Exploring Consumer Acceptance of Software-as-a-Service – Case Palkkaus.fi

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2015
Abstract:

Undeclared work has been a huge problem around the world since the liberation of economies. One debated reason has been due to the overcomplicated and bureaucratic procedures that go with wage payment. With technological innovations, facilitating services might provide opportunities to ease this and potentially reduce the undeclared work. Acceptance of technology has been studied for nearly three decades, but has not yet focused to the full extent to new cloud opportunities such as SaaS. The research done so far has concentrated on a service quality approach, partly neglecting the consumers’ thoughts and rationalizations on accepting new technology.

This study aims to explore the underlying reasons for consumer acceptance of SaaS. This should give a better insight in the processes behind acceptance. To address this aim, 6 interviews have been conducted through a heterogeneity sampling method by predefining aspects that the respondents are chosen across.

The results suggest that consumers accept SaaS through a seven factor model modified by personal traits. The model is a significant expansion from the original Technology Acceptance model, taking into consideration both online and consumer contexts.

As the study consists of a small sample, one case company and conducted in only one country, it is not possible and it should not be seen as a generalizable model, rather as groundwork for further studies for consumer acceptance in SaaS. To address validity and reliability, as transparent information as possible is presented and the study itself is kept on as high of a theoretical level as possible in order to not false information due to a case study approach.

Future studies should focus on taking the presented model into other contexts and test its generalizability through quantitative studies. Furthermore a similar study could be conducted using the already established user base and thus see how they perceive the acceptance process.

Keywords: Technology acceptance model, behaviour, Software-as-a-service, SaaS
## CONTENTS

1 INTRODUCTION...........................................................................................................1
   1.1. Problem .............................................................................................................2
   1.2. Aim of the Study .............................................................................................4
   1.3. Definitions .......................................................................................................5
   1.4. Delimitations ..................................................................................................5
   1.5. Case Palkkaus.fi .............................................................................................6
   1.6. Structure of the thesis ....................................................................................8

2 LITTERATURE REVIEW.............................................................................................10
   2.1. Software-as-a-Service (SaaS) .........................................................................10
   2.2. Theory of Reasoned Action (TRA) – The Foundation .................................12
   2.3. Technology Acceptance Model (TAM) – The Core ........................................13
       2.3.1. External variables .....................................................................................14
       2.3.2. Perceived Ease of Use ............................................................................15
       2.3.3. Perceived Usefulness .............................................................................16
       2.3.4. Attitude Toward Using ..........................................................................17
       2.3.5. Behavioural Intention to Use .................................................................17
       2.3.6. Actual Use ...............................................................................................18
   2.4. Evolution of TAM ...........................................................................................19
   2.5. Criticism and limitations on TAM ..................................................................21
   2.6. Alternative Acceptance models .......................................................................22
   2.7. Distinctions in Technology Acceptance and Consumers ...............................23
       2.7.1. Hedonic values .......................................................................................24
       2.7.2. Consumers perception of technology safety and cost ..............................25
       2.7.3. Personal traits .........................................................................................26
       2.7.4. Social pressure .......................................................................................26
   2.8. Distinctions in Technology Acceptance and the Internet ...............................27
   2.9. Summary .........................................................................................................29

3 METHODS SECTION..................................................................................................32
   3.1. Thesis methodology .......................................................................................32
   3.2. Case Study ......................................................................................................34
   3.3. Sampling .........................................................................................................35
   3.4. Data collection ...............................................................................................37
TABLES

Table 1: Information on respondents ........................................................................36
Table 2: Matrix of respondents’ traits .....................................................................37
Table 3: Summary of determinants and characteristics ..............................................76

