

Measuring Housing Community Customers' Digital Service Usage The Effect of Community Identity

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Jaakko Savolainen

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Author Jaakko Savolainen

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Abstract

Digital services provide the means to improve customer relationships and insight, enable co-creation of value, and disseminate word-of-mouth through digital channels all leading to stronger brand differentiation and higher customer lifetime value. Capturing the value from digital services requires that enough users adopt and frequently use the provided services. Therefore, understanding what affects the usage of digital services is paramount to digital marketing practice. Although several variables have been effectively used in explaining the usage behavior with digital services, none can capture completely the nature of this complex behavior process. The purpose of this thesis is to extend current understanding of consumer behavior within this domain by augmenting a widely accepted behavioral theory into a conceptual research model. A novel construct, community identity, is introduced as an external variable to Technology Acceptance Model, augmenting previously explored digital technology acceptance models.

The data used in this study were collected through an online questionnaire targeted at customers of a large housing construction company. The questionnaire was sent to 3 455 customers, resulting in 355 responses with a response rate of 10%. Only respondents that were familiar with the company's eTalo digital service and were at the time of the study members of a housing community where this service was available, were qualified. Confirmatory factor analysis and structural equation modeling were used in analyzing the data.

The findings suggest that community identity was positively related to attitude toward use and perceived usefulness, which were positively related to the actual usage of the service. Also perceived ease of use was positively related to attitude toward use and perceived usefulness. The findings support the hypothesis that the strength of the community identity affects the usage of digital services offered to this particular community through consumers' attitudes and beliefs. The housing construction company should concentrate on improving the usefulness features and promoting the community identity in the marketing of their digital services in order to boost usage.

As a conclusion, this study provides novel findings regarding the relationship between consumer communities and digital services. This has implications on marketing theory and practice as well as digital marketing, and supports the views of integrated marketing communications and cultural branding strategies.

Keywords digital services, technology acceptance model, community identity, structural equation modeling

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1 INTRODUCTION

To better increase brand preference, gain market share, and improve customer loyalty, companies are turning to digital marketing. The main objective of digital marketing is to fulfill the firm's marketing strategy – attract, satisfy and retain customers in order to increase the average customer lifetime value – through digital media. Through better relationship management and more profound customer insight, investments in digital marketing may lead to efficiency gains in marketing, and enable co-creation of value with customers, dissemination of electronic word-of-mouth through digital channels, and more articulate differentiation of the brand (Anderson et al. 2004; Dabholkar et al. 2000; Gustafsson et al. 2005; Oliver 1999). Expanding in the digital service front is made possible by the widespread adoption of information technology. For example in Finland and other western countries, use of internet and digital services is ubiquitous in all social and age groups (Tilastokeskus, 2014; Bilbao-Osorio et al. 2014).

It has been suggested that the focus of digital marketing should be more in creating services aiming at customer retention, rather than in transactions aiming at customer acquisition (Vargo & Lusch 2004; Rust & Lemon 2001; Payne & Frow 1999; Zeithaml et al. 2002). Digital services enable the integration of relationship marketing and digital marketing strategies. The potential impact of digital services initiatives on firm performance has been widely acknowledged. For example, the impact of successful introduction of digital services has been demonstrated to reduce direct operating costs (Meuter et al. 2005), linking digital services directly to company shareholder value (Anderson et al. 2004; Wu et al. 2003; Amit & Zott 2001). Digital services efforts have been shown also to increase brand equity, i.e. brand knowledge, preference and loyalty, and customer retention (White et al. 2013; Merisavo 2008; Srinivasan et al. 2002; Payne & Frow 1999), leading towards higher customer lifetime values (Venkatesan & Kumar 2004).

As the role of digital services in the contemporary business environment is gaining stronger importance, it is critical to understand how to assess and affect customers' characteristics contributing to the use of supplementary digital services. Digital services should be designed to attract and retain active users through features providing utility, simultaneously being effectively

and efficiently integrated with the general business model of the company to drive marketing performance.

1.1 BACKGROUND

Digital services provide the means to offer additional value for the customers, therefore enabling the formation of stronger brand preference and more sustainable competitive advantage. By introducing supplementary digital services for their customers, a company can improve the efficiency of customer service, provide complementary benefits, incentivize stronger customer relationship ties, and develop innovative new ways to improve customers' living experiences (Amit & Zott 2001). Digital services might, therefore, provide a solution for the major challenge affecting e.g. housing construction companies: low perceived brand differentiation and relationship strength with consumers. According to industry professionals the main drivers of home purchase for consumers are price and location. Even though the constructor brand is perceived as important, the perceived differences between brands are marginal and the brand is not a deal-winning attribute. Low brand differentiation usually leads to high customer churn and price-focused competition. An engineer-led mindset – that housing construction industry is often accused of – leads to business strategies that concentrate mainly on process efficiency and technological improvements. Unfortunately, technological innovations are easily copied by the competitors, therefore failing to provide sustained competitive advantage.

A crucial factor moderating the transformation of value of digital services investments into business performance improvement is the digital service quality (Barrutia & Gilsanz 2013; Parasuraman et al. 2005; Zeithaml et al. 2002). Digital service quality can be defined as the extent that the complex bundle of firm and customer resources facilitate customers' efficient and effective behavior (Barrutia & Gilsanz 2013; Zeithaml et al. 2002). Digital service quality is therefore inherently a customer evaluation. Simply put, it is the fit between the customer characteristics and the technological properties of the service. A good fit, i.e. high quality, results in active and profitable use of the particular service. That is, customers receive value from using the service and the company captures value from the customers' usage. Accordingly, customer behavior and technological properties can also act as barriers to improvements in firm performance. Most importantly, if not enough customers adopt and start using the digital service,

the mechanisms mediating the impact on business performance cannot take place (Meuter et al. 2005). Likewise, if the technological properties of the service, e.g. functionality, eCRM systems or compatibility with ERP, are not effective and efficient, the impact on business performance will be marginal, or even negative.

1.2 RESEARCH PROBLEM AND OBJECTIVES

Existing academic research regarding consumer acceptance and use of digital services in the context of offline communities is rather scarce. In the broader academic marketing and information systems literature the existing research on digital services has been mainly conducted in the context of e-commerce, i.e. web-based business models like web stores and ‘e-tailers’, online communities, or brand communities, not with digital services supplementary to physical high involvement products (i.e. housing). Albeit some studies integrating additional explanatory variables into user acceptance models have been conducted, no consumer behavior model merging consumers’ social and experience factors affecting online behavior has been reported.

The main research question of this thesis is:

‘How are consumers’ social identity and personal characteristics related to their digital service usage in a housing community context?’

Based on an augmented Technology Acceptance Model (TAM), this thesis examines the influence of housing community customers’ social and experience characteristics, beliefs, and attitudes on their digital service usage behavior. The purpose is to extend current understanding of consumer behavior within this domain by augmenting the widely accepted behavioral theory into a conceptual research model concentrating on the social identity of the consumers in an offline community. First, the definition of digital services is reviewed and established. Further on, the theory underpinning consumers’ technology acceptance and usage behavior is explored with the aim to distinguish the most relevant components in the research context. This theoretical framework is then used in developing a conceptual model and measurement scale for assessing housing community customers’ propensity to use supplementary digital services.

The main contribution of this study to consumer behavior theory is to augment previously explored digital technology acceptance models by introducing a novel explanatory variable, the social identity. It is assumed that the online behavior is not based completely on individual characteristics, but is affected also by the contextual relationships between other people. Moreover, majority of current IT usage and technology acceptance research has been conducted by information systems scholars (see e.g. King & He 2006; Legris et al. 2006; Wareham et al. 2005), even though understanding customer behavior is paramount specifically for marketing professionals. Today marketing is regarded as one of the most technology-dependent functions in business (Brinker & McLellan 2014: p. 83). This study introduces a marketing research perspective on digital services usage.

In practice, the objective of this study is to empirically demonstrate how community identity and experience are affecting customers' use of digital services using technology acceptance model. For managerial purposes, the objective is to synthesize the theory and empirical research into practical implications for increasing the customer acceptance and usage rate of the supplementary digital services.

1.3 METHODOLOGY AND SCOPE

The empirical part of this thesis is based on data collected through an online survey during September 2014. The thesis studies consumers' digital service usage in the context of Finnish housing communities and the target group for the survey was YIT's customers that were familiar with eTalo digital service and were at the time members of a housing community where this service was available (see e.g. www.yit.com for company presentation). eTalo was a supplementary digital service available to majority of YIT housing communities in Finland built after 2011. The service was designed as an information portal that consisted of e.g. electronic noticeboard for housing community news, household document and image bank, electronic manuals for household appliances, water and electricity consumption metering, service and property management contact details, and housing-related offers from YIT's commercial partners. The service was free to use for the tenants. YIT's eTalo service has been since replaced by a more refined digital service.

The survey was designed to measure the target group's individuals' personal characteristics, beliefs and attitudes toward using digital services, and reflect them on the self-reported eTalo usage. This was employed presenting statements about these issues on 7-step Likert scales. The web-based survey was sent to 3 455 customers and the reply rate was 21 %, although not all the responses were qualified. A refined final research sample with a response rate of 10% consisted of 355 responses from eTalo-users currently living in YIT housing communities.

As the thesis belongs to the field of marketing and consumer behavior studies, the study concentrates on the behavioral characteristics related to digital technology usage, leaving the technological and design-related issues of digital services outside of the scope. Similarly, the motives for and dynamics of community formation in offline and online, even though important for explaining people's behavior in communities, will be touched only lightly. Community formation is a complex behavioral process that is a separate phenomenon from digital service usage. Consumer communities and their formation have been explored extensively in consumer behavior and consumer culture literature (see e.g. Bauman 2002; Cova & Cova 2002; McAlexander et al. 2002; Muñiz & O'Guinn 2001).

The empirical research was quantitative in nature and was conducted using the traditional research process. First, the theoretical base and conceptual model were developed based on existing literature (Chapter 2). Second, the survey questions and design were developed, and data collected and analyzed using two multivariate methods: confirmatory factor analysis and structural equation modeling (Chapters 3 and 4). Finally, the results of the analysis were examined in the light and comparison of previous research literature and implications were presented (Chapter 5).

1.4 STRUCTURE

Chapter 2 draws the theoretical and conceptual outline for the thesis. First the chapter defines the relevant concept of digital services, then proceeds to introducing the behavioral theory and theoretical concepts underlying the study including the theory of reasoned action, technology acceptance model, and the research model variables of experience and community identity. The chapter finishes by proposing the conceptual research model and hypotheses for the empirical study.

Chapter 3 presents the empirical study by introducing the methodology, sample characteristics and statistical methods used, and discusses the reliability and validity of the chosen methods.

Chapter 4 reports the results from the empirical study. The results are presented following the two phases of structural equation modeling: first presenting the results for measurement model, and then for the structural model. The chapter also summarizes the approval or rejection of the research hypotheses.

Chapter 5 concentrates on analyzing the research findings and drawing conclusions with regards to existing literature on the subject. The chapter also discusses the implications for theoretical and managerial development and suggests further research areas.

2 LITERATURE REVIEW

2.1 DEFINITION OF DIGITAL SERVICES

The prevailing classification of services based on IHIP characteristics does not apply to digital services (Lovell & Gummesson 2004; Zeithaml et al. 1985). The contemporary paradigm in marketing, the service-dominant logic, posits that all services are co-created with the customer (Grönroos 2008; Vargo & Lusch 2008). “Service is the application of specialized competences, i.e. knowledge and skills, through deeds, processes, and performances for the benefit of another entity or the entity itself” (Vargo & Lusch 2004: p. 2). According to Edvardsson et al. (2005: p. 118): “service is a perspective on value creation rather than a category of market offerings”. The logic implies that value is not embedded in products and services, but co-created by adjoining the provider’s and the customer’s physical and mental resources in a mutual effort. Thus, the service provider can only introduce a value proposition, but active participation by the customer is required for the value to be created and captured (Ballantyne & Varey 2008).

Customers co-create service value through experiences, i.e. by consuming the service. According to service-dominant logic also the consumption (i.e. end use) of purchased goods can be regarded as value co-creation (Grönroos 2008). The argument is that consumption of goods is an act of self-service, where the value proposition of the goods is transformed into value-in-use in the absence of the service provider (Ballantyne & Varey 2008). Analogous to goods, digital services, where the customers interact with technology rather than service personnel, require customers’ engagement in self-service to create value.

