Hwang and Kim (2007)	4.854	1.159
[T3] I expect that Airbnb will keep promises it makes.	0.741	Hwang and Kim (2007)	5.508	1.122
[T4] I think that Airbnb is a trustworthy intermediary.	0.802	Hwang and Kim (2007)	4.959	1.290
<b>F13: Perceived Website Quality</b>				
[WQ1] Airbnb's Web site is of high quality.	0.941	Everard & Galletta (2006)	5.322	1.285
[WQ2] The likely quality of Airbnb's Web site is extremely high.	0.81	Everard & Galletta (2006)	4.577	1.240
[WQ3RQ] Airbnb's Web site appears to be of very poor quality.	0.633	Everard & Galletta (2006)	5.693	1.351

*Note: All the loadings are significant at  $p < 0.001$ . A 7-point Likert scale was used in the data collection.*

The highest means were measured from constructs of effort expectancy, price value, perceived website quality and facilitating conditions. Therefore it can be assumed that using AirBnB was straightly clear and easy for most people. The sample generally also had the necessary tools (e.g. smartphones) to use the service so these weren't an issue. The apartments available through AirBnB were also considered to have a good price value. In addition, the website quality was considered high by most respondents, indicated by the high means of this construct. Performance expectancy also gained a mean score of greater than five for all of its indicators, so most respondents felt that the service is or would be useful in their lives.

The initial confirmatory factor analysis revealed some poorly loading indicators. A cut-off point of 0.60-0.70 is generally considered to be satisfactory (Bagozzi and Yi 2011), and there were four indicators that didn't achieve this loading level. The indicators in question were indicator number one of the social influence factor ("It is expected that people like me would use AirBnB), indicator one of the success component of the materialism factor ("I try to keep my life simple, as far as possessions are concerned) and two indicators of the facilitating conditions -factor.

The initial measurement model was analyzed via several model fit statistics proposed by Hu and Bentler (1999). The statistics for the initial model were as follows: comparative fit index (CFI): 0.817, normed fit index: 0.682, root mean square of approximation (RMSEA): 0.084, degrees of freedom 761,  $\chi^2$ : 1422.449 ;  $\chi^2/DF = 1.869$ .

Thereafter convergent validity, average variance extracted and discriminant validity of the initial model constructs were examined according to methods proposed by (Fornell and Larcker 1981).

The following formulae were used (Fornell and Larcker 1981):

$$CR = \frac{\left(\sum_{i=1}^n L_i\right)^2}{\left(\left(\sum_{i=1}^n L_i\right)^2 + \left(\sum_{i=1}^n (1-L_i^2)\right)^2\right)}, AVE = \frac{\sum_{i=1}^n L_i^2}{n},$$

The results of these statistics for each construct are next presented.

**Table 3. Initial Correlation Matrix, CR, AVE and AVE square root (in bold)**

Construct	CR	AVE	1	2	3	4	5	6	7	8	9	10	11
1. FB	0.87	0.63	<b>0.796</b>										
2. BI	0.87	0.69	0.626	<b>0.831</b>									
3. EE	0.89	0.74	0.42	0.325	<b>0.859</b>								
4. HM	0.88	0.72	0.694	0.754	0.481	<b>0.849</b>							
5. PE	0.84	0.63	0.748	0.862	0.561	0.74	<b>0.797</b>						
6. PV	0.89	0.74	0.542	0.46	0.486	0.634	0.716	<b>0.861</b>					
7.SI	0.73	0.5	0.394	0.569	0.049	0.449	0.5	0.355	<b>0.705</b>				
8.WQ	0.84	0.65	0.441	0.443	0.769	0.504	0.538	0.402	0.233	<b>0.805</b>			
9.Trust	0.87	0.63	0.713	0.64	0.561	0.613	0.669	0.398	0.423	0.641	<b>0.792</b>		
10. FC	0.7	0.38	0.694	0.798	0.623	0.862	0.933	0.852	0.482	0.571	0.658	<b>0.618</b>	
11. MM	0.88	0.72	0.087	-0.138	-0.107	0.001	-0.074	0.058	0.134	-0.094	0.018	0.057	<b>0.846</b>

Note: PE=Performance Expectancy, BI=Behavioral Intention, EE=Effort Expectancy, FB= Perceived Effectiveness of Feedback Mechanism, WQ=Perceived Web Site Quality, HM=Hedonic Motivation, FC=Facilitating Conditions, SI=Social Influence, PV=Price Value, MM=Materialism

Composite reliability should be above 0.7 and AVE over 0.5 (Fornell and Larcker 1981). All constructs except facilitating conditions passed these thresholds. Since FC has an AVE of below 0.5, its variance due to measurement error is greater than the variance due to the construct. Therefore, the convergent validity of the construct is questionable. The situation was not improved by removing the most poorly loading (factor loading of 0.372) indicator (“I can get help from others when I have difficulties using AirBnB”).

Based on this analysis, the following changes were made for the final measurement model. Firstly, the construct facilitating conditions was rejected and removed entirely. Secondly, the first indicator of social influence was rejected (it had a factor loading of 0.403). Thirdly, the first indicator of the centrality component of the materialism factor was rejected (it had a loading of 0.512). These changes improved the model fit considerably, as can be seen next.