FIGURES

Figure 1: Obligations in employer – employee relationship .................................7
Figure 2: The employer – employee relationship through Palkkaus.fi ..............7
Figure 3: Proposed Technology Acceptance Model (Davis 1986) ......................13
Figure 4: Technology Acceptance Model (Davis et. al. 1989, p.985) ............14
Figure 5: Timeline of TAM research (Lee et. al. 2003) ......................................19
Figure 6: Summarized model of TAM and TRA with focus and possible context
specific issues ........................................................................................................31
Figure 7: Screen Capture 1 from Palkkaus.fi ......................................................48
Figure 8: Screen Capture 2 from Palkkaus.fi ......................................................49
Figure 9: Proposed conceptual Model .................................................................64
1 INTRODUCTION

Shadow economy, the undeclared market of goods and services, has been an extensive socio economic problem since the liberation of economies around the world. According to payment service provider VISA’s (2014) report on the European shadow economy during 2013, the shadow economy in Europe alone reached an estimated 2.15 trillion Euros, roughly 18.5% of the total economic activities. From this sum an estimated two-thirds come from undeclared work, in order to avoid taxes. (VISA 2014)

According to the same report the same estimated numbers for Finland are 26 billion Euros, roughly 13% of the total economic activities in 2013 (VISA 2014). Not only is this a problem for governments, losing tax money, but also it might have consequences for the individuals as well, as undeclared work have no guarantees or insurances nor do the workers have the appropriate social safety net behind them if any accidents were to happen (VISA 2014; Vero.fi 2013).

The shadow economy, also called the grey economy, was noted in the media in Finland again in the early 2013, when there was admittance of paying for labour without declaring it on a Ministry level (Iltasanomat.fi 2013). Since then the undeclared work has been a hot topic and the government has gone to great lengths to control it by forcing laws, regulations, controls and penalties (Vero.fi 2013).

One debated reason for the lack of declaring work is due to the complicated procedures an employer has to go in order to pay all the needed parts of the labour (Kauppalehti.fi 2013). As for the time there is no unified process of handling the payments to the different authorities.

The Finnish tax-authorities have created a website (Palkka.fi) for calculating wages and taxes but this is only a partial solution, as the service does not consider various insurance and pension payments. While larger companies use tailored systems that automates wage payment, smaller companies and private employers most likely do not have the resources to use these and thus have to do payments manually and learn the procedures that go with it. There might therefore be an opportunity for a unified service that handles these bureaucratic procedures in one space, quickly and easily, which the case service Palkkaus.fi aims to fill.
As we are living in a digital age, surrounded by technology, consumers have become more reactive than before. We expect things to happen with the click of a button on our laptops, tablets or smartphones. Accessing bank account information, buying flight-tickets or just searching for information, can be done quickly in the matter of minutes. This phenomenon on the one hand gives opportunities for technology and software that IT aims to facilitate, but on the other hand due to the vast amount of alternatives, it faces problems of gaining recognition and especially long term use.

As companies and consumers alike are increasingly shifting towards providing and consuming services rather than products, the offering model calls for change across different business aspects (Grönroos 2010). Companies have started to utilize websites as a way to distribute their software and hence transforming the traditional on the shelf product into service offerings, providing more extensive support across the usage. Multibillion dollar companies such as Microsoft, Adobe and Salesforce are excellent examples of well-known software companies that have transformed their distribution chains with the help of cloud technology, such as SaaS.

1.1. Problem

The Software-as-a-Service (SaaS) delivery model has become increasingly popular with both vendors and users recently, due to the advantages it has compared to traditional software. From a customer’s perspective, SaaS reduces costs, increases flexibility, and lowers risk. Rather than buying tailored software, users log in to the service through a website and pay e.g. monthly subscription fees or on a usage basis. (Du, Lu, Wu, Li and Li 2013) Thus understanding why customers opt to use or disuse the service offering (in this case the software) is crucial for companies, not only to secure new business but to maintain existing users and loyalty, as the switching costs are small compared to tailored systems.