To date, no generally agreed classification of digital services has been established, although several definitions have been offered in the academic literature. For example, Tiwana and Ramesh (2001) proposed that e-services are applications for distributing and personalizing resources in real-time over the internet. Later, Williams et al. (2008) specified digital services as provisions and transactions obtained and configured online employing internet protocols. Chea & Luo (2008) concluded with the definition of digital services as information-intensive services that are enabled by technology. Similar focus on detachment of human interaction from e-service delivery was proposed by Heinonen (2004). To further distinguish digital services from web-based retailers and catalogs, or so called ‘e-tailers’, Wareham et al. (2005: p. 3) defined e-

services rather vaguely as “the provision of some kinds of services that are substantially differentiated from traditional retailing, such as professional services, entertainment or education”.

A different approach on digital services was presented by Rust and Lemon (2001: p. 86), who stated that the fundamental objective of a digital service is to provide customers with a superior experience in regards to the interactive flow of information. This definition follows Pine and Gilmore’s (1997) argument that in the modern economy superior customer experience is the ultimate driver of brand loyalty. Indeed, the aim of digital service provision is not to produce the best possible service, but to find an optimal fit between the service properties and the customers’ competence, motivation and situation (Heinonen et al. 2010). This fit between customer and technology can be generally referred to as digital service quality, and it is the main moderator in transforming digital service investments into company shareholder value (Barrutia & Gilsanz 2013; Zeithaml et al. 2002).

Digital services follow the service-dominant logic. All digital services are self-services by nature and, because the ownership is not transferred to the customer, they do not have value other than value-in-use (Ballantyne & Varey 2008; Grönroos 2008). According to some arguments, digital services do not follow either the service-dominant or goods-dominant logic due to their simultaneous dependence on the intangible service provision and the tangible digital device (Chowdhury & Akesson 2011; Yoo 2010). Although this point of view is interesting and possibly theoretically prolific, it is disregarded in this study as the academic literature on the subject is still scarce and inadequate.

As a conclusion, in accordance with Ballantyne & Varey (2008), Grönroos (2008), Rust & Lemon (2001), Vargo & Lusch (2008) and Williams et al. (2008) the following definition of digital services is established and utilized in this thesis:

Digital services are interfaces that provide customers with information-rich experiences by enabling interactive communication and real-time resource configuration, disabling temporal and spatial access barriers, and making value proposition, value co-creation and value capture possible via devices connected to the internet.

The main challenge for digital services marketers is to profitably retain customers as active users (Chea & Luo 2008). Similar to virtually all digital applications, digital services are relatively cheap to reproduce and distribute; marginal costs of reproduction are close to zero. Due to low marginal costs, the marketplace is heavily competed and switching costs between service providers are usually negligible. Digital services customers are rarely brand loyal, and, due to low margins, the time to achieve break-even with a newly acquired customer is often measured in years (Reicheld & Schefter 2000). Obviously, the mere introduction and existence of a supplementary digital service does not lure customers to use it. Understanding the relationship and customers' psychographic characteristics is paramount to digital services providers in order to influence customers' usage behavior.

A supplementary digital service is an application that is offered to company's existing customers in order to provide additional value on top of the main value source (Frow et al. 2014). As stand-alone services without the core value source, the supplementary digital services would not be of significant value. The key purpose in offering them is to differentiate the core offering from competition (Frow et al. 2014; Naipaul & Parsa 2000). For example, for a housing community customer the main value source is the dwelling, or for a video game player it's the game console set, but in both cases the customer might benefit from engaging with additional digital online resources, e.g. online communities, help desks, expert advice, additional downloadable content etc. Supplementary digital services are relatively protected from competition as they are offered to existing customers only and therefore enjoy a natural monopoly, so to say. A major challenge is that supplementarity implies voluntary nature – customers are not obliged to use the service to gain value from the core product. Usage can be influenced by improving the attractiveness of the service by developing the technological properties, e.g. design, usability, functionality etc., or through better customer insight, relationship understanding and marketing, which are the main points of focus in this thesis.

2.2 BEHAVIORAL THEORY UNDERPINNING DIGITAL SERVICES USAGE

Technology is an essential component of marketing and contemporary service paradigm (Brinker & McLellan 2014; Lovelock & Gummesson 2004; Moeller 2010; Parasuraman 2000; Vargo & Lusch 2004; Yadav & Pavlou 2014). Parasuraman presented already in 1996 the Pyramid Model

of services marketing, which reflected the paradigm shift from the triadic customer-employee-firm relationship model (Kotler 1994) into a quartic customer-employee-firm-technology relationship model. The Pyramid Model is presented in Figure 1. As the digitalization of services, and the role of technology in marketing in general, is spreading through all markets at an accelerating speed, the significance of the customer-technology relationship to service value is ever increasing (Brinker & McLellan 2014; see Bilbao-Osorio et al. 2014 for worldwide IT adoption).

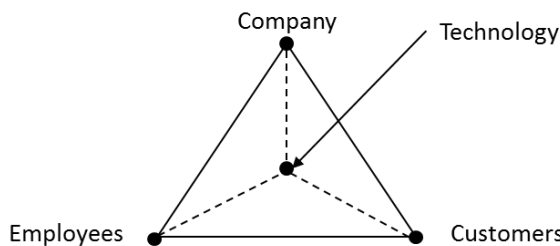


Figure 1. Pyramid model of services marketing (from Parasuraman 2000; 1996)

The rise of ubiquitous digital services has changed the role of the customer from being a mere recipient of a service into a co-creator of value (Grönroos 2008; Meuter et al. 2005; Parasuraman 2000; Vargo & Lusch 2008). More and more companies are transferring their basic customer services from physical locations into virtual platforms in the internet (Liljander et al. 2006; Meuter et al. 2005). Vast majority of the new digital services is based on technologies requiring active engagement with technology, i.e. webpage or mobile application, rather than interacting with company personnel and passively receiving the service (Brinker & McLellan 2014; Lin & Chang 2011). The value of digital services is created hand-in-hand with active customer involvement and co-production at the digital touchpoints. Co-production, or co-creation, requires engagement in some form of self-service by the customer (Grönroos 2008). Self-service on the other hand, requires skills, involvement and motivation to use the particular service. Introduction of complementary digital services does not, therefore, automatically lead to customers' adoption and use of these services (Liljander et al. 2006; Patsiotis et al. 2013).

As there is no value in the mere availability of a service, the value of digital services – be it firm or customer value – is captured only through the utilization of these services (Agarwal & Prasad 1997; Fichman & Kepferer 1993; Vargo & Lusch 2004). Technological issues set aside,

marketing professionals are facing complex behavioral challenges: Why are – or why aren't – customers using the digital service? How to identify the most prominent and potential users? Which are the customers' contributing characteristics and how to influence them to induce usage? As the customers' adoption and usage is paramount to the service's productivity, understanding what drives their behavior is of great importance to the marketer. Once the important determinants of behavior have been distinguished, the marketer has a possibility to try to influence customers' digital service acceptance and improve firm productivity and performance (Amit & Zott 2001; Anderson et al. 2004; Meuter et al. 2005; Wu et al. 2003).

Though several studies have contributed to the understanding of customer-technology relationship and customer behavior within this domain, it is beyond the scope of this study to review all these findings. Furthermore, there is no theory or model that would exhaustively explain information technology usage (Limayem & Hirt 2003). Instead, this thesis will concentrate on one consumer behavior model that has been widely tested within the context of digital technologies. In the following chapter the foundation and relevant aspects of the technology acceptance model is examined.

2.1.1 THEORY OF REASONED ACTION

Two particular research streams have been especially popular among the information systems scientists and academic literature focusing on consumers' acceptance of technology (Agarwal & Prasad 1997). First, the theory of diffusion of innovations (TDI), which strives to quantify the process of innovation acceptance through the marketplace and segment the consumers based on their speed of adoptance (Rogers 2003). In TDI consumers' technology acceptance is proposed to be significantly influenced by the individual's perceptions about the characteristics and use of an innovative technology (Moore & Benbasat 1991; Rogers 2003). Second stream, the theory of reasoned action (TRA), is a widely acknowledged theory of social psychology which attempts to explain the interaction of consumers' perceptions, attitude and consciously intended behavior (Ajzen & Fisbein 1980; Davis et al. 1989).

Conjunctive semantic theme in both research streams is the inclusion of consumers' perceptions of the focal technology as an important explanatory variable. However, the conceptualization of the perceptions is slightly different: TDI is more concerned about the characteristics of a

technology that effect consumer perceptions, whereas TRA focuses on consumer perceptions that induce beliefs and attitudes towards a technology (Agarwal & Prasad 1997). Therefore TDI reflects a more product-oriented research paradigm with technology attributes under scrutiny (Moore & Benbasat 1991; Rogers 2003). Of these two research streams, TRA can be considered as more consumer-oriented with the possibility to include consumers' psychographic variables into the model (Davis et al. 1989). Furthermore, TDI is usually applied to new technology introductions and is more concerned about the behavior of larger consumer populations, rather than individual consumers, whereas TRA can be modified to study adoption as well as habitual use of a technology. As a gross categorization, TDI is more applicable in technology research and development, and TRA in marketing research. The conceptual model of TRA is presented in figure 2.

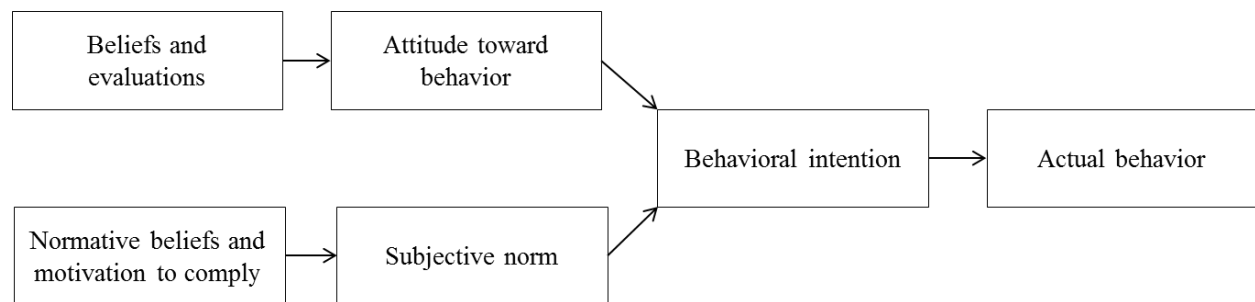


Figure 2. *Conceptual framework for Theory of Reasoned Action (Ajzen & Fishbein 1980)*

According to TRA, consumer behavior is consciously determined by behavioral intention, which is a result of the attitude toward the behavior and the subjective norm. In the case of digital services, this would mean that usage is a result of positive or negative evaluations toward using the service and the motivation to comply with social pressure of relevant reference groups (Davis et al. 1989). Attitude and subjective norm are application-specific in this theory, meaning that the conclusions about a behavior cannot be generalized to other technologies or digital services outside the scope of the focal study. To measure consumers' behavioral intentions with TRA model, researchers try to elicit several salient beliefs about the behavior in question using free response interviews (Ajzen & Fishbein 1980; Davis et al. 1989). This implies that consumers' attitudes and subjective norms towards a specific application can change according to time and situation without changes in actual behavior, therefore diminishing the reliability of the results. In addition, TRA is a general model and is not specific to IT related behavior; all types of

consumer behavior can be modelled with this theory (Davis et al. 1989). Over time, several intentions to modify and enhance the model into a more technology-specific use have been introduced (Davis et al. 1989; Ajzen 1991).

2.1.2 TECHNOLOGY ACCEPTANCE MODEL

Technology acceptance model is a behavioral model developed on the basis of TRA (Davis 1986). It is specifically tailored to assess consumers' acceptance and use of information technology, e.g. digital services (Davis et al. 1989; Venkatesh & Davis 1996). The main purpose of TAM is to identify reasons why a certain IT application is – or is not – accepted and used, and to provide insight for corrective actions. The conceptual model is presented in figure 3.