#### 4.2 Final Measurement Model

After the changes done following the analysis of the initial measurement model, a final model was achieved with the following loadings and constructs.

**Table 4. Final Constructs, Indicators, Factor loadings, Means and Standard Deviations**

<b>Construct and indicators</b>	<b>Factor loading</b>	<b>Based On</b>	<b>Mean</b>	<b>Std</b>
<b>F1 : Behavioral Intention</b>				
[BI1] I intend to use Airbnb in the future.	0.876	Venkatesh et. al. (2012)	4.927	1.520
[BI2] I will always try to use Airbnb when I am searching for accommodations.	0.786	Venkatesh et. al. (2012)	3.862	1,74
[BI3] I plan to use Airbnb frequently when searching for accommodations.	0.833	Venkatesh et. al. (2012)	4,00	1.632
<b>F2 : Effort Expectancy</b>				
[EE1] Learning how to use Airbnb is easy for me.	0.762	Venkatesh et. al. (2012)	5.838	1,52
[EE2] My interaction with Airbnb is clear and understandable.	0.922	Venkatesh et. al. (2012)	5.435	1.177
[EE3] I find Airbnb easy to use.	0.886	Venkatesh et. al. (2012)	5.459	1.178
<b>F3. Perceived Effectiveness of Feedback Mechanism</b>				
[FB1] I feel confident that Airbnb's Ratings & Feedback mechanism (comments, stars and ratings by other users) gives accurate information about the users' reputation.	0.781	Pavlou & Gefen (2004)	5.112	1.217
[FB2] A considerable amount of useful feedback information about the transaction history of different users is available through Airbnb's Ratings & Feedback mechanism.	0.805	Pavlou & Gefen (2004)	5.032	1.248
[FB3] I believe that the Ratings & Feedback mechanism in Airbnb's marketplace is effective.	0.823	Pavlou & Gefen (2004)	4.693	1.162
[FB4] I believe that the Ratings & Feedback mechanism in Airbnb's marketplace is reliable and dependable.	0.772	Pavlou & Gefen (2004)	4.903	1.157
<b>F4: Hedonic Motivation</b>				
[HM1] Using Airbnb is fun.	0.911	Venkatesh et. al. (2012)	4.903	1.410
[HM2] Using Airbnb is enjoyable.	0.852	Venkatesh et. al. (2012)	5,00	1.281
[HM3] Using Airbnb is very entertaining.	0.786	Venkatesh et. al. (2012)	4.354	1.350
<b>F5: Materialism</b>				
[MM1] Centrality	0.998	Richins (2004)		
[MM2] Happiness	0.606	Richins (2004)		
[MM3] Success	0.956	Richins (2004)		
<b>F6: Materialism - Centrality</b>				
[MC2] Buying things gives me a lot of pleasure.	0.694	Richins (2004)	4.161	1.589
[MC3] I like a lot of luxury in my life.	0.715	Richins (2004)	4.258	1.647
<b>F7: Materialism - Happiness</b>				
[MH1] My life would be better if I owned certain things I don't have.	0.784	Richins (2004)	3.540	1.619
[MH2] I'd be happier if I could afford to buy more things.	0.882	Richins (2004)	3.927	1.628
[MH3] It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.	0.631	Richins (2004)	3.403	1.771

**Table 4 Continued**

<b>F8: Materialism - Success</b>				
[MS1] I admire people who own expensive homes, cars, and clothes.	0.716	Richins (2004)	3.435	1.593
[MS2] The things I own say a lot about how well I'm doing in life.	0.754	Richins (2004)	3.346	1.448
[MS3] I like to own things that impress people.	0.851	Richins (2004)	3.483	1.620
<b>F9: Performance Expectancy</b>				
[PE1] I find Airbnb useful in finding accommodations.	0.863	Venkatesh et. al (2012)	5.209	1.536
[PE2] Using Airbnb helps me accomplish things more quickly.	0.737	Venkatesh et. al (2012)	5.040	1.427
[PE3] I think Airbnb is a practical and handy resource in finding accommodations.	0.785	Venkatesh et. al (2012)	5.435	1.263
<b>F10: Price Value</b>				
[PV1] Airbnb offers reasonably priced accommodations.	0.816	Venkatesh et. al (2012)	5.306	1.368
[PV2] The accommodations available through Airbnb are good value for the money.	0.847	Venkatesh et. al (2012)	5.669	1.292
[PV3] At the current prices, the accommodations available in Airbnb provide good value for the money.	0.918	Venkatesh et. al (2012)	5.217	1.233
<b>F11: Social Influence</b>				
[SI2] Using Airbnb would improve my image among my peers.	0.905	Moore & Benbasat (1991)	3.564	1.520
[SI3] People who are important to me probably think that I should use Airbnb.	0.764	Venkatesh et. al (2012)	3.919	1.388
<b>F12: Trust</b>				
[T1] Airbnb probably knows how to provide excellent service.	0.787	Hwang and Kim (2007)	4.838	1.128
[T2] Promises made by Airbnb are likely to be reliable.	0.838	Hwang and Kim (2007)	4.854	1.159
[T3] I expect that Airbnb will keep promises it makes.	0.738	Hwang and Kim (2007)	5.508	1.122
[T4] I think that Airbnb is a trustworthy intermediary.	0.801	Hwang and Kim (2007)	4.959	1.290
<b>F13: Perceived Website Quality</b>				
[WQ1] Airbnb's Web site is of high quality.	0.941	Everard & Galletta (2006)	5.322	1.284
[WQ2] The likely quality of Airbnb's Web site is extremely high.	0.811	Everard & Galletta (2006)	4.577	1.240
[WQ3RQ] Airbnb's Web site appears to be of very poor quality.	0.633	Everard & Galletta (2006)	5.693	1.350