Different models and adaptations of these have been created and tested to find understanding in user acceptance e.g. Davis, Bagozzi and Warshaw 1989; Lam, Chiang and Parasuraman 2008; Taylor and Todd 1995; Parasuraman 2000; Venkatesh and Brown 2005. While the models acknowledge the consumer behaviour as rational (derived from Ajzen & Fishbeins theory of reasoned action), different models account distinct variables and relationships for the underlying reasons of user acceptance (Davis et. al. 1989; Lam et. al. 2008; Ajzen and Fishbein 1980).
The generally used behaviour model in Information Systems (IS), the Technology Acceptance Model (TAM) originally presented by Davis (1986), later illustrated by Davis et. al. (1989), was created to understand user acceptance in information systems (IS) in workplace contexts, and has since repeatedly been studied to understand and confirm technology acceptance in various scenarios. The TAM itself has grown so popular that Davis et. al. (1989) is one of the most cited research articles published in the field, with well over 2400 citations (according to ProQuest).

Though the vast amount of research conducted using the TAM, seemingly little focus has been put on end consumers with the exception of e.g. Bruner Il and Kumar 2005; Pavlou 2003; Pikkarainen, Pikkarainen, Karjaluoto and Pahnila 2004; Kulviwat, Bruner Il, Kumar, Nasco and Clark 2007; Singh, Fassott, Chao and Hoffmann 2004; Antón, Camarero and Rodríguez 2013. Singh et. al. (2004) furthermore note that in traditional marketing literature the most prevailing consumer behavior theory used is in fact the theory of reasoned action, but argues that the TRA has not been developed for technology contexts but rather traditional consumer behavior.

It is important to distinguish workplace contexts from consumer contexts while discussing acceptance processes. As noted by Kulviwat et. al. (2007) there is a clear distinction between a workplace context and a consumer context in technology acceptance; while workers usually are forced to accept a specific technology, consumers have the free choice motivated through their thoughts and feelings, thus changing the dynamics of the phenomenon.

Since the TAM has evolved throughout the years and at least three dozen different distinct variables have been confirmed to have a positive impact on the variance and another few dozen variables to have mixed results (Lee, Kozar and Larsen 2003; Pantano and Di Pietro 2012), not to mention the acceptance models derived from the original TAM (e.g. Venkatesh and Brown 2001; Venkatesh et. al. 2003), some have gone as far as stating that technology acceptance research has reached a “stage of chaos” (Bagozzi 2008;245).

Taking the TAM into a SaaS environment, researchers have approached the phenomenon of technology acceptance through a service quality perspective. Since SaaS is a way of delivering a service offering, it is theorized that a high quality service should indicate acceptance of the technology. (Benlian, Koufaris and Hess 2012; Wu 2011a; 2011b; Du et. al.2013) Even though this is a good starting point in
understanding drivers behind acceptance in this context, simply relying on high service quality might not be enough. The proposed SaaSQUAL model does e.g. take into consideration neither users’ personal traits nor social aspects (with the exception of Du et. al. 2013 modification), which are shown to have a significant influence on technology acceptance in other contexts (Pantano and Di Pietro 2012; Bagozzi 2007; Benlian 2012).

Thus gaining a deeper understanding in context specific issues might not only help IT companies understanding how to improve their service offerings but also how to gain more volume and loyalty in their business. This thesis aims to identify how consumers accept SaaS. The study will focus on a case company aiding to ease the bureaucratic procedures of payments in an employer – employee relationship (explained more in detail in subchapter 1.5.) and thus potentially enlarge government tax incomes by reducing undeclared work.

1.2. Aim of the Study

As noted, research on technology acceptance has faced a numerous amount of research and insights that have torn the concept into several directions. SaaS (Software-as-a-Service) has begun to be noted throughout companies as a way to provide their service offering. Research so far has tackled acceptance in this context through a service quality approach similar to traditional service research.

This thesis aims to explore the underlying reasons for consumer acceptance of SaaS. This aim will hopefully provide deeper insights in consumer acceptance in services provided over the internet as a software and thus provide insights in what it takes to accept this kind of service offerings which might lead to understanding in continuous use and thus loyalty. Furthermore as the case company of the study aims to decrease grey economy in the form of undeclared work it will be interesting to see if and how this moral aspect will influence the acceptance process.