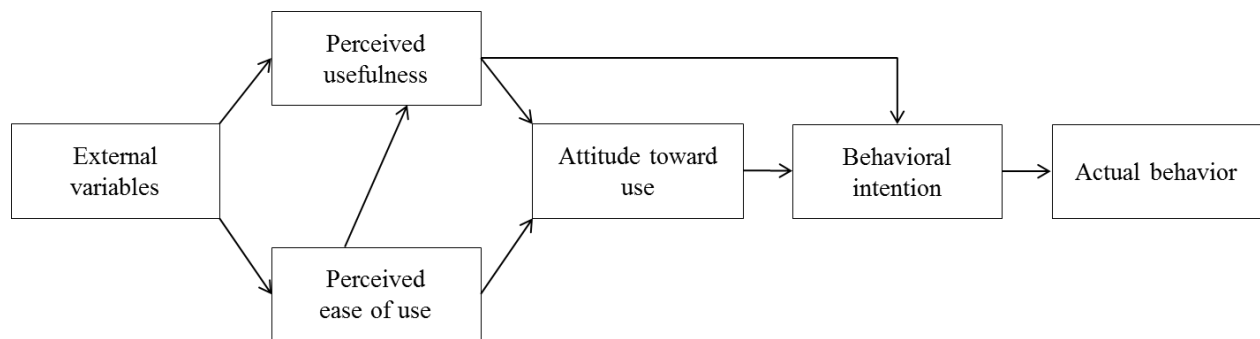


Figure 3. *Technology Acceptance Model (from Davis 1986; Davis et al. 1989)*

Similarly to TRA, TAM proposes that consumers' behavior, i.e. IT usage, is dependent on the intention to use, which is in turn determined by the attitude towards using the focal technology. The attitude is formed as a sum of two application-specific beliefs of perceived usefulness and ease of use. From the consumer perspective, there are four steps in the mental acceptance process: external variables affect the beliefs about the technology, beliefs form the attitude toward use of the IT, attitude affects the intentions to use it, and finally intentions lead to certain degree of usage of the technology (Burton-Jones & Hubona 2006).

Most distinctive difference to the framework of TRA is that the technology acceptance model does not include subjective norm as an explanatory variable to behavior. This does not hinder the applicability of TAM on studying digital services acceptance in housing communities, as the usage of digital services in this context is usually independent of social pressure.

When confronting a specific situation, consumers form evaluations of behaving in a certain manner. These evaluations, the attitudes, determine if and how the behavior is performed (Davis et al. 1989). For example, if a consumer's attitude toward a specific digital service is positive, it will likely lead to usage of this service. Strengthening positive attitudes would lead to increased usage of the service; a negative attitude would lead to refraining from using it. An attitude is a sum of several beliefs about the situation, behavior, and expected outcomes. When using an IT system, the most relevant beliefs affecting attitude are the perceived usefulness and ease of use of the system (Davis et al. 1989).

Consumers' perception of a digital service's usefulness equals the degree to which the service is perceived to help them reach a desired end goal (Davis et al. 1989; Venkatesh & Davis 1996). For example, if the usefulness is rated high, the consumer forms a strong positive attitude toward using the particular digital service. Similarly, if a service is not perceived as very useful, consumer's attitude toward using it will be negative, resulting in abandoning the service. Perceived ease of use, on the other hand, indicates the amount of consumers' effort needed to utilize a digital service (Davis et al. 1989; Venkatesh & Davis 1996). Perceived ease of use also affects the perceived usefulness. If a digital service is easy to apprehend and interact with, the consumer will form a positive attitude towards it due to low cognitive effort needed, but will also be more confident in his ability to utilize it, leading to an increased perception of usefulness (Davis et al. 1989). As a conclusion and accordance with TRA, these perceptions are central to attitude formation and subsequently the key to digital service usage (Davis et al. 1989).

Both belief variables are subjective perceptions of the focal technology. They are therefore subject to individual differences and are not stable constructs. For example, experience is a strong determinant of the perceived usefulness and ease of use (Taylor & Todd 1995). When a user gains more experience with an IT system, he learns to use it more efficiently and effectively in multiple situations, leading to an increased perception of usefulness. If the usage becomes routine behavior, or if the system is similar to previously used systems, gradually it will be perceived as easier to use.

TAM is a parsimonious and versatile model of consumer behavior. The model in itself has been used in explaining behavior in several studies over the last decades (see e.g. Burton-Jones & Hubona 2006; King & He 2006; Legris et al. 2006). According to the theory behind the model,

all other variables affecting the usage or intention to use, e.g. marketing communication or individual consumer characteristics, are mediated through the consumer's belief system (Davis et al. 1989; Taylor & Todd 1995). Generally, the explanatory power of the model has been between 30 to 40% (Legris et al. 2006). As there are only two variables mediating the effects of external variables on the attitude, which in turn is related to usage, it is relatively simple to affect the usage of a digital service by proactively assessing and influencing on these variables (Agarwal & Prasad 1997). However, the external variables within the model are subject to a more specific interest.

Even though TAM is widely tested and accepted as a reliable and relatively powerful model to explain IT usage, the academic debate has been focused on the argument that TAM would fully mediate all external variables, including consumers' personal differences (Burton-Jones & Hubona 2006; Davis et al. 1989). For example Burton-Jones and Hubona (2006) and Agarwal and Prasad (1997) propose that external variables should be incorporated into the model and studied carefully to understand the antecedents of usage attitude and beliefs. According to Lin et al. (2007), TAM alone is not sufficient to explain customers' technology acceptance behavior. Several studies have shown that some external variables affect IT usage directly without mediating through beliefs and attitudes (Burton-Jones & Hubona 2006). Exploring unilaterally the beliefs and attitudes toward use of the focal technology is not enough to understand how these evaluations are formed. Due to the necessity of customer's engagement in co-creating a digital service, personal psychographic characteristics and social influence are consequential to technology usage as well (Dabholkar and Bagozzi 2002).

External variables regarding digital services usage in TAM can be examined through the lens of the social cognitive theory (SCT) (Bandura 1977; 1986; Yi & Hvang 2003). SCT has been applied in several studies examining consumer behavior in computer-mediated environments, e.g. acceptance of digital services (see e.g. Agarwal et al. 2000; Compeau et al. 1999; Hsu & Chiu 2004; Venkatesh 2000; Yi & Hvang 2003). According to the theory, Bandura (1977; 2011: p. 359) argues that human behavior is based on the interaction with personal, i.e. cognitive and affective aspects, and social factors. Consumer actions are therefore driven neither by solely intrinsic motivators nor extrinsic social stimuli, but by a comprehensive bidirectional and reciprocal system of mental mechanisms. In this light, TAM is not sufficient to provide profound

understanding of consumers' behavior. In order to build a comprehensive framework for explaining IT usage, personal and social elements should be incorporated into the model as external variables. These variables are more stable than attitudes and norms about certain behavior, and are also more generalizable across applications (Dabholkar & Bagozzi 2002; Venkatesh et al. 2000). The concept of SCT complements the TAM by incorporating consumers' individual difference variables into the framework of consumer behavior with digital services.

2.1.2.1 Cognitive and Affective Factors

In addition to sufficient technological assets, i.e. internet connection and digital device, today's consumers are required to possess complex set of skills to deal with even mundane digital services. As the consumers' reluctance to embrace digital services is a critical hurdle in capturing the value from them, it is necessary to explore consumers' individual difference variables to explain subsequent technology acceptance (Lin et al. 2007).

Although majority of the consumers are connected to the internet, the customers might not all be savvy users of the recent technologies and digital service platforms (Parasuraman 2000). Clearly, sufficient level of competence and motivation is needed to engage in learning and continuing the use of a digital service. As with many other novel technologies, innovators and early adopters of digital services are the most frequent and savvy users, while the late majority and laggards – the ones who feel most uncomfortable or disinterested with new technology – account for a considerably smaller share of usage (Meuter et al. 2003; Parasuraman 2000; Rogers 2003: p. 283-284). The penetration rate of internet technology in Finland is one of the highest in the world, indicating good potential for new digital services introductions (Tilastokeskus 2013; Bilbao-Osorio et al. 2014). However, consumers differ significantly with regards to their psychographic and behavioral attributes related to digital services usage.

Furthermore, consumers might feel that they are being forced to use digital services because many important service companies, like retailers, banks, ticket vendors etc., are cutting down physical service locations and personal customer service with an aim to improve business performance through online services (Liljander et al. 2006; Meuter et al. 2005). This “involuntary adoption” of some digitalized services can generate technology resistance or

anxiety, which might subsequently generate negative overall attitude toward other digital services (Patsiotis et al. 2013; Ram & Sheth 1989).

Two widely used research variables for explaining consumers' cognitive behavior are self-efficacy and technology readiness.

Self-efficacy

Consumers' technology self-efficacy is a vital attribute influencing the adoption and use of novel digital services (Hsu & Chiu 2004; Lin & Chang 2011). Self-efficacy can be defined as an individual's belief of his capability to perform a specific task (Bandura 1977; Yi & Hvang 2003). If consumers are not able to operate a technology, or do not perceive it to be operable, it will not be voluntarily adopted and used, and the prospects of its success are low. Thus, in the case of complementary digital services consumer self-efficacy is even more critical a variable predicting the usage. As complementary digital services are not crucial for the utility of the main product or service, consumers are less predisposed to put effort in using them (Hsu & Chiu 2004).

For example Hsu and Chiu (2004) and Yi and Hvang (2003) argued that consumers' IT self-efficacy was a strong predictor of web-based digital service usage. Self-efficacy affects consumers' behavior directly, as well as indirectly through attitude towards use and perceived ease of use. It has been shown to explain the formation of application-specific beliefs in the technology acceptance model (Agarwal et al. 2000; Venkatesh 2000; Venkatesh and Davis 1996). The correlation coefficient between self-efficacy and technology acceptance is significantly positive, meaning that the higher the self-efficacy, the higher are the scores for usage, attitude, and beliefs towards a digital service.

Technology readiness

Technology Readiness (TR) is a construct developed for assessing and measuring consumers' mental propensity to adopt and use new technologies (Parasuraman 2000). Even though it is theoretically a separate concept from self-efficacy, semantically technology readiness incorporates both of these concepts. The construct consists of four psychographic components: innovativeness, optimism, insecurity and discomfort (see Table 1 for definitions). These contributing and inhibiting components form a continuum, which is occasionally presented as a

combined index, can be used to predict customers' readiness to accept digital services (Lam et al. 2008; Lin & Chang 2011; Parasuraman 2000; Tsikriktsis 2004; Walczuch et al. 2007).

Table 1. *Psychographic components of the Technology Readiness Index (Parasuraman 2000)*

Component	Definition
Optimism	A positive view of technology and a belief that technology offers increased control, flexibility, and efficiency
Innovativeness	A tendency to be a technology pioneer and thought leader
Discomfort	A perception of lack of control over technology and a feeling of being overwhelmed by it
Insecurity	Distrust of technology and skepticism about its ability to work properly

The preliminary validity of TR in explaining IT system usage was confirmed through a series of qualitative and empirical studies by Parasuraman (2000). Zeithaml et al. (2002) synthesized the existing theoretical knowledge on TR and concluded that TR is a sound predictor for quality perceptions and behavior in an internet environment, although further empirical studies should be conducted to provide additional support for these hypotheses. In many studies TR has been found to be a statistically significant antecedent to contextual endogenous variables, e.g. attitude towards use, perceived usefulness and perceived ease of use, regarding the focal IT system (Godoe & Johansen 2012; Lin & Chang 2011; Lin et al. 2007; Walczuch et al. 2007).

The level of technology readiness can differ greatly from a population to another, as well as within a population. For example in a survey conducted in the UK, Tsikriktsis (2004) found four distinct consumer segments based on varying TR. In a similar study using technology readiness profile as the basis, Parasuraman and Colby (2001) reported five discernible consumer segments in the US.

Even though TR captures the consumers' characteristics and personal orientations relevant to technology usage, there have been confounding studies regarding the reliability of the construct (Liljander et al. 2006; Meuter et al. 2003; Taylor et al. 2002; Yi et al. 2003). In these studies, the discriminatory power of different components of the TR has not been significant, or has been very weak, and failed to explain the variance in the dependent variable.

2.1.2.2 Experience Factors

During the past decades the main focus of information technology usage research has been in cognitive and affective factors regarding IT systems (Limayem & Hirt 2003). Cognitive and affective characteristics can be seen as conscious and rational antecedents impacting the formation of beliefs, attitude and intention to behave in a certain way (Davis et al. 1989; Limayem & Hirt 2003). For example, TAM presumes that technology usage is a result of consumers' rational reasoning about the consequences and benefits of their action (Burton-Jones & Hubona 2006). However, consumers' sub-conscious behavior may have significant influence on their actual behavior, especially if the behavior is voluntary (Davis et al. 1989; Taylor & Todd 1995).