*Note: Final CFA model goodness of fit indexes:  $\chi^2$ : 879.11; DF: 546;  $\chi^2/DF$ : 1.61; RMSEA: 0.07 (RMSEA 90 % confidence levels: 0.062; 0.079); NFI 0.759; CFI 0.889. Materialism was treated as a second-order factor according to the procedure suggested by Richins (2004), with three indicators: success, centrality and happiness.*

The final CFA model's fit indexes improved markedly with the actions taken after the initial analysis. The final RMSEA-value is 0.07, which falls between the usually advised 0.05-0.08 range (Klein, 2005). The  $\chi^2/DF$  –statistic is 1.61, which is below 3 as suggested by Klein (2005). The model's comparative fit index (CFI) is 0.889, which is quite close to the usually suggested level of >0.9.

The final measurement model's correlation matrix along with the construct's average variance extracted and composite reliability statistics is presented next.

**Table 5. Final Correlation Matrix, CR, AVE and AVE square root (in bold)**

Construct	CR	AVE	1	2	3	4	5	6	7	8	9	10
<b>1. FB</b>	0.87	0.63	<b>0.796</b>									
<b>2. BI</b>	0.87	0.69	0.624	<b>0.832</b>								
<b>3. EE</b>	0.89	0.74	0.418	0.323	<b>0.859</b>							
<b>4. HM</b>	0.89	0.72	0.688	0.748	0.472	<b>0.851</b>						
<b>5. PE</b>	0.84	0.63	0.748	0.859	0.561	0.737	<b>0.797</b>					
<b>6. PV</b>	0.90	0.74	0.543	0.455	0.485	0.632	0.719	<b>0.861</b>				
<b>7. SI</b>	0.82	0.70	0.333	0.501	0.013	0.395	0.425	0.285	<b>0.837</b>			
<b>8. WQ</b>	0.84	0.65	0.441	0.442	0.768	0.497	0.541	0.403	0.214	<b>0.805</b>		
<b>9. Trust</b>	0.87	0.62	0.714	0.64	0.558	0.607	0.669	0.399	0.386	0.641	<b>0.792</b>	
<b>10. MM</b>	0.90	0.76	0.105	-0.091	-0.094	0.057	-0.035	0.084	0.167	-0.087	0.036	<b>0.871</b>

Note: PE=Performance Expectancy, BI=Behavioral Intention, EE=Effort Expectancy, FB= Perceived Effectiveness of Feedback Mechanism, WQ=Perceived Web Site Quality, HM=Hedonic Motivation, FC=Facilitating Conditions, SI=Social Influence, PV=Price Value, MM=Materialism

All factors have AVE's of over 0.5 and composite reliabilities of over 0.7. Thus satisfactory convergent and discriminant validities have been achieved. Next, the structural model will be evaluated and tested.