The aim can thus be rephrased into the following research question:

- What characterizes consumer acceptance in SaaS environments?
1.3. Definitions

*Software-as-a-Service (SaaS)* is defined by Gartner IT Glossary as following:

“software that is owned, delivered and managed remotely by one or more providers. The provider delivers software based on one set of common code and data definitions that is consumed in a one-to-many model by all contracted customers at any time on a pay-for-use basis or as a subscription based on use metrics.”

To make this definition as simplistic as possible, SaaS is to provide a single software or a larger system of software through the internet. All parts of the software are hosted by the service provider and thus the customer only needs a computer with a web browser and an internet connection. Salesforce.com, one of the largest B2B Cloud vendors, simplifies the concept even further as following: “This [referring to SaaS] means pretty much any program that you use on the internet” (Salesforce.com). A further discussion on SaaS will be presented in subchapter 2.1.

1.4. Delimitations

This thesis will focus on a single case company aiding to help the bureaucratic relationship between employers and employees. Additionally this study will be only conducted in Finland, noting that there might be cultural differences in adoption processes as noted by Singh et. al. (2004).

As SaaS is quite a diffuse concept and is used in several different ways. Some define SaaS more strictly as larger systems of software provided through one website portal in B2B contexts. However in this thesis the concept will be defined more broadly as a service built as a software/program provided through the internet and accessed through a webpage using a web browser without having to download any parts onto the computer. By defining the concept more broadly, there is a less chance of causing confusion among the respondents, who might not understand what SaaS is.

As the case service is somewhat technical issue specific, the aimed user groups are from young adults to the upper range of middle aged users. To specify this further the chosen age range for the population has been decided as 20-65 in this study. Depending on the definition, this age range can be considered as the generations X and Y.
The reason why users outside this range have been rejected are the following. Users under 20 will most likely not have the type of knowledge or information surrounding the concept of wage payments, and more likely have no interest or use in a service like this at that point of age. The upper limit of the age range has been defined due to the technical aspects of the service. Even though older consumers might have use for the service, in general the elder population are less used to technology and thus might not have a general understanding or usage of technology.

1.5. Case Palkkaus.fi

Palkkaus.fi is a service that was launched 13.08.2014 by Suomen Palkanlaskenta Oy. The aim of the service is to make the bureaucratic employer – employee relationships in a private employer scale more manageable and easy through a single payment solution. After launch the service will be further modified to function for smaller companies and accounting firms as well.

When employing a worker, households have basically the same obligations that companies have when it comes to wage payments and declaration. There are two distinct cases in different payments and notices a private employer / household has to make.

(1) If the paid wage is under 1500€ annually the household is obliged to give annual tax notice (if over 200€), but does not have to collect taxes from the employee. Nor do they have to pay the social security fee. Possible statutory pension and insurances depend on age and income. (Vero.fi 2013)

(2) If, however, the annual sum exceeds 1500€ the household is obliged to collect taxes, pay the social security fee, pay statutory pension and insurances (including earnings-related pension, accident insurance, unemployment insurance and group life insurance), give annual notices and income tax return notices. Furthermore if the household wants to redeem domestic help from the government, they have to report the paid salaries and then make a further declaration on the additional payments that can then be reduced from their own annual income notice. (Vero.fi 2013)
Figure 1 illustrates the relationships between the employer and employee, and all the obligated activities within it. As discussed above and illustrated in figure 1, there are many payments to different instances that have to be kept in mind. Not only do these payments go to different instances but they also have to be paid during different dates, complicating the matter even further.

Figure 2: The employer – employee relationship through Palkaus.fi
Figure 2 illustrates the same processes and relationships that figure 1, but through Palkkaus.fi service. Instead of handling the distinct payments themselves, employers only have to insert the paid wage and tax percentage to the service and it calculates the different payments together. Then through a single payment, the employer has taken care of all obligations they have.

When talking about households as employers, the service also creates a template for domestic help that can be printed and sent to the tax authorities. Furthermore the service will store all the data of the payments and users can later see all their activities across time.