Habit is a result of experience and learning, as demonstrated in the classic conditioning theory by Pavlov already in the late 19th century. When a person engages in a certain activity, he will receive feedback about the behavior from the environment, which leads to learning. If the outcome of the experience is positive, the person will most likely continue acting in a similar manner. If the circumstances remain constant, after adequate repetition the behavior turns into automatic, sub-conscious action i.e. a habit. After this the person does not actively engage in cognitive or affective reasoning e.g. if he should or should not perform the action, but behaves as has previously done to generate positive results (Oullette & Wood 1998; Ronis et al. 1989). Habits are quite easily formed as they reduce the cognitive effort needed to perform an action. For example brand loyalty is for the most part a result of consumers' salient shopping habits (Beatty & Kahle 1988).

Habits have also been witnessed to affect attitudes and actual usage of information technology (Bergeron et al. 1995; Limayem & Hirt 2003; Taylor & Todd 1995; Thompson et al. 1994; Venkatesh et al. 2000). According to the theory, habits play a big role in the prolonged use of an IT system. While the trial and adoption of an IT system is guided more by personal and social factors, the habitual use is subject to positive consequences resulting from experience with the system (Davis et al. 1989; Thompson et al. 1994; Venkatesh et al. 2000).

Negative experiences might impede consumers from forming a habit. If the outcome of an experience is negative, the consumer might disengage from further action. This might be the case

especially with IT systems or voluntary digital services, for example when the application is very difficult to operate, or does not provide noticeable or instant benefits. In these cases the consumers learn that in order to reduce the cognitive and affective effort, it is better to abstain from using the application.

2.1.2.3 Social Factors

A housing community is fundamentally an informal social construct enforced by the physical closeness and economic investments of a group of consumers. In Finland, a house or an apartment is usually the most significant financial asset in consumers' lives, hence consumers' involvement with their dwelling is most likely very high (Säylä 2012; Laurent & Kapferer 1985). Zaichkowsky (1985: p. 342) defined involvement as "a person's perceived relevance of the object based on inherent needs, values, and interests". Consequently, the type of dwelling and the community where it is situated are strong determinants of individual's social identity (Schlenker 1978). The concepts of involvement and social identity are seemingly interrelated. The economic and identity-based involvement might explain the predisposition to form social relationships with other inhabitants, i.e. experiencing self-categorization with the housing community. A community provides financial security and information for its members (Haverinen & Kouvo 2011; Völker et al. 2007). The customers are also looking for psychological safety, comfort and sense of belonging from communities in the times of change and difficult times (Bauman 2002: p. 203–204).

In the theory of reasoned action – a founding theory behind technology acceptance model – extrinsic influence was taken into account as a 'subjective norm' (Ajzen & Fishbein 1980; Davis et al. 1989). Subjective norm was defined by Ajzen and Fishbein (1980) as an individual's perception of the expectations of a relevant reference group – the social pressure – and the individual's motivation to comply with it. Examining extrinsic influence by measuring subjective norm has resulted in controversial findings (Song & Kim 2006; Venkatesh et al. 2003). For example, Taylor and Todd (1995) found a significant correlation between subjective norm and information technology system usage in an organizational setting. However, digital consumer services are probably used in private and, specifically in a housing community context, usage is not directly expected by a reference group, therefore rendering the influence of subjective norm uncertain. As Taylor and Todd (1995) and Lin et al. (2007) speculated, the organizational

context builds pressure on individuals to comply with the norms as there are collective objectives to reach. Also, consumers do not own the digital service system and act only as co-creators of the service. Therefore they are usually freer to choose among several alternatives. Similarly, Davis et al. (1989) argued that subjective norm didn't explain the variance in usage in a setting where the use of an information system was voluntary and personal. The variable was left out of the original TAM due to the difficulty to separate the direct influence of subjective norm on usage from the indirect effects via attitudes (Davis et al., 1989). Furthermore, in cases where the effect of subjective norm on usage has been significant, the magnitude has been relatively small (Bagozzi & Lee 2002; Song & Kim 2006).

Two factors have been found to relate to how strongly social factors affect the actual consumer behavior in voluntary usage situations: social identity and strength of relationships.

Social identity

An individual's concept of self is constructed of two distinct building blocks: the social identity and the personal identity (Ashmore & Jussim 1997: p. 106; Lantz & Loeb 1998; Tajfel 1979). Already in the ancient times Aristotle has been quoted acknowledging: "Man is by nature a social animal". Accordingly, the theory behind social identity indicates that consumers' cognitive, affective and conative attitudes, and behavior are influenced, in addition to intrinsic personal characteristics, also by extrinsic influence, i.e. social context (Lantz & Loeb 1998; Schlenker 1978; Tajfel 1979; Turner et. 1987). Even though not a universally agreed concept among scientists, social identity has been one of the most widely applied theory in human and social sciences to explain human behavior (Korostelina 2007: p. 16).

According to Ashmore and Jussim (1997), the individual-level personal identity describes a person by answering to the definition of "who I am", while collective-level social identity describes "who we are" by defining a person within a reference group. For example, competence and self-efficacy are attributes of the personal identity, whereas the social identity is constructed around the individual's knowledge of his membership, role and significance in a specific social network (Lantz & Loeb 1998; Tajfel 1981: p. 225). Although both descriptions are fundamentally social in nature, social identity is more influential in altering consumers' attitudes and behavior (Ashmore & Jussim 1997: p. 106; Schlenker 1978; Turner et al. 1987). What makes

social identity an interesting concept is that it is principally a positive and personal phenomenon. It provides an individual with feelings of self-esteem, security, adequacy, and mental clarity in complex social situations (Lantz & Loeb 1998; Korostelina 2007: p. 19).

The self-categorization theory underlying the concept of social identity explains the acquisition and use of social identities by group members (Turner et al. 1987). In circumstances where an individual experiences a strong fit and significance between a reference group, his personal identity and situational factors, the personal identity will become merged with the social identity (Lantz & Loeb 1998). The individual categorizes himself as a member of the focal social group which shifts the consumer's focus from self-centric objectives to common group goals. This leads to a depersonalization of self and formation of benevolent ethnocentric attitudes in favor of the salient social group, resulting in group cohesion e.g. efforts toward group uniformity, and social cooperation e.g. positive evaluation of the focal group in comparison to out-groups and expression of support for group-centric interests (Lantz & Loeb 1998; Turner et al. 1987). It should be noted that self-categorization, and the social identity that is formed as an outcome, is based on voluntary conditioning. The mechanism is free from direct persuasion by the group, although it can be influenced e.g. by peripheral marketing cues (See e.g. Petty & Cacioppo 1986 for further explanation of the ELM theory).

Social identity is characterized by a temporal aspect and therefore is subject to reciprocity and constant dialectic between similarity and difference (Korostelina 2007: p. 19). Social identity is determined by culture and history, but strong personal identities develop the culture and change the course of history. Thus social identities may easily be reconstructed, although specific identities are found to be rather stable. Consumers can also hold multiple social identities concurrently (Lantz & Loeb 1998). The identities form a mental taxonomy, where personal characteristics and situational factors determine the most salient and actual social identity. The salience of a social identity can be increased through positive, negative, as well as neutral situational factors, e.g. enjoyable experiences with other group members, a threat from outside the group, or during inter-group comparison (Lantz & Loeb 1998; Korostelina 2007: p. 19).

Strength of relationships

The social relationships between members of a housing community can be generally classified as weak-form ties, in comparison to strong-form ties existing for example with family members or friends (Granovetter 1983; Henning & Lieberg 1996). Granovetter (1973) defined the strength of a tie as "a combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services that characterise the tie". Obviously, strong-form social relationships are more profound and affect an individual's behavior directly, whereas the impact of social influence in weak-form relationships is mediated through an individual's social identity (Granovetter 1983; Schlenker 1978). If the individual doesn't experience social identification with a reference group, that particular group is not likely able to influence the individual's attitudes or behavior. Even though the relative importance of social ties with other members of a housing community has diminished in modern Western societies during the recent decades, these relationships are still found to be meaningful and influential (Haverinen & Kouvo, 2011; Henning & Lieberg 1996).

Social identity has been found to explain people's attitudes and behavioral intentions in several weak-form social constructs (Bagozzi & Lee 2002), but only a handful of studies has addressed the explanatory power of social influence on digital technology usage (Li & Lai 2008; Song & Kim 2006). For example, Song and Kim (2006) demonstrated that the strength of users' social identity predicted the level of participation in a virtual community. Users who found the membership of the community more important put more time and effort in developing their 'Avatar'¹ and connecting with other members within the community. Li and Lai (2008) found significant effects of social influence in a similar study, but where virtual community usage didn't require constant or continual participation e.g. development of an 'Avatar'. Additional support was presented by Hsu and Chiu (2004) who speculated that the attitude toward using a digital service is formed in specific social networks related to the service, not through social norms.

Even though the level of involvement with a dwelling is likely to be very high for all home owners (Laurent & Kapferer 1985), not all consumers find it essential to engage with other members of their housing community (Crow et al. 2002; Schiefloe 1990). People have different

¹ Avatar refers to the graphical representation of a member in a virtual community, a kind of an alter-ego for interacting with others online. See e.g. Li & Lai 2008 for a more specific description.

perceptions and expectations of community practices. For example, elderly people or mothers with small children might be dependent on other members of the community for their daily social interaction. At the same time, abstinence from socializing with neighbors is generally perceived as a positive trait in community members, a phenomenon existing especially in Finland (Haverinen & Kouvo 2011). Figuratively speaking, the neighbors are preferably held at arm's length. Majority of the social relationships in Finnish housing communities could be classified as absent-form, based on superficial connections enforced by courtesy alone (Granovetter 1973; Henning & Lieberg 1996). Consumers may experience the valence of their social identity even negative, for example in a case, when their personal identity doesn't fit with the social identity of a reference group where they are "locked-in", e.g. family or ethnic group – or a housing community (Korostelina 2007: p. 20). Thus, the degree of social identity experienced in a housing community is expected to vary greatly between consumers, making it an interesting external variable explaining the usage of digital services.

In the empirical research and the rest of this thesis the term 'community identity' is used as a synonym for the specific type of social identity that the housing community customers are experiencing.

2.3 CONCEPTUAL FRAMEWORK

In the recent years, several researchers have integrated technology readiness as an antecedent in technology acceptance model to explain technology usage. For example Lin and Chang (2011) and Lin et al. (2007; 2005) studied technology readiness as a combined independent construct of the four psychographic dimensions of innovativeness, optimism, discomfort and insecurity (see Table 1 for definitions). There are also studies that used the four technology readiness dimensions as independent variables to explain perceived usefulness and ease of use (Godoe & Johansen 2012; Walczuch et al. 2007). However, as technology readiness and self-efficacy variables have been studied extensively in the existing literature, and to create a simpler research model, these variables measuring cognitive and affective factors were not included in the empirical study of this thesis.

As the objective of this study is to gain insight into customer behavior with digital services, this study introduces novel variables regarding customers' social and experience dimensions.

Therefore the focus of the empirical study is on community identity and prior experience with digital services. Integrating the social and experience dimensions with the application-specific perceptions is likely to improve the explanatory power of the model (Lin et al. 2007).

Due to the cross-sectional nature of the study, causalities between the constructs cannot be verified (Hair et al. 2006: p. 644). However, structural equation model tests for correlations, which can be used as a proxy for predicting causalities. The empirical research model illustrating the hypothesized relationships between constructs is presented in Figure 4.