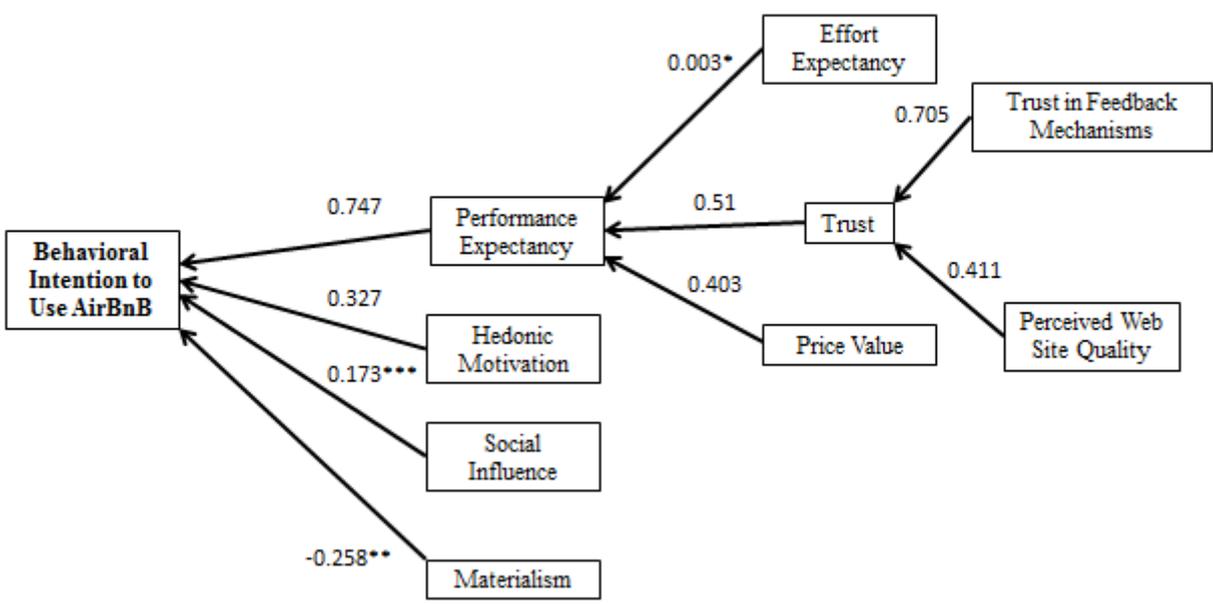
### 4.3 Structural Model Evaluation

The structural model was next evaluated via path analysis to test the proposed hypotheses and to understand the factors influencing consumer adoption of AirBnB. The framework, presented in chapter 2, was tested by examining the significance and strength of the standardized path coefficients between the factors. After doing an initial run of the hypothesized framework, the initial structural model was modified in two ways to improve model fit. Firstly, price value's path was changed from behavioral intention to performance expectancy. Secondly, the same was done for effort expectancy. This was done after the initial analysis revealed error-term co-variation between price value and performance expectancy and between effort expectancy and performance expectancy. Thus regression paths were added between these factors. This improved the model fit, R<sup>2</sup>-values for the dependent variables and returned path coefficients with more significant measures.

The change was also theoretically sound – it can be argued that it is logical that with increasing perceived price value, expected performance is greater for the service and the same is true for effort expectancy. When one modifies hypothesized path ways based on empirical results, it is highly important that the changes are based on logical soundness (not only on model results and fit indexes) (Bagozzi and Yi 2011), a condition that was achieved here. Therefore the model adopted from Venkatesh, Thong, and Xu (2012) was slightly modified in light of the context and the results produced.

The final structural measurement model produced the following fit indexes: CFI=0.887; NFI= 0.753; RMSEA= 0.07;  $\chi^2= 900.471$ ; DF=559;  $\chi^2/DF=1.611$ . Thus the model can be accepted as suitable for hypothesis testing. The following figure presents the final structural model, and thereafter a table of the squared multiple correlation ( $R^2$ ) values.

**Figure 8. Final Structural Model**



Note: All but two standardized path coefficients are significant at  $p < 0.001$ . Goodness of fit-statistics for the final model: CFI=0.887; NFI= 0.753; RMSEA= 0.07 (90 % confidence level: 0.062;0.079);  $\chi^2= 900.471$ ; DF=559;  $\chi^2/DF=1.611$ , chi-square test p-value 0.

\*=N.S. \*\*=Significant at  $p < .10$  \*\*\*= Significant at  $p < .05$ . All other pathways are significant at  $p < .01$

**Table 6. Squared Multiple Correlation Estimates**

<b>Factor</b>	Behavioral Intention	Performance Expectancy	Trust
<b>R<sup>2</sup>-value</b>	0.781	0.714	0.71

The R<sup>2</sup>-values specify how much of the variance of each dependent variable is explained by the model. All three dependent variables' R<sup>2</sup>-values can be considered quite high, with the most important one (for the overall model), behavioral intention, having the highest value (0.781).

Some of the original hypotheses were rejected based on the results. The following table displays results of the hypothesis testing along with associated path coefficients and their p-values.

**Table 7. Hypothesis Test Results**

<b>Path</b>	<b>Standardized Estimate</b>	<b>P-value</b>	<b>Hypothesis</b>
PE -> BI	0.747	<0.001	H1: Supported
EE -> BI	0.003	0.968	H2: Not Supported
Trust -> PE	0.51	<0.001	H3: Supported
FB -> Trust	0.705	<0.001	H4: Supported
WQ -> Trust	0.411	<0.001	H5: Supported
HM -> BI	0.327	0.003	H6: Supported
FC -> BI	N/A	N/A	H7: Not Supported
SI -> BI	0.173	0.016	H8: Supported
PV -> BI	N/A	N/A	H9: Not Supported
MM -> BI	-0.258	0.054	H10: Supported

*Note: PE=Performance Expectancy, BI=Behavioral Intention, EE=Effort Expectancy, FB= Perceived Effectiveness of Feedback Mechanism, WQ=Perceived Web Site Quality, HM=Hedonic Motivation, FC=Facilitating Conditions, SI=Social Influence, PV=Price Value, MM=Materialism*

#### **4.4 Results**

The findings confirmed 7 of the initial 10 hypotheses. The 3 hypotheses not confirmed were effort expectancy's, facilitating condition's and price value's positive effect on behavioral intention (see table above). Price value turned out to have a statistically significant, indirect effect on behavioral intention through performance expectancy. Facilitating conditions was removed from the analysis at the confirmatory factor analysis stage, because it had a questionable convergent validity (implied by an AVE of <0.5). Facilitating conditions also had two poorly loading indicators and a significant negative effect on model fit. Effort expectancy also turned out not to have a statistically significant effect on intention to use AirBnB.