Not only does it save time for employers, but the service is aimed to reduce undeclared work and thus increase government tax incomes and pension incomes. Furthermore households get monetary benefits since they are allowed domestic help that can be withdrawn as tax rebate from their annual incomes.

1.6. Structure of the thesis

This subchapter will present more in depth the structure of this thesis. Chapter 1 was an introduction into the topic highlighting the problems and explaining and delimiting the research space in which this thesis aims to broaden knowledge.

The second chapter will present the literature review. The chapter has been structured to first discuss SaaS further in detail explaining the two streams of research. Afterwards a brief overall picture of where the technology acceptance literature has started from will be presented. Next the Technology Acceptance Model is extensively presented, including the model itself, evolution of the model, and criticism and limitations of the model, before discussing alternative acceptance models. Finally the chapter will discuss some specific contexts in Technology Acceptance literature before summarizing the literature review.

The third chapter will focus on the thesis methodology, discussing chosen methods, sampling strategy, data collection, analysis and finally the quality of the study. The reasoning behind the chosen methods will be discussed in each subchapter after a brief presentation of methodology literature.
Chapter 4 will present both the results and the analysis. This way each topic and finding can be discussed as the results are presented and thus making it easier to follow. This also keeps the possible repetitions to a minimum and thus eases with keeping the focus. The fifth chapter will have a summarizing discussion about the results and discuss managerial implications. Furthermore the chapter will include a discussion on possible limitations of the study and how the knowledge gained in this study can be used in further studies. The thesis will then conclude with a Swedish summary of the whole thesis, bibliographic information and appendixes.
2 LITTERATURE REVIEW

The following chapter will present the relevant literature review. The chapter will start by discussing SaaS and the streams of research. Afterwards there will be a chapter that briefly presents the Theory of reasoned action (TRA) by Ajzen and Fishbein, which is the foundation of the Technology Acceptance Model (TAM). Next the TAM will be extensively presented in subchapters 2.3 – 2.5 including evolution and criticism of the model. Subchapter 2.6 is going to present other relevant acceptance models and their relation to the TAM following with subchapters 2.7 and 2.8, which will highlight distinctions in consumer respective internet contexts when considering acceptance of technology. Finally subchapter 2.9 will summarize the whole review and highlight the important aspects when studying technology acceptance and SaaS environments in a consumer context. A summarized figure will be presented in order to illustrate the relationships between TRA and TAM, while highlighting some context specific issues. Chapter 3 will then present the Methodology section of the thesis following by results, analysis and discussion.

2.1. Software-as-a-Service (SaaS)

During the recent years, cloud computing has become more and more popular and services provided through the internet are growing constantly. Services over the cloud are said to lower costs, increase scalability, ease implementation, and to speed up upgradability. (Benlian et. al. 2012; Wu 2011a; 2011b)

Cloud services are usually divided into three categories; IaaS (Infrastructure-as-a-Service), PaaS (Platform-as-a-Service) and SaaS (Software-as-a-Service). The main idea is to provide the user a specific service through the Internet on different levels of operation. (Wu 2011a)

Software-as-a-service (SaaS), is a software that utilises cloud computing and is delivered over the internet as a service (Benlian et. al. 2012). Compared to traditional software, SaaS services do not have to be downloaded to each workstation separately but can be reached simply by through a website. SaaS can furthermore be categorized in the following user categories; Consumers, Small and Medium enterprises, and Large corporations. SaaS is mostly noted in B2B contexts when talking about Enterprise Resource Planning (ERP) systems, Sales or HR management (Benlian et. al. 2012).
Though SaaS being a hot topic recently, studies in acceptance of SaaS, especially on a consumer level, have been limited. This can possibly be explained by the diffusion surrounding the concept. As noted, SaaS is mostly considered in B2B contexts but consumers are surrounded by SaaS applications virtually the whole time when browsing the internet without possibly even knowing it (e.g. Facebook, Spotify, Dropbox) (Wu 2011a).