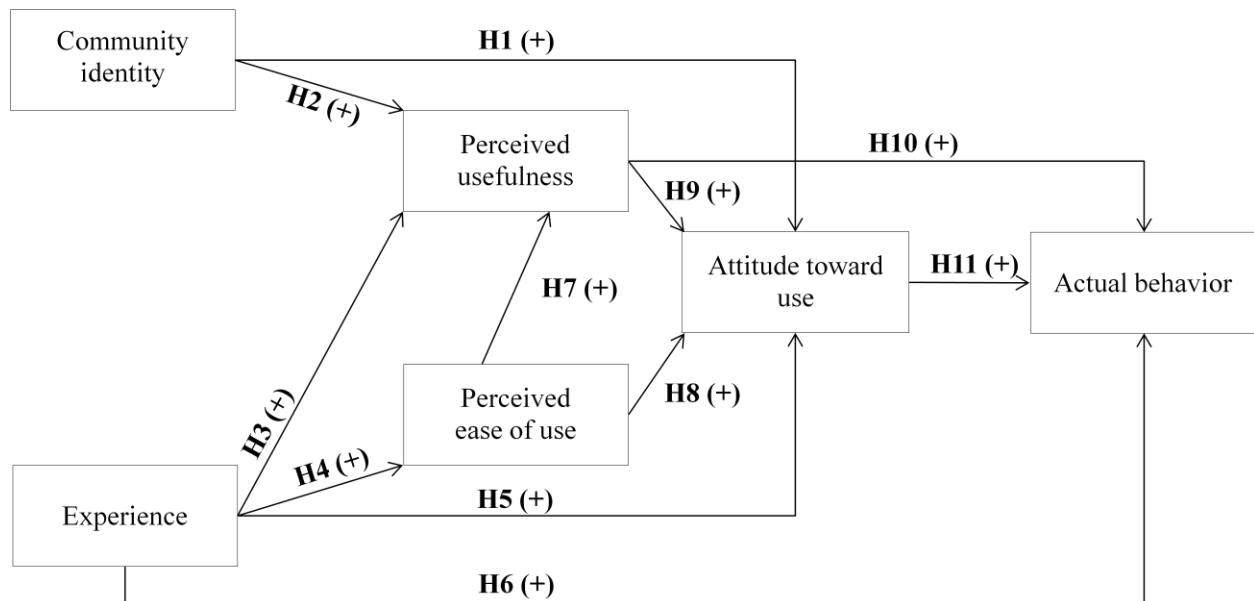


Figure 4. Conceptual research model with the hypothesized relations between constructs

Research hypotheses

It is proposed here that the digital service in question is used more actively in housing communities with strong community identity than in housing communities where people don't feel as if they belong together. However, this relationship is mediated through the perception of usefulness and attitude toward using the service. The willingness to distribute and receive information in a community is dependent on the social identity and trust among the community members (Ridings et al. 2000). In communities where the identity is strong, people want to reach out to and engage with the community (Lantz & Loeb 1997). Similarly, a consumer who experiences a strong identification with his housing community is likely to trust other members and is more willing to interact with them in different channels.

H1: Community identity is positively related to attitude toward using the service

H2: Community identity is positively related to perceived usefulness of the service

Experience has been found to directly affect behavior in regards to information technology (Burton-Jones & Hubona 2006; Thompson et al. 1994). Recurring behavior leads to habit formation and habits have an unmediated effect on usage over and above the belief system. Habits are automatic behavior models that lessen the influence of cognitive and affective reasoning. That is, when the consumer is experienced in using digital services, he will engage in using other similar services without thoroughly assessing their usefulness, ease of use or attitude towards using them (Burton-Jones & Hubona 2006; Oullette & Wood 1998). In the prolonged use of IT, experience has a significant effect on later usage (Venkatesh et al. 2000).

H3: Experience is positively related to perceived usefulness of the service

H4: Experience is positively related to perceived ease of use of the service

H5: Experience is positively related to attitude toward using the service

H6: Experience is positively related to actual usage of the service

It has been theorized, as well as empirically demonstrated, that applications that were perceived effortless and easy-to-use contributed to the perception of usefulness. The perceived ease of use has been found to have a positive effect on perceived usefulness in several technology related studies (King & He 2006; Lin et al. 2007; Schepers & Wetzels 2007). This is an intuitive conclusion since ease of use correlates with the user's efficacy over a technology and if the user is efficacious, he is most likely aware of how to take advantage of the technology. Relying on the same argument, ease of use has a direct effect on the attitude towards using the technology. If the user finds the technology as easy to use, it will generate a positive attitude as the user can utilize the application to his needs. Or, if an application is difficult to use, it will most likely cause frustration and create negative attitudes.

The relationship between ease of use and usefulness, however, does not apply the other way around as not all technology applications that are useful are proportionately easy to use. Also the direct relationship between ease of use and actual usage is omitted from the research model even though the relationship has been found significant in several studies (Schepers & Wetzels 2007). The argument is that consumers are not willing to use a technology application just because it is

easy to use, but use the perception of ease of use to evaluate usefulness and attitude towards the technology.

H7: Perceived ease of use of the service is positively related to perceived usefulness

H8: Perceived ease of use of the service is positively related to attitude toward using it

Attitudes are based on beliefs about the consequences of certain behavior (Fishbein & Ajzen 1975; Davis et al. 1989). According to the theory of reasoned action, a person's perceptions about the consequences of performing a behavior determine the person's attitude toward the behavior (Davis et al., 1989; Fishbein & Ajzen, 1975). Consumers who try to reach an objective, evaluate the usefulness of the digital service by how the service helps them achieve the goal. If the consumers find the service useful, it will also be evaluated positively as favorable to use (Kleijnen et al. 2004; Nysveen et al. 2005; Porter & Donthu 2006). Perceived usefulness has been reported to have a direct effect also on usage or usage intention in several circumstances due to instrumental behavior (Agarwal & Prasad 1997; Davis et al. 1989; Godoe & Johansen 2012; Nysveen et al. 2005). Consumers usually form extrinsic motivations that are independent of attitudes (Davis et al. 1989; Lin & Chang 2011). For example, they might have a goal to achieve or use IT for hedonic purposes, i.e. entertainment. It is presumed that the assessment of the digital service's usefulness is critical for the formation of the attitude toward using it, but has also a direct effect on actual usage.

H9: Perceived usefulness of the service is positively related to attitude toward using it

H10: Perceived usefulness of the service is positively related to the actual usage

Attitude toward a behavior "refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991: p. 188). Within information technology research, attitude can be defined as the assessment of the desirability of using the IT (Davis et al. 1989). The relationship between attitude and behavioral intention has been studied extensively in the technology acceptance literature, and it has been found to have a critical impact on the actual adoption (Dabholkar & Bagozzi 2002; Lin & Chang 2011; Nysveen et al. 2005; Taylor & Todd 1995). Consumers form either positive or negative attitudes towards using IT, and intend to behave in accordance with their attitudes (Bobbitt & Dabholkar 2001; Fishbein & Ajzen 1975). However, in this study the focus is on the self-reported actual usage of the digital service. While several situational factors, e.g. time or financial, might impede a person with a

positive attitude from using a specific system, the TAM proposes a direct relationship between attitude toward use and actual usage (Davis et al.1989). According to the model, actual usage is a direct function of intention to use, whereas intention is directly based on the weighted sum of attitude and perceived usefulness of the focal information technology.

H11: Attitude toward using the service is positively related to the actual usage

The research hypotheses are next tested using data from a quantitative research studying housing community digital service users.

3 RESEARCH METHODS

3.1 MEASUREMENT SCALES AND DATA COLLECTION

The research question posits that this study examined digital service usage in a housing community context. Based on the literature review, the conceptual research model was developed containing five latent constructs as well as the dependent variable of self-reported digital service usage. The other constructs had been previously explored in this context, except for the community identity which was a new inclusion to this field. The objective of the empirical research was to investigate the relationship between the strength of community identity and usage of the eTalo digital service in YIT housing communities.

The measurement scales were adopted from the existing academic literature regarding technology usage and community identity. The scales were then modified using minimal changes to the wording to suit the specific research problem. The questionnaire was designed online in Finnish using Digium Enterprise software. The questionnaire was reviewed by several case company representatives as well as one marketing research professional. Some items were omitted from the modified scales resulting in a questionnaire with 20 individual items, excluding the background questions. The final questionnaire was pre-tested with 15 non-customers for clarity and comprehensibility, and minor changes were made to the wording and order of the questions.

The shortened version of the online questionnaire in Finnish is presented in Appendix A. The original questionnaire contained several questions, which in the end were not relevant to this thesis, and therefore were excluded from the appendix. The original questionnaire contained also some background and open questions which didn't contribute to the theoretical framework investigated here, but were necessary for the company's information needs, and were excluded from the appendix for clarity.

The target respondents for the study were YIT's consumer customers and users of eTalo digital service. Due to convenience, the link to the online questionnaire was sent only to the customers whose email addresses were registered in the company customer database. Although this might have resulted in a representation bias between those who use and don't use email, it is reasonable

to believe that eTalo was used mainly by customers who were actively using other online services, such as email. The survey was sent to 3 455 customers and yielded 802 responses, resulting in a response rate of 23%. However, only responses from customers, who were living in YIT housing communities at the time of the questionnaire and were familiar with using eTalo service, were qualified. After excluding distinctly flawed responses, final response rate of 10%, or 355 responses were obtained.

3.2 SAMPLE CHARACTERISTICS

Although detailed company’s customer base demographics are not available to be reported here publicly, it can be concluded that the sample represented fairly well the overall customer population. The detailed sample demographic characteristics are presented below in Table 2. The usage of eTalo is presented in Figure 5.

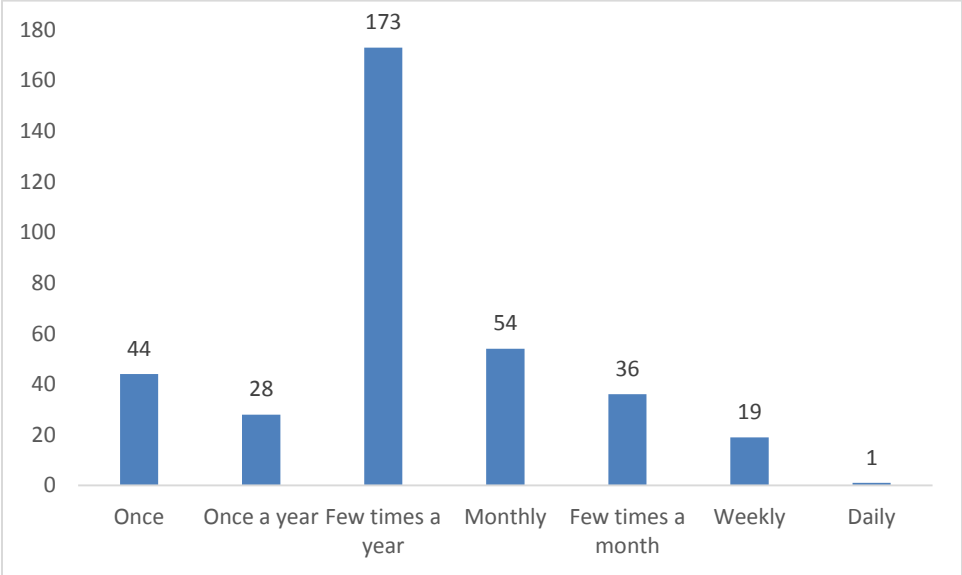


Figure 5. Respondents’ usage of eTalo digital service (n=355)

The aggregate use of eTalo was relatively infrequent. About a fifth of the respondents had used the service only once a year or only one time ever. A vast majority, about three quarters of the respondents, had used it from few times a year to few times a month. Only about 6% of the users could be labelled as heavy users, those engaging with the digital service on a weekly basis.

Table 2. Demographic characteristics of the respondents (n=355)

Demographics	Frequency	%
Gender		
Female	161	45,4
Male	194	54,6
Age group		
-18	0	0,0
18-25	5	1,4
26-35	70	19,7
36-45	66	18,6
46-55	58	16,3
56-65	84	23,7
65-	72	20,3
Domicile		
Helsinki	158	44,5
Espoo	62	17,5
Vantaa	38	10,7
Jyväskylä	16	4,5
Kuopio	13	3,7
Joensuu	8	2,3
Tampere	7	2,0
Kauniainen	5	1,4
Other*	48	13,4
Size of household		
1 person	78	22,0
2	218	61,4
3	44	12,4
4	13	3,7
5	2	0,6
6	0	0,0
More than 6	0	0,0
Size of apartment		
1 room+kitchen	7	2,0
2r+k	94	26,5
3r+k	177	49,9
4r+k	68	19,2
5r+k	8	2,3
6r+k	1	0,3
larger than 6 rooms	0	0,0

* less than 5 responses per city

The sample was fairly equally distributed regarding the gender, age group and apartment size, when taking into consideration the company's product portfolio. The large share of respondents from Helsinki Metropolitan area is due to the fact that majority of YIT housing communities are located in that area. However, the large representation of households with one or two persons in the sample cannot be explained by the product portfolio. It can only be speculated that for example these customers have more time to spend or are more interested in community matters as they are not engaged with family activities, which results in higher usage of eTalo service.