These two findings are contradictory to previous research (c.f. Moon and Kim 2001; Pavlou 2003). These results are probably explained by the characteristics of the sample population; the sample contained mostly young, highly-educated individuals who frequently shop online. Thus, using AirBnB likely seemed effortless and easy to most of the sample and was not a determining factor in whether a not a person intends to use AirBnB in the future. As mentioned before in this chapter, although the findings here are not generalizable to the general population, the sample in effect includes the core target segment of AirBnB and access-based consumption services in general. These services require and are based on the use of new technology, such as smartphones, “apps” and the internet.

In hypothesis 9 price value was expected to influence behavioral intention directly as per UTAUT2 (Venkatesh, Thong, and Xu 2012), but the effect turned out to be indirect through performance expectancy. The effect on performance expectancy had a path coefficient of 0,403 and was significant at the 0.001 level. Thus price value’s *direct* effect on behavioral intention can be calculated to be ~0.301 ( $0.403 * 0.747$ ). The finding is logical and relevant; consumers having a more positive perception of AirBnB’s price value were more likely to consider the service more useful in general, and thus more likely to use it in the future. The strong emphasis placed on the perceivably good price value for the service was evident in the comments provided by the survey respondents. One informant commented:

*AirBnB is an exceptionally great place to find apartments with good price value. Because of the service, I’ve probably halved my accommodation expenses in cities where lodging is otherwise extremely expensive.*

In contrast, the other 7 hypotheses were confirmed by the research. In Hypothesis 1, performance expectancy was expected to positively influence intention to use AirBnB, and this was confirmed with a very strong path coefficient, 0.747. Performance expectancy was thus the strongest predictor of future intended use, and this finding confirms earlier research findings that have also found expected performance to have the strongest effect on technology adoption in all mainstream models such as UTAUT, UTAUT2, TAM and TAM2 (Cunningham et al. 2005; Grandon and Pearson 2004; Teo 2001; Venkatesh and Davis 2000; Venkatesh, Thong, and Xu 2012). Thus, consumers are first and foremost most likely to adopt a new technology when it is actually perceived useful to them. Therefore this study contributes to the existing literature by validating this construct in a new, highly innovative and disruptive context.

In hypothesis 3, it was stated that trust would have a direct positive influence on performance expectancy, and thus indirectly on behavioral intention. This was confirmed with a path coefficient of 0.51, and therefore a direct effect of 0.38. Thus trust can be considered an integral part of the adoption process, as it affects how useful a potential user considers the service to be. Without perceived trust, AirBnB is less useful for consumers and therefore less likely to be adopted. This finding confirmed a central previous research finding about the importance of trust, especially in online e-commerce contexts (Beldad, de Jong, and Steehouder 2010; Chang, Cheung, and Lai 2005; D. Gefen, Karahanna, and Straub 2003; Kim, Ferrin, and Rao 2009; Palvia 2009).

Trust was found to be strongly influenced by both the perceived effectiveness of feedback mechanisms and perceived web site quality (hypotheses 4 and 5). Of these two, the perceived effectiveness of feedback mechanisms seems to be the stronger driver of trust; it had a path coefficient of 0.705 whereas perceived web site quality was found to have a coefficient of 0.411. Both were statistically significant at the  $p < 0.001$ -level. These findings highlight the importance of maintaining high quality websites and keeping them updated. In addition, the importance placed by consumers on the effectiveness of feedback mechanisms is highlighted. These mechanisms provide constant, relevant information to consumers regarding each other and can help in the creation of an atmosphere of trust. Honest, uncensored user reviews are therefore essential to any access-based consumption service. The importance of trust was also highlighted by the survey respondents' open comments at the end of the survey. One informant commented:

*I've reserved an apartment once through AirBnB, and it was canceled one month before the trip was supposed to take place. Might've been bad luck, but in the future I have no trust in the service.*

Another had had his/hers trust also broken:

*I've tried the service once, but the booking was cancelled before the trip. AirBnB offered me a 25 \$ gift certificate for a new reservation, but I would've much rather gotten help in quickly finding a replacement apartment instead of a few bucks of "discount". In the future I don't want any additional risk from last-minute cancellations, so I won't be using the service again.*

For this informant, the translations reduced trust:

*I used the service in the Finnish language variant, and some of the translations seemed ungraceful/unprofessional translations from English. I felt this reduced my trust towards the*

*service. In addition I was irritated that you had to be signed in to reserve lodgings – I've recently done a lot of hotel reserving online in various sites and logging in is not usually required.*

Moreover, previous research findings were confirmed by these findings. The positive effect of perceived web site quality has been confirmed by various previous studies (Hwang and Kim 2007; Jones and Leonard 2008). Effective feedback mechanisms have also been found to be important for consumers since the beginning of the e-commerce age in the 90's (Ba and Pavlou 2002; Chang, Cheung, and Tang 2013; Dellarocas 2003). These findings were thus now confirmed in this new context.