Du et. al. (2013) present three basic characteristics to SaaS, noting that these apply to most but not all. These characteristics are; (1) charging a subscription or usage fee, (2) the software and data is provided through a one-to-many concept, and finally (3) accessed through the Internet using a browser (Du et. al. 2013). Especially in B2B contexts, the introduction of cloud software has changed the buying mechanism from owning (traditional, one time buy) to renting (cloud, pay-as-you-go, or monthly). Notable though, especially in consumer SaaS, is that companies do not always rely on subscriptions or usage fees but can use advertisements, freemium models and other flows of income instead. Examples of consumer SaaS that do not charge for normal use are e.g. Facebook, Google, Hotmail, Dropbox and Spotify.

The research done in acceptance of technology and SaaS can be divided into two streams. One focuses on defining the acceptance process through a service quality perspective (e.g. Benlian et. al. 2012), while the other, more studied stream of technology has focused on the Technology Acceptance Model (Davis et. al. 1989) and its derivatives.

Researchers tackling acceptance from a service quality perspective, have tried to focus on developing an unified SaaS-QUAL (something resembling the SERVQUAL on measuring service quality) in order to gain understanding on quality aspects of the service offering model and thus leading to acceptance (Benlian et. al. 2012). Their study showed a six (6) factor model used to measure service quality in SaaS environments, which include: rapport, responsiveness, reliability, flexibility, features and security (Benlian et. al. 2012).

Du et. al. (2013) conducted a somewhat similar study aiming to understand service quality and adoption in a SaaS environment. Their quality measures consisted of the same Security, Reliability and Responsiveness than the study conducted by Benlian et. al. (2012), but rather than having these factors working as the external variables in TAM, Ease of Use was integrated into the E-service quality aspect. Thus Security,
Reliability and Responsiveness affected Perceived Usefulness and Behavioural Intention to use rather than Perceived Usefulness and Ease of Use as the traditional TAM proposes (Du et. al. 2013; Benlian et. al. 2012). Furthermore Du et. al. (2013) incorporated Social Influence, as acknowledged in previous TAM research, in their model.

The other stream, the more traditional acceptance literature when talking about technology has been tied into the famous Technology Acceptance literature presented by Davis et al. (1989). This is the focus of this thesis as well, but since cloud technology and traditional technology differ quite drastically from each other, some adjustments might have to be made when taking the TAM into a SaaS perspective. The TAM will now be extensively discussed in the following chapters, starting from explaining the foundation (Theory of Reasoned Action) that the TAM is based on.

### 2.2. Theory of Reasoned Action (TRA) – The Foundation

When talking about traditional behavioural theory and consumer behaviour, there are only few models as known as the Theory of Reasoned Action. Developed by Ajzen and Fishbein, the theory assumes that individuals are rational and use whatever information they have on hand when intending to make decisions. (Ajzen and Fishbein 1980)

Furthermore TRA is based on the assumption that an individual’s intentions are formed from two basic determinants; the personal factor and the social influence. The personal factor in this sense refers to: “the individual’s positive or negative evaluation of performing the behaviour” (Ajzen and Fishbein 1980:6) and is noted as the attitude towards the behaviour. More generally this means that different individuals have different attitudes towards different behaviours, e.g. drinking coffee; some have more favourable attitudes towards it, while others cannot stand it.

The second determinant, social influence i.e. subjective norm, is the “person’s perception of the social pressures put on him to perform or not perform the behaviour in question” (Ajzen and Fishbein 1980:6). We might therefore drink coffee because people around us tend to do so or expect us to do so.

These two determinants are each subjected to a relative weight depending on the situation and the person. To understand further how these intentions are formed,
researchers have to focus on the beliefs. The theory explains that “attitudes are a function of beliefs” (Ajzen and Fishbein 1980:7) and thus our intentions to behave in a certain way are determined by our positive or negative beliefs toward the behaviour.