The data was highly skewed, i.e. clearly deviated from the assumption of normality, in several measured parameters. This might present problems in the statistical analysis with low sample sizes. Hair et al. (2006: p. 661) suggests that a generally accepted ratio to minimize deviations from normality would be at least 15 cases for each parameter estimated. In this study the ratio was more than 15 cases per parameter. The following considerations affecting the required sample size suggested that even lower sample sizes would suffice (Hair et al. 2006: p. 661): maximum likelihood estimation was used; there were no missing data; and communality for each item was higher than 0.60.

3.3 STATISTICAL ANALYSIS METHODS

A confirmatory factor analysis followed by a structural equation modeling was used in exploring the phenomenon of digital service usage. Structural equation modeling is widely used and applicable method in studying complex consumer behavior patterns with multiple variables and interrelationships (Hair et al. 2006: p. 629, 634–635).

3.3.1 CONFIRMATORY FACTOR ANALYSIS

First, the confirmatory factor analysis was conducted using SPSS 22.0 software to verify the latent constructs and establish a statistically valid measurement model. Confirmatory factor analysis (CFA) is an interdependence technique which objective is to confirm an underlying structure among the research variables (Hair et al. 2006: p. 94). CFA requires a strong theoretical support for the model, because the structure is formed *a priori* and then validated with this method. The objective is to assess how well the data fits with the preconceived theoretical

model. Therefore, CFA is generally used as a preliminary technique before applying other multivariate methods, especially structural equation modeling (Hair et al. 2006: p. 94).

CFA was conducted using varimax rotation and, according to the research model, nine constructs were extracted. Defining the number of factors *a priori* is justifiable when the model is based on strong theoretical foundation (Hair et al. 2006: p. 109). As the research model contains several latent variables and can be considered fairly complex, varimax rotation was used to achieve the simplest factor structure (Hair et al. 2006; p. 115).

3.3.2 STRUCTURAL EQUATION MODELING

Second phase of the statistical analysis was structural equation modeling (SEM) using SPSS Amos 22.0 software, which was used to investigate the confirmed research model. SEM is a multivariate technique that is used to test simultaneously a large set of relationships for their statistical validity (Hair et al. 2006: p. 634). SEM combines the measurement model and structural model variates (Hair et al. 2006: p. 641). The measurement model is used to define the constructs based on the indicator items, and structural model proposes the dependence relationships and correlations between the constructs. SEM is a statistical technique that requires a relatively large sample to achieve statistical reliability and validity, compared to other multivariate techniques (Hair et al. 2006: p. 661). The specific sample size is affected for example by the number of constructs. A general rule-of-thumb sample size is over 200 cases (Kline 2005: p. 15), which is clearly exceeded in this study.

The key advantage in using SEM is that it allows the incorporation of latent variables into the research model. Latent variables are constructs, which are not observed directly, but only represented indirectly by measuring consistency in observed variables (Hair et al. 2006: p. 635). Using latent variables allows for a better representation of the underlying concepts, which could not be expressed directly e.g. by asking it in a questionnaire. Also, the latent variables account for the measurement error in the concepts which can further ameliorate the statistical estimation of the relationships.

Another advantage represented by SEM is the incorporation of endogenous constructs. Endogenous constructs are latent variables that are dependent on other constructs, but at the

same time are used for explaining variance in subsequent constructs in the model (Hair et al. 2006: p. 637). This feature distinguishes SEM from other multivariate methods, e.g. MANOVA or multiple regression, and enables more interesting interpretations of the research phenomenon to take place.

Measurement model was tested for convergent and discriminatory validity and reliability of the model using maximum likelihood estimation, and finally structural model was examined and standardized path estimates and dependencies established between the constructs in the model.

3.4 VALIDITY AND RELIABILITY

According to Hair et al. (2006: p. 7–8): “Validity is the degree to which a measure accurately represents what it is supposed to”, and “Reliability is the degree to which the observed variable measures the “true” value and is “error-free”. Therefore, validity is about accuracy i.e. if the model presented here actually measures the variables explaining the digital service usage. Reliability, on the other hand, is about generalizability i.e. if the respondents understood the questions and answered based on their true character.

There is no individual parameter that would determine the validity of a structural equation model. Therefore, the validity and reliability of the quantitative analysis was assessed based on several fit indices presented in Table 3 (Hair et al. 2006: p. 664–669). These indices provide evidence for the validity of the measurement and structural models as well as the specific constructs in the model. In addition to indices in Table 3, also Chi-square test is presented in results, although this doesn’t provide accurate fitness as large sample sizes are makes the test less useful.

Table 3. Goodness-of-Fit indices (adopted from Hair et al. 2006)

Index		Description	Acceptable threshold value
RMSEA	Root Mean Square Error of Approximation	Represents how well a fits the whole population, correcting for model complexity and sample size	< 0.08
NFI	Normed Fit Index	Ratio of the difference in χ^2 value for the fitted model and a null model divided by χ^2 value for the null model	< 0.90
TLI	Tucker-Lewis Index	Comparison of the normed χ^2 values for the null and specified model	< 0.90
CFI	Comparative Fit Index	Incremental fit index improved from NFI; relatively insensitive to model complexity	< 0.90

4 RESULTS AND ANALYSIS

4.1 CONFIRMATORY FACTOR ANALYSIS

The confirmatory factor analysis was performed to assess the reliability and validity of the research model proposed in Chapter 2.3 (Figure 4). In other words, the analysis would show how well the research model fit the empirical data. However, when conducting the confirmatory factor analysis in SPSS, several of the items would not load on the intended constructs, would load on several constructs, or their loadings were below the 0.60 threshold, indicating a severe problem (see e.g. Kline 2005 p. 73 or Fornell & Larcker 1981) (see Appendix B for data). Expectedly Amos 22.0 could not provide a solution for the analysis with this model. Therefore changes were made to the research model in order to achieve acceptable validity.

The constructs representing attitude and perceived usefulness correlated strongly and would not discriminate as individual factors. These factors are conceptually close to each other. One explanation to the indiscrimination might be that the respondents were evaluating their attitude toward eTalo digital service through the concept of utility, which would clearly correlate with perceived usefulness. As the service didn't have a lot of features, e.g. to fulfill hedonic needs (Hartman et al. 2006), the utility of the service might have been the only quality on which to base the attitude. As a result, attitude and perceived usefulness were handled in the CFA as a single construct and the concepts were allowed to load on the same factor containing the items from both variables. Unfortunately this would also eliminate some of the explanatory power of the individual constructs. The unification of the two constructs presented also a small practical problem as attitudes were measures on a scale of 1 to 5. SPSS Amos software takes scale differences into account in the structural equation modeling, but different scales would be reflected in the mean and standard deviation scores calculated in SPSS. The parameters had to be first converted into a 7-step scale using 4 as the mid-point in the scale. The new scores were used only to illustrate mean and standard deviation, the rest would be derived from SEM analysis. Actually, both numbers were tested in the structural equation model, and no differences in the results were shown.

The modified research model is presented in Figure 6, followed by the revised research hypotheses.

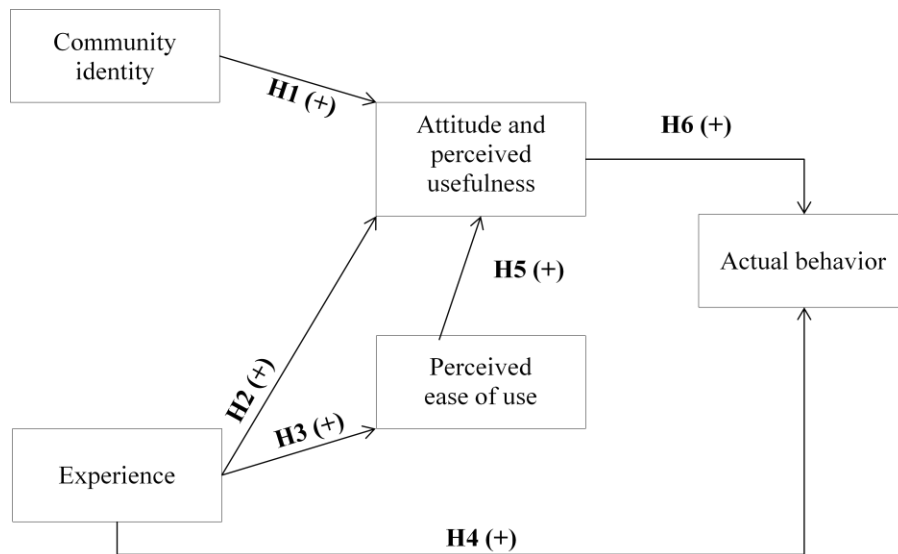


Figure 6. Modified conceptual research model

H1: Community identity is positively related to Attitude and perceived usefulness toward the service

H2: Experience is positively related to Attitude and perceived usefulness toward the service

H3: Experience is positively related to Perceived ease of use of the service

H4: Experience is positively related to Actual usage of the service

H5: Perceived ease of use of the service is positively related to Attitude and perceived usefulness toward the service

H6: Attitude and perceived usefulness toward the service is positively related to the Actual usage

4.2 STRUCTURAL EQUATION MODEL

4.2.1 MEASUREMENT MODEL

The modified measurement model was tested again using Amos 22.0. Several items were still suffering from poor loadings. Before the step-wise deletion of items with poor loadings, the fit indices were below the recommended thresholds ($\chi^2 = 629.63$; $df = 220$; $p = 0.000$; $RMSEA = 0.073$; $NFI = 0.861$; $TLI = 0.890$; $CFI = 0.904$). Using step-wise omission of items with inadequate loading the research model was modified further to reach acceptable validity. Items were dropped one by one while controlling the changes in the loadings of the remaining items and constructs. Five invalid items were discarded, resulting in four constructs and 15 items,

retaining at least three items per construct in the final model. After the modifications all items had loadings above 0.60, indicating an acceptable convergent validity (Fornell & Larcker 1981). Next, composite reliability (CR) and average variance extracted (AVE) were calculated to investigate the internal consistency of the variables, that is, if the items were adequately related and the latent constructs statistically justified. All constructs were above the recommended thresholds of 0.70 and 0.50, respectively, as suggested by Fornell & Larcker (1981). The final items with their CR, AVE and loadings are presented in Table 4 (see Appendix A for the online questionnaire in Finnish)

Table 4. Measurement scales

Construct	CR	AVE	Loading*	Item**	Based on
Attitude and perceived usefulness	.830	.562	.828	I think it is (pleasant/unpleasant) to use the service ^a	Carlson & O'Cass (2010) and Davis et al. (1989)
			.816	I enjoy using the service ^b	
			.782	Using the service is a (positive/negative) experience ^c	
			.736	The information provided by the service is useful	
			.649	Using the service would enhance my effectiveness in handling housing-related matters	
Ease of use	.779	.598	.871	Usage of the service is clear and understandable	Carlson & O'Cass (2010) and Davis et al. (1989)
			.80	The layout of the content is easy to understand	
			.667	Learning to operate the service is easy for me	
Community identity	.838	.626	.867	I feel a mental identification with my housing community	Hirvonen (2013) and Lantz & Loeb (1998)
			.786	I feel a commitment to my housing community	
			.755	I like being part of my housing community	
			.683	The members of my housing community can usually be trusted	
Experience	.783	.602	.90	Using digital services is completely natural to me	Limayem & Hirt (2003)
			.855	The use of digital services has become a habit for me	
			.631	I am addicted to using digital services	

* All loadings are significant at $p < 0.001$

** Items are measured with a 1-7 Likert-type scale (1=Completely disagree, 7=Completely agree), except for ^{a b c}

^a Item measured with a 1-5 scale (1 = Extremely unpleasant, 5 = extremely pleasant)

^b Item measured with a 1-5 Likert-type scale (1 = Completely disagree, 5 = Completely agree)

^c Item measured with a 1-5 scale (1 = Extremely negative, 5 = extremely positive)

The discriminant validity of the model was investigated by comparing the square root of AVE of the latent construct with the absolute value of the standardized correlations between other latent constructs (Fornell & Larcker 1981). Good validity was achieved as the square root of AVE was larger than the correlations in all cases (presented on bold in Table 5). Summary statistics for the measurement model are presented in Table 5. Correlation table for Actual usage and model constructs is presented in Appendix C.