Hypothesis 6 stated that hedonic motivation would have a direct positive effect on the intention to use AirBnB in the future. This was confirmed with a relatively strong path coefficient of 0.327 (p-value 0.003). Utilitarian aspects of access-based consumption services such as AirBnB are therefore not likely to be the only significant determinant of consumer adoption. Enjoyment and having fun while using the service are also important as demonstrated by the strong path coefficient. Adding playful aspects to the service and promoting enjoyment through e.g. interaction and interesting material is important. In the case of AirBnB, the service has clearly taken this into account already by adding for example city and neighborhood guides to its site and making the whole user experience as enjoyable as possible. This approach should be continued and further improved upon.

Another finding of the research was that *social influence* was found to positively affect behavioral intention to use AirBnB. Social or peer pressure is thus also a factor in the adoption process. The path coefficient was the weakest of all the factors (0.176), indicating perhaps that this is not the most critical part of the process for most consumers. Using AirBnB or other access-based consuming services is not as visible a consumption act as many others, so social influence could play a smaller role in the process. However the path coefficient was still statistically significant, so the effect was confirmed to exist in the model. Therefore the result confirmed the results of previous research that has confirmed the existence of this effect (c.f. Dörr et al. 2013).

The last hypothesis stated that the more materialistic the consumer is on the materialism-scale developed by Richins (2004), the lesser his or hers intention to use AirBnB. This hypothesis was tentatively confirmed, since the path coefficient of -0.258 had a statistical significance of  $p=0.054$ , indicating a  $p<0.10$  significance level. Usually the cut-off point for statistical significance is 0.05 (c.f Klein, 2005), so the hypothesis can only be tentatively confirmed. The finding is however interesting since it combines literature from psychology and utilizes it in a consumer research/IS-research context. The basis for the hypothesis was previous research that had found that consumers

high on the materialism scale were more neurotic (Watson 2014). Neuroticism is a trait that could be argued not to be compatible with the use of access-based consumption services, since people exhibiting traits of neuroticism are characterized to be negative for prolonged periods of time, and is usually accompanied by prolonged states of anxiety, moodiness, worry, envy, and jealousy (Thompson 2008a). Thus the tentative confirmation of this hypothesis sheds more light on the materialism trait and adds a relevant finding to the literature on the subject.

To conclude the findings, 7 of the 10 hypotheses were confirmed. Firstly, performance expectancy, trust, hedonic motivation and social influence affected the intention to use AirBnB positively, with performance expectancy having the strongest path coefficient (and thus effect size of 0.747). Secondly, perceived web site quality and perceived effectiveness of feedback mechanisms lead to higher trust. Thirdly, higher trust and higher perceived price value lead to higher performance expectancy. Lastly, higher materialism lead to decreased intention to use AirBnB as hypothesized.

The statistically insignificant path coefficient of effort expectancy, and the low reliability of the facilitating conditions construct that lead to its rejection, require further research into their working mechanisms in a larger, non-random sample in this context.

## 5. Conclusions

This concluding chapter highlights the implications of the results, the limitations of the research and suggests further future areas of research. A synthesis of the results is first provided.

### 5.1 Discussion

The research was motivated by the increasing importance of the effective use of resources in the 21<sup>st</sup> century (Sheth, Sethia, and Srinivas 2010) and the rise of access-based consumption that has answered this challenge. Access-based consumption services such as AirBnB, Uber and TaskRabbit provide a new way for consumers to exchange value by matching those with unused resources with those that have temporary need of a specific resource. The field is garnering speed and growing rapidly. A recent funding round of AirBnB put the company valuation at 10 billion USD, larger than almost all traditional multinational hotel chains (Bradshaw, 2014). Another access-based consumption company, Uber, which relays taxi rides via a smart phone application, was recently valued at 17 billion USD, which is more than the market value of Hertz Global Holdings, the largest car rental company in the United States (Saitto and Stone, 2014). This mounting investor confidence in the field highlights its great growth potential, as well as the need for research for the reasons of its rapid success and increasing popularity.

Thus this study was set out to study the factors influencing consumer adoption of access-based consumption services, and as a case example, one of the most successful services, AirBnB, was studied. In addition, another purpose of the study was to study the relative importance of the different factors. A quantitative methodology was selected to answer these questions, specifically structural equation modeling. The phenomena was studied by using a survey based on previous research constructs from different fields, including information systems research (IS), marketing and psychology. The focus was on *intended, not actual* use. This resulted from the fact that AirBnB and services like it are still in their infancy, and studying their actual use would be unpractical and any potential sample high on the innovation diffusion curve, thus providing only a skewed picture of the general situation.

A qualitative nuance was introduced in the research by also gathering open comments from the respondents relating to the study question in hand.

The research revealed perceived usefulness, or performance expectancy, to be the main driver of intended (future) use. This finding is consistent with previous research on technology adoption: consumers usually adopt technologies only when they feel they provide actual value in use (c.f. Davis 1989). On the other hand, the hedonistic component of adoption also influences adoption, as shown by the positive influence of hedonic motivation on adoption. Thus utilitarian and hedonic components of service use both need to be taken into account, as has been shown by earlier research in different contexts, such as traditional online shopping (Childers et al. 2002).