Table 5. Measurement information and correlation matrix

Construct	Mean	SD	1	2	3	4	5
1. Attitude and perceived usefulness	4.51	1.03	.750				
2. Ease of use	5.42	1.03	.745	.770			
3. Community identity	5.32	0.91	.232	.125	.791		
4. Experience	6.01	0.92	-.025	.074	-.042	.778	

Square root of AVE on the diagonal on bold; correlations off-diagonal

The model fit was improved to an acceptable level (Hair et al. 2010: p. 665–669; Kline 2005: p. 137–145): $\chi^2 = 216.80$; $df = 84$; $p = 0.000$ and $RMSEA = 0.067$. The comparative fit index (CFI) and Tucker-Lewis index (TLI), both with a threshold of 0.93, indicated satisfactory fit with values of 0.95 and 0.937. Also the normed fit index (NFI) showed a good fit with a value of 0.921, while the acceptable threshold is 0.90. In the light of these parameters, the model can be considered valid for assessing the theoretical assumptions about the relationships between the constructs (Hair et al. 2010: p. 730).

4.2.2 STRUCTURAL MODEL

After testing the measurement model, the structural model was examined using Amos 22.0. In the structural model the standardized path estimates are established with their statistical probabilities to later draw conclusions about the relationships between constructs. Testing the structural model will reveal the strength and nature of the relationships as well as the share of variance in the endogenous latent variables explained by other latent variables (Hair et al. 2010: p. 692).

The model fit remained at an acceptable level; the indices indicated that the model was fairly valid ($\chi^2 = 244.61$; $df = 98$; $p = 0.000$; $RMSEA = 0.061$; $NFI = 0.914$; $TLI = 0.934$; $CFI = 0.946$). The structural model is presented in Figure 8 and summary of research hypotheses in Table 6.

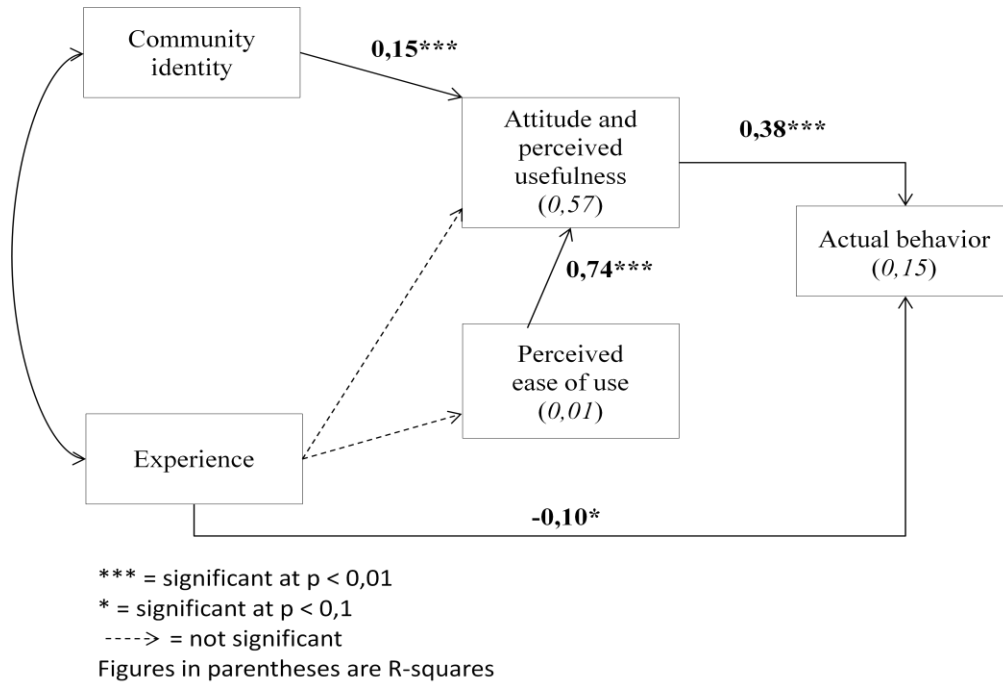


Figure 7. Structural equation model

Table 6. Summary of research hypotheses

Path	Standardized estimates	p-value	Hypothesis
COID → ATTU	0.154	< 0.001	H1: supported
EXP → ATTU	-0.074	0.113	H2: not supported
EXP → EOU	0.074	0.226	H3: not supported
EXP → USE	-0.097	0.067	H4: not supported
EOU → ATTU	0.743	< 0.001	H5: supported
ATTU → USE	0.375	< 0.001	H6: supported

Note: COID=Community identity; ATTU=Attitude and perceived usefulness; EOU=Ease of use; EXP=Experience; USE=Actual usage

The findings and their implications are discussed in the following chapter.

5 CONCLUSIONS

This thesis contributes to the contemporary research on digital marketing and use of digital services in the context of housing communities. Understanding the end-customer is always paramount in marketing research and customer management, and this study provides new insights to that field by establishing community identity as a relevant factor in consumer behavior processes in weak-form relationships. The purpose of this thesis was to explore and quantify consumer characteristics that affect digital service usage in a housing community context. This context is relevant – in addition to the consumers and their everyday lives – especially to construction companies, real estate agencies, and other firms offering products and services to housing companies and housing communities.

The theoretical framework was established in the literature review. Technology Acceptance model, a model developed on the base of Theory of Reasoned Action, was presented. This model has been used extensively in technology-related consumer behavior studies in the recent decades (Burton-Jones & Hubona 2006; King & He 2006; Legris et al. 2006). Not surprisingly, but still presenting interesting insight on the customer, the Ease of use-Attitude and perceived usefulness-Digital service usage -chain was found significant and positive also in this study.

The most significant results of this study suggest that consumers who are more strongly identified with their housing community are more active users of digital services offered to the community. There was a significant and positive relationship between Community identity, Attitude and perceived usefulness and Actual usage of the digital service. This was a novel finding.

The findings indicate that in this context individuals' previous experience doesn't seem to affect the usage. Consumers' experience with digital services didn't have significant impact on their beliefs and attitudes, or directly on their usage of eTalo digital service. However, the findings from this study were controversial to the existing literature on technology acceptance (e.g. Burton-Jones & Hubona 2006; King & He 2006; Legris et al. 2006).

5.1 DISCUSSION

The structural model presented some interesting and slightly controversial results compared to the existing literature. Only three of the hypothesized relationships were supported (Table 6). Community identity was in fact positively related and had a significant impact on attitude and perceived usefulness, supporting H1 ($\beta = 0.15$, $p < 0.001$). As was discussed in earlier chapters, this research on digital services in this context is scarce, hence the results are extremely fascinating. In other words, the results support the idea that the strength of the community identity affects consumers' attitudes and beliefs about services that are offered to this community. Attitude and perceived usefulness had a positive and significant impact on actual usage of eTalo digital service, supporting H6 ($\beta = 0.38$, $p < 0.001$). Even though this was expected from the existing literature regarding technology acceptance, it provides further support for the impact of community identity on consumers' behavior with digital services (Burton-Jones & Hubona 2006; King & He 2006; Legris et al. 2006).

Although it has been suggested in the previous academic research that social identity has a significant effect on consumer behavior in the community context (Bagozzi & Lee 2002; Li & Lai 2008; Song & Kim 2006), the results here indicate that the effect of social identity goes even further. The main research finding, that the consumers' offline community identity affects their online behavior, is extremely intriguing. A company promoting its digital service in a community context would benefit from promoting also the community identity of the target group. For example Ridings et al. (2002) concluded that trust clearly predicted the members' activity in virtual communities. One statement in this study was measuring trust as a part of the community identity construct (see Table 4: "The members of my housing community can usually be trusted"). It would seem that trust is an important factor when identifying oneself with a particular community. Although the strong-form relationships between family and friends will always be more influential than weak-form ties (Lantz & Loeb 1997), weak-form communities are more numerous in consumers' lives and therefore important for marketers to understand.

Also in line with previous research, perceived ease of use had very strong and significant impact on attitude and perceived usefulness, supporting H5 ($\beta = 0.74$, $p < 0.001$) (Burton-Jones & Hubona 2006; King & He 2006; Legris et al. 2006). However, the non-existent impact of

experience on the beliefs and attitude was quite surprising, leading to rejection of H2 and H3. Experience with digital services had a slight negative impact on actual usage, on the contrary to what was hypothesized. The H4 was therefore not supported, even though the relationship was almost significant ($p = 0.067$). The results indicate that more experienced users were using eTalo digital service less than others, even though this behavior was not mediated through beliefs or attitude toward the use.

The contradicting results with regards to experience might be due to the fact that the customers perceived the service as extremely easy to use. The mean for Ease of use construct in this study was 5.39 (S.D. = 1.26) on a scale from 1 to 7. As was suggested in the literature review, ease of use is an important variable explaining usage in voluntary behavior settings (Davis et al. 1989; Taylor & Todd 1995). This meant that the service could be equally well used by all customers, and did not require experience or an innovative mindset. Although not significantly, experience was negatively related to actual usage which might give support to this speculation. Most likely the experienced users perceived directly that the service was too simple to provide any benefits, and didn't use it.

Finally, the explanatory power of the dependent constructs were interesting. The square multiple correlation (R^2), which represents the variance explained by the independent constructs, for attitude and perceived usefulness was very high. Clearly these are the critical antecedents of cognitive and affective reasoning while pondering about the use of digital services; over half of the variance, 57.3%, observed in this construct was explained by community identity and perceived ease of use. In the light of existing literature, this result is hardly surprising as ease of use is conceptually and empirically very close to concepts of perceived usefulness and attitude toward use.

One explanation why perceived usefulness and attitude could not be discriminated as their own constructs could be that the respondents found the service as rather indifferent regarding the usefulness and attitude toward using it. The digital service in question didn't contain many features supporting frequent use or something that would evoke feelings of utility. The mean for attitude and perceived usefulness construct in this study was 4.51 (S.D. = 1.03) indicating that the statements about the usefulness and attitude toward the service were assessed quite closely related to the option "neither agree nor disagree". Majority of the variance in the construct was

explained by community identity and perceived ease of use, so the respondents were most likely assessing the digital service only based on these two constructs. As a result the respondents could not distinguish between the perceived usefulness and attitude toward use.

The actual usage had a lower explanatory power of 15.1% compared to existing literature (see e.g. Legris et al. 2006), but still representing a reasonable share of variance in explaining such a complex construct as human behavior with digital services. Experience had a negligible explanatory power on perceived ease of use, indicating that the chosen independent variables were not fit for studying this construct in this context.

5.2 THEORETICAL IMPLICATIONS

Technology acceptance model seemed to be valid in explaining the usage of digital services. Consumers' psychological characteristics were mediated through the attitude and perceived usefulness construct. Even though there were problems e.g. discriminating the variables and explaining the variance in ease of use, this was most likely due to the characteristics of the underlying research object – the digital service – and not the underlying research model itself.

The implications from this study are relevant also in other digital service contexts, such as the contemporary social media platforms, like Facebook. The significance of the offline events can't be overlooked when assessing the importance of online communities. In this study, good relationships with the neighbors increased the usage of a community digital service. It should be considered with other services as well, if the usage could be increased by highlighting the importance of the relationships that are up kept through the service, and not promoting the service itself.

Another relevant field of theory that these results might apply is branding, however, this relationship needs further investigation. As the use of digital channels in marketing is gaining in importance, the marketer should not forget the integrative view the consumer forms about a brand. Brand knowledge is the sum of the consumer's perceptions about the brand from all channels, be it online or offline. The shift in branding strategies has been evident in the marketing literature during the past decades (Cova & Cova 2002; Holt 2004; Muñiz & O'Guinn 2001). In the late 20th century marketing and branding focus was in dyadic, one-to-one

relationships with the consumer. In the 2000's the focus in branding has been shifted to communities and even more recently to consumer cultures. For example Holt (2004) argues that cultural branding – establishing the brand as part of the consumers' everyday culture – creates the strongest and longest-lasting relationships with consumers. Cova & Cova (2002) and McAlexander et al. (2002) propose that community marketing supports the interactive relationships between the members which weaves the brand as a part of these meaningful social ties. This thesis implies that even in communities connected by weak-form relationships, such as a housing community, the community has a significant impact on consumers' behavior, arguing behalf of the cultural branding paradigm. Marketing a digital service as a service for community seems to be a good strategy to increase the usage in that particular community.

5.3 MANAGERIAL IMPLICATIONS

The managerial implications of the findings are more concerned about the actual usage of the digital service. Sense of stronger community identity was associated with increased usage. Therefore, promoting the community in the firm's advertising and customer communication would most likely lead to more frequent usage. In the light of the findings from this study, it would be beneficial also to use the community as a channel to promote the firm's digital services. For example advertising to customers through voluntary community work events (in Finnish: talkoot) might provide a useful channel to connect the digital service with the housing community members. This "community partnership" should be highlighted in the company's marketing. It might even differentiate the brand from competition by highlighting the brand's community building efforts, e.g. "we build communities for the like-minded people", instead of promoting home building efforts, e.g. "we build homes for individuals".

The external factors affecting digital service usage were mediated through attitude and perceived usefulness. This means that the utility of the service is extremely important to the actual usage behavior. It would seem that while eTalo digital service was very easy to use, it didn't offer much utility, leading to relatively low usage frequency (see Figure 6 for usage data).

The results implicate that experience with digital services didn't increase the usage of the focal digital service. This means that in order to boost the usage of its digital service, the company doesn't benefit from excessive training or educational advertising. More important is to develop

the digital service to include more content to increase the utility, and more social media features so that the customers can better connect with their community online.

5.4 LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

Due to the cross-sectional design of the empirical research, it is impossible to fully ascertain the causal paths of the research model using structural equation modeling (Hair et al. 2006: p. 644). In any research, without longitudinal separation of hypothesized causes from effects, it is not possible to draw conclusions about the causal implications of the relationships observed (Compeau et al. 1999). Social cognitive theory posits that there is a reciprocal interaction between cognitive, environmental and behavioral factors, thus enabling technology readiness and social identity to act both as a cause for and an effect of digital service usage (Compeau et al. 1999; Bandura 1986). As the customers had already had the opportunity to use the digital service for some time, for example their attitude might have affected their technology readiness and/or community identity. There is a chance that actually it was the usage of the digital service that had a positive impact on the community identity. This was not, however, probable in this case as the digital service didn't have for example any interactive communication features that would have enabled community building activities to take place.

Even though there is a strong quantitative evidence on behalf of community identity's impact on digital service usage, it cannot be concluded exactly why the customers were using the eTalo digital service. Were the customers seeking to fortify their community identification by using the service as is concluded here (Bauman 2002: p. 203–204), or for example just satisfying their information needs, or maybe just browsing for entertainment (Hartman et al. 2006)? A qualitative research should be conducted in order to understand and confirm the deeper motives of the users.

Another research directly related to this subject would be to explore the importance of community identity in the customers' housing purchase decisions. It can't be concluded from the results of this study, how important community identity actually is for the customers. The items measuring community identity (Table 3) only assess the level of community identity, not the attitude toward or importance of it.

The research findings evoke interesting questions about the company's efforts in branding certain developing residential areas. The results from this study could be used to bring insight into community formation theories (McAlexander et al. 2002; Muniz & O'Guinn 2001) It is unclear based on this study alone, if the community identities are formed due to mental identification with other members, or due to physical proximity and mutual investments in the housing community. It would be interesting to study the relationship between the housing community identity and the area brand. For example, do the customers select the areas they are most identified with in the first place, and use the digital service because of this pre-established community identity? Or is the community identity developed in the real-life connections between people after moving in to a particular housing community and area? Even the brand relationship might turn out to be stronger with the community than with the individual consumer.

Using a sample of customers of only one digital service might compromise the generalizability of the findings. Even more so due to the fact that the service is a supplementary service for one particular company, which means that the perceptions and attitudes are deeply rooted in the brand relationship with the mother brand. Further studies should be conducted in diverse set of industries to create a deeper understanding of community identity's role in consumer behavior.

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APPENDIX A. Online questionnaire

Kiitos mielenkiinnostasi kyselyä kohtaan. Mielipiteesi ja näkemyksesi ovat meille arvokasta tietoa.

Seuraava kysely sisältää monivalintakysymyksiä ja väittämiä liittyen asumiskokemukseen, eTalo-palvelun käyttökokemukseen ja yleisesti sähköisiin palveluihin. Vastaukset käsitellään nimettöminä ja täysin luottamuksellisesti.

Kaikkien viimeistään perjantaihin 26.9.2014 mennessä kyselyyn vastanneiden kesken arvotaan yksi 150 euron ja kaksi 50 euron lahjakorttia S-ryhmän liikkeisiin.

Kysely toimii pohjana Aalto-yliopiston markkinoinnin aineen maisterin tutkielmalle. Tutkielma suoritetaan opiskelijatoimeksiantona YIT:lle. Kyselyn tarkoituksena on kartoittaa YIT:n eTalo-palvelun käyttökokemuksia, asukastyytyvääisyyttä sekä asukkaiden näkemyksiä ja tarpeita digitaalisia palveluita kohtaan. Annettujen vastausten avulla voimme kehittää eTaloa vastaamaan paremmin asiakkaidemme tarpeita ja parantaa edelleen asumiskokemusta YIT Kodissa.

Vastaan mielelläni tutkimusta koskeviin kysymyksiin sähköpostitse.

ystävällisin terveisin

Jaakko Savolainen

jaakko.i.savolainen@yit.fi

Asutko tällä hetkellä YIT Kodissa, jossa eTalo-palvelu on saatavilla?

- Kyllä
- Olen vasta muuttamassa
- En

Milloin on arvioitu muuttopäiväsi YIT Kotiin?

- Myöhemmin kuin tammikuu 2016
- Joulukuu 2015
- Marraskuu 2015
- Lokakuu 2015
- Syyskuu 2015
- Elokuu 2015
- Heinäkuu 2015
- Kesäkuu 2015
- Toukokuu 2015

- Huhtikuu 2015
- Maaliskuu 2015
- Helmikuu 2015
- Tammikuu 2015
- Joulukuu 2014
- Marraskuu 2014
- Lokakuu 2014
- Syyskuu 2014

Onko sinulla kokemusta eTalo-palvelun käytöstä?

- Kyllä
- Ei

Valitse asuinpaikkakuntasi

- Espoo
- Heinola
- Helsinki
- Hyvinkää
- Hämeenlinna
- Inkoo
- Joensuu
- Jokela
- Jyväskylä
- Järvenpää
- Kaarina
- Kauniainen
- Kerava
- Kirkkonummi
- Klaukkala
- Kokkola
- Kontiolahti
- Kuopio
- Lahti
- Lappeenranta
- Lohja
- Mäntsälä
- Nilsia
- Nummela
- Nurmijärvi
- Oulu
- Paimio

- Piispanristi
- Pori
- Porvoo
- Raisio
- Riihimäki
- Rovaniemi
- Sastamala
- Siilinjärvi
- Tampere
- Turku
- Tuusula
- Vaasa
- Vihti
- Vantaa
- Vuorela
- Jokin muu paikkakunta

Seuraavat kysymykset liittyvät asukasyhteisösi.

Asukasyhteisöllä tarkoitetaan kotisi välittömässä läheisyydessä asuvia naapureita, kuten omaa taloyhtiötäsi tai pihapiirisi asukkaita. Asukasyhteisö on siis toisiaan lähellä asuvista ihmisistä muodostuva yhteisö.

Tykkään olla asukasyhteisöni jäsen

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Koen olevani sitoutunut asukasyhteisööni

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Asukasyhteisössäni huolehditaan yhdessä asuinalueen järjestyksestä ja siisteydestä

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Asukasyhteisöni asukkaisiin voi yleensä luottaa

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Tunnen henkistä yhteenkuuluvuutta asukasyhteisööni

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Seuraavat kysymykset koskevat YIT:n sähköistä eTalo-palvelua.

Kuinka usein olet käyttänyt eTalo-palvelua?

Päivittäin	Viikoittain	Muutaman kerran kuukaudessa	Kuukausittain	Muutaman kerran vuodessa	Kerran vuodessa	Olen käyttänyt ainoastaan kerran
()	()	()	()	()	()	()

Pidän eTalo-palvelun käyttämisestä

Täysin samaa mieltä	Samaa mieltä	En samaa enkä eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()

eTalo-palvelun käyttökokemus on mielestäni

Erittäin positiivinen	Positiivinen	Neutraali	Negatiivinen	Erittäin negatiivinen
()	()	()	()	()

Mielestäni eTalo-palvelun käyttö on

Erittäin miellyttävää	Miellyttävää	Ei miellyttävää eikä epämiellyttävää	Epämiellyttävää	Erittäin epämiellyttävää
()	()	()	()	()

eTalo-palvelun idea on mielestäni

Erittäin hyvä	Hyvä	Ei hyvä eikä huono	Huono	Erittäin huono
()	()	()	()	()

Palvelun käytön opettelu on minulle vaivatonta

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Palvelun sisällön jaottelu on helposti ymmärrettävissä

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Palvelusta löytyvä sisältö on hyödyllistä

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Minun on helppo muistaa, miten palvelun toimintoja käytetään

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Voin vaikuttaa palvelun sisältöön ja muokata sitä paremmin omaan käyttööni sopivaksi

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Palvelua käyttämällä voin helpottaa asumiseen liittyvien asioideni hoitamista

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Palvelussa asioiminen tuntuu turvalliselta

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Palvelun käyttäminen on selkeää ja ymmärrettävää

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Seuraavat kysymykset liittyvät yleisesti sähköisiin palveluihin.

Sähköisillä palveluilla tarkoitetaan palveluita, joihin tutustuminen ja joiden ostaminen, maksaminen ja/tai kuluttaminen on mahdollista internet-yhteyden välityksellä digitaalisesti. Esimerkkejä sähköisistä palveluista ovat mm. eTalo, verkkopankit, e-lippukaupat, POP Vakuutus, Amazon, Elisa Viihde, iTunes, Spotify, Netflix jne. Myös monilla ei-digitaalisilla yrityksillä on sähköisiä palveluita, kuten Verohallinto, Kela, Nike Plus jne.

Käyttämälläsi päätelaitteella (tietokone, tabletti, älypuhelin, äly-TV tms.) ei ole väliä.

Sähköisten palveluiden käytöstä on tullut minulle pysyvä tapa

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Olen riippuvainen sähköisten palveluiden käytöstä

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Sähköisten palveluiden käyttö on minulle täysin luonnollista

Täysin samaa mieltä	Samaa mieltä	Hieman samaa mieltä	En samaa enkä eri mieltä	Hieman eri mieltä	Eri mieltä	Täysin eri mieltä
()	()	()	()	()	()	()

Pyytäisimme lopuksi muutamia taustatietoja itsestäsi ja kotitaloudestasi

	Mies	Nainen	En halua vastata
Sukupuoli	()	()	()

	alle 18	18-25	26-35	36-45	46-55	56-65	65+	En halua vastata
Ikäryhmä	()	()	()	()	()	()	()	()

	1	2	3	4	5	6	7+	En halua vastata
Kotitaloudessasi asuvien henkilöiden lukumäärä	()	()	()	()	()	()	()	()

Asuntososi koko

- () 1h+k
- () 2h+k
- () 3h+k
- () 4h+k
- () 5h+k
- () 6h+k
- () Suurempi kuin 6h+k
- () En halua vastata

APPENDIX B. Rotated component matrix with all initial research variables

Rotated Component Matrix^a

	Component			
	1	2	3	4
PU3	,773			
ATT4	,769			
PU1	,739		,308	
PU2	,728			
ATT2	,702		,388	
ATT3	,687		,399	
CID5		,860		
CID2		,822		
CID4		,798		
CID1		,793		
CID3		,774		
EOU1			,857	
EOU3			,837	
EOU4	,430		,744	
EOU2	,416		,677	
PU4	,369		,535	
EXP1				,895
EXP3				,883
EXP2				,774
ATT1				,448

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

APPENDIX C. Correlation matrix for Actual usage and model variables

		Correlations				
		Attitude and perceived usefulness	Perceived ease of use	Community identity	Experience	Actual usage
Attitude and perceived usefulness	Pearson Correlation	1	,612**	,187**	-,019	,342**
	Sig. (2-tailed)		,000	,000	,726	,000
	N	355	355	355	355	355
Perceived ease of use	Pearson Correlation	,612**	1	,108*	,042	,277**
	Sig. (2-tailed)	,000		,042	,429	,000
	N	355	355	355	355	355
Community identity	Pearson Correlation	,187**	,108*	1	,018	,097
	Sig. (2-tailed)	,000	,042		,740	,068
	N	355	355	355	355	355
Experience	Pearson Correlation	-,019	,042	,018	1	-,119*
	Sig. (2-tailed)	,726	,429	,740		,025
	N	355	355	355	355	355
Actual usage	Pearson Correlation	,342**	,277**	,097	-,119*	1
	Sig. (2-tailed)	,000	,000	,068	,025	
	N	355	355	355	355	355

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).