Two important drivers of performance expectancy were uncovered by the research: price value and trust. One of the main advantages (or disadvantages, depending on who one asks) of access-based consumption services is their (current) unregulated nature. AirBnB-hosts generally leave capital income taxes unpaid, and they are free of most of the regulations affecting their direct traditional competition, i.e. hotels and hostels. This gives AirBnB-hosts a price advantage over traditional industry players, which has usually resulted in lower prices compared to similar traditional lodging arrangements. Consequently some hotel industry players have started legal proceedings against AirBnB and other access-based consumption service providers (The Economist, April 26<sup>th</sup> 2014, p.61-62). The lack of regulation in this new industry thus gives consumers the option to get better price value in exchange for lacking oversight and scant regulation. Therefore, two findings of the present research were consistent with this current state of affairs: firstly, consumers perceive AirBnB's price value to be an important driver of intended use, and secondly, the role of trust is important for consumers (H3). Moreover, AirBnB's feedback system is an important driver of

increased trust in the service (H4) and the perceived quality of its web site also influences perceived trust (H5). Finding new ways to maintain and increase consumer trust in the service is essential not only for AirBnB, but for the whole access-based consumption service sector.

Another driver of consumer intent to use AirBnB was social influence. This highlights the use of social media by AirBnB and other services like it – use information about these services is usually visible in social media through the consumer's activity feeds, and this can drive the importance of this aspect. However the path coefficient was the weakest of all the factors studied, so the effect is not as big as the others'.

A somewhat intriguing finding was the statistically insignificant effect of effort expectancy on intended future use. This finding could be explained by the characteristics of the sample; young, highly-educated and frequent users of e-commerce. Thus the effect and mechanics of effort expectancy could be perhaps better studied via a larger, non-random sample. However this result might be explained by the context of AirBnB as well. Renting lodging for a traveler is an important issue, and consumers might be willing to expense more effort on this than on other services they use, thus making the effort required a less significant issue.

An additional interesting finding was that materialistic consumers are less likely to use AirBnB in the future. This finding could be explained by previous research that has found more materialistic people to be more neurotic and less agreeable (Watson 2014). As mentioned in the literature review, neuroticism is one of the 5 main character dimensions of a personality, can be defined as a tendency to be overly negative for prolonged periods of time, and is usually accompanied by prolonged states of anxiety, moodiness, worry, envy, and jealousy (Thompson 2008). Agreeableness is another of the 5 character dimensions, and depicts how warm, kind, affectionate, cooperative and sympathetic a person is (Thompson 2008). Based on the research results, a potential AirBnB user would perhaps thus score higher on agreeableness and lower on neuroticism than non-AirBnB users. Another explanation could be that potential AirBnB users exhibit traits of a liquid relationship to possessions, a term characterized first by Bardhi, Eckhardt, and Arnould (2012). Consumers with a liquid relationship to possessions appreciate immateriality, use and situational values highly – this would fit somewhat with the other results of this study, including the high emphasis on performance expectancy and price value exhibited by those most willing to use and try AirBnB in the future.

To sum up, 7 of the 10 hypotheses were confirmed, with 2 of the unconfirmed ones (H2 and H9) having indirect instead of direct effects on behavioral intention to use AirBnB. The research models and measures were demonstrated to have a suitable validity and reliability with the 2-step approach

suggested by Fornell et. al (1981). The findings provide new insight into the field of technology adoption literature by using constructs from several theoretical fields (IS, consumer research and psychology) in a new context. The factors influencing consumer adoption of access-based consumption services in the case of AirBnB were confirmed, and their relative importance demonstrated. Thus new knowledge was gained in this highly innovative, important and relevant new context.

## 5.2 Managerial Implications

This study has several implications for practitioners. The research demonstrates the aspects that consumers perceive vital in their decision on whether to use a service such as AirBnB or not. The results also show that consumers are ready to try out these new forms of consumption, as demonstrated by the mean scores for intent to use AirBnB in the future. Managers of the traditional competition field of access-based consumption (e.g. hotels) can also gain additional insight on what consumers value in these new services and consequently adopt their own offerings for better competitive positioning.

The main attributes designers of new and old services alike, and managers, should pay attention to were *performance expectancy*, *social influence* and *hedonic motivation*. Making the use of the service social and fun is therefore central to success. This can be done by utilizing for example interactive web mechanisms, social media plugins and other aspects available to designers. Some “gamification” mechanisms could also be tried out, such as awarding points to AirBnB users based on how frequently and wide they’ve traveled and stayed in different lodgings around the world. In addition, as positive word-of-mouth plays a role in service adoption, it should be encourage by all possible means.

The main drivers of performance expectancy were *trust* and *price value*. Moreover, trust was increased by increasing scores on *perceived effectiveness of feedback mechanisms* and *perceived web site quality*. Designing, implementing and maintaining robust feedback mechanisms is therefore essential. Moreover, web site design affects a consumer’s trust in the service, so creating and maintaining high quality, clearly laid out, easily useable web sites is also important. As shown by some of comments made by the informants, trust is a multifaceted issue and needs to be examined and improved upon in an extensive, multi-faceted fashion. In the case of price value, access-based consumption services should try to keep their fees competitive and reduce all non-essential costs to a minimum to maximize price competitiveness.

As potential adopters of AirBnB are likely to be less materialistic than their counterparts, this could be taken into account in targeting and segmenting. Marketing efforts could be tailored to match a less materialistic worldview in all channels, and to play on the image of immateriality and use value, themes that are more central to consumers with a liquid (less materialistic) relationship to their possessions.

### **5.3 Theoretical Implications**

This research has several theoretical contributions to the fields of consumer technology acceptance and marketing literatures. Firstly, the recent high-impact consumer technology acceptance model by Venkatesh et. al (2012) was tested in a highly disruptive and innovative context. The model was modified to suit the context of the study. The results verified most of the factors of the model to be important in access-based consumption adoption, with only facilitating conditions left out of the final model. The context of the present study included a non-random sample of atypical, young and technically sophisticated consumers – the model was revised based on the results of the sample, but still confirmed most of the previous results obtained by Venkatesh et. al (2012). The results of the present study might indicate that the UTAUT2-model is not optimally suitable (without any modifications) for studying fields of highly innovative, specific contexts such as adoption of AirBnB. More research is needed to study the exact effects of the different factors in these new contexts. For example, UTAUT2 completely discounts the essential role that trust mechanics play in access-based consumption (and other novel e-service) adoption, so clearly improvements can be still made.

Secondly, the research shed some new light on the factors that are important in adoption of AirBnB and the relative importance of the factors in relation to each other. The underlying factors and business models of most access-based consumption services are typically similar, so the findings can also be somewhat generalized to this new field at large. Usefulness was the most important factor of all, thus confirming the importance of this factor in the light of previous research and time-old practitioner's knowledge. In addition, the results shed new light on the mechanics of e-trust – it was found to directly affect how useful consumers perceived AirBnB to be.

Thirdly, the study contributed to the nascent field of access-based consumption research by studying the market-mediated version of access-based consumption. Based on the results, consumers value the highly perceived price value of these services and are ready to accept lower regulation and give up the security provided by traditional institutions such as regulators and other authorities – but this requires effective, honest trust infrastructure to be in place. For example, based

on the results of this study of AirBnB, users of Uber, the access-based consumption taxi service, are perhaps willing to accept that their drivers are not officially sanctioned by the authorities, but instead perceive higher total value provided by better price value and are reaffirmed by the quality of the Uber mobile application and the reputational system Uber utilizes which is similar to that of AirBnB.

Lastly, the study tentatively suggests that future users of access-based consumption are less materialistic than their non-adopting counterparts. Thus, new insights were added to the materialism research literature. Studying the exact working mechanisms of materialistic behavior is more important now than ever before. For example, it would be highly useful to learn how to influence materialists to behave less materialistically, since materialism as a consumer phenomenon negatively affects global well-being (in the form of e.g. rising temperatures and other environmental damage) (Scott, Martin, and Schouten 2014)

#### **5.4 Limitations and Further Research**

The research conducted here had some limitations that need to be taken into account when interpreting the results. The sampling consisted of a convenience method via the researcher's social network on Facebook, therefore not reflecting the population at large. The sample was weighed heavily with Finnish nationals who were young, highly educated and used to e-commerce. Further research in this area could thus use a larger non-random sample to test the hypotheses presented here. However it needs to be maintained that the sample represented quite well the potential target audience of access-based consumption services.

As the use of services such as AirBnB is still in its infancy, actual use was not studied. It would be useful to study how well intention leads to actual use in this context. This can be done in the future when larger swaths of the population have been exposed to these new services. A longitudinal study could be used and at the same time it could be studied how perceptions change pre and post-use.

Moreover, some of the fit-indexes of the final model were below suggested levels, although the validity and reliability were demonstrated to be adequate in order to test the hypotheses. This is most likely due to the sample size being relatively modest (n=124) relative to the amount of factors studied. Structural equation modeling is a large sample methodology, and a larger sample would naturally alleviate this matter.

Some of the results contradicted previous results. The role and exact mechanisms of effort expectancy and facilitating conditions could be further studied in this context to validate the results of this study, as both were found to unsatisfactorily explain consumer adoption of AirBnB.

Although this research has yielded new insight into this new context, the increasing growth and importance of access-based consumption warrants more research, both quantitative and qualitative. Increasing resource efficiency and new, non-invasive forms of consumerism are needed to guarantee a healthy environment and a sustainable future for the economy at large, and since services such as AirBnB are an innovative way of increasing and promoting resource efficiency, their inner mechanics and workings warrant a research interest worthy of their growth.

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## Appendix A. Survey Scenario Description

Airbnb is the world's largest online communal marketplace of accommodations from around the planet. At [airbnb.com](http://airbnb.com) you can list, browse and book accommodations from 192 different countries in 34 000 cities – online or via a smart phone, for both short and long-term accommodations. The word “Airbnb” comes from “Air, Bed & Breakfast”.

Imagine now that you're about to book the accommodations for your next holiday/trip abroad.

Please go to [www.airbnb.com](http://www.airbnb.com) and search for accommodations for your trip (in any city you wish, in another browser tab) for a few minutes. After you have finished using the site, please answer the following questions to the best of your ability based on your (first) impressions. You may browse the site while answering the questions if necessary.

*Note: from this point the survey starts. The questions that were asked can be viewed from table 2 in the main text.*