2.3. Technology Acceptance Model (TAM) – The Core

The TAM was conceptualized by Davis (1986) in his Ph.D. and has since been extensively studied and tested in various scenarios across technologies, age-groups, countries and levels of expertise (see e.g. Marangunić and Granić 2014; Lee et. al. 2003; Legris, Ingham and Collerette 2001; Pantano and Di Pietro 2012). The model was originally created with two objectives in mind: firstly to understand the acceptance processes of users and secondly to create a basis for practical testing of acceptance before implementing Information Systems (IS) (Davis 1986).

Figure 3 presents the original proposed model of the TAM by Davis (1986). The model has its foundation in the widely accepted psychological model TRA developed by Ajzen and Fishbein (1980) noting that users act through a conscious thought process when deciding whether or not accepting technology (Davis 1986). Davis (1986) furthermore notes that when facing new technology, two key determinants (Perceived Usefulness and Perceived Ease of Use) emerge as the most prevailing attributes in user acceptance. These determinants, also noted as the cognitive response by Davis (1986), directly
affect the attitude towards using technology and are affected by design features, or external variables as noted in further research (Davis et. al. 1989).

The final version of the original TAM (figure 4), presented by Davis et. al. (1989) adds Behavioural Intention to Use (BI) as a factor for user acceptance. In contrast to the TRA, where BI is determined by attitude and subjective norm, the TAM considers BI to be determined by perceived usefulness and attitude (Davis 1989; Davis et. al. 1989).

Subjective norm is not included in the original TAM due to the complicated relationship and uncertain theoretical foundation (Davis et. al. 1989), however in future research the extended TAM, coined TAM2, takes subjective norm into consideration but rather than affecting BI directly, the relationship is modified by variables “experience” and “voluntariness” (Venkatesh and Davis 2000)

2.3.1. External variables

External variables as noted originally by Davis (1986) as design features consist of sets of variables that are in direct relationship with the Usefulness and Ease of Use, these might include e.g. features and characteristics (Davis et. al. 1989). The set of external variables does not only vary depending on the context but both Ease of Use and Usefulness are affected by a unique set of variables depending on the individual and situation (Davis et. al. 1989).
Lee et. al. (2003) provide an extensive list of external variables that have been studied during the course of the existence of the TAM. According to their meta-analysis, a total of 24 external variables and their relationships to the different aspects of the model have been tested and deemed at least partially significant (varying from study) until 2003 (Lee et. al. 2003). In a later literature review, Marangunić and Granić (2014) noted personality traits, demographic characteristics and computer self-efficiency as notable external variables. Even though the TAM has been widely studied through the years, Marangunić and Granić (2014) still call for deeper understanding in the external variables, highlighting individual variables and environmental factors.

2.3.2. Perceived Ease of Use

Perceived Ease of Use (E), defined as “the degree to which a person believes that using a particular system would be free of effort” (Davis 1989:320), is one of the key determinants in attitude towards using technology. The foundations for incorporating ease of use can be found in several streams of research e.g. innovation theory and self-efficiency theory (Davis 1989).

Perceived ease of use is determined by external variables, i.e. determinants, varying in contexts but e.g. usability, training, documentation and features have been noted as potential influencers on Ease of Use (Davis et. al. 1989) and later e.g. computer self-efficiency and objective usability (Venkatesh and Davis 1996) have been noted to have an effect on Perceived Ease of Use. Venkatesh (2000) continued the research on the antecedents of Perceived Ease of Use and proposed a dualistic view on the determinants, suggesting there are two types of determinants; Anchors and Adjustments.

The Anchors refer to the individual’s general beliefs about technology and its use (Venkatesh 2000). His research suggest that the anchored beliefs can dived into three concepts and can be captured through four determinants; Control (captured through Computer Self-Efficiency and Facilitating condition), Intrinsic Motivation (captured through Computer playfulness), and Emotion (captured through Computer Anxiety) (Venkatesh 2000).
The Adjustments on the other hand refer to determinants that will shape Perceived ease of use over time when gaining direct experience. Venkatesh (2000) found that there are two main Adjustments affecting the Perceived ease of use; Objective Usability and Perceived enjoyment. Objective Usability relates to the actual effort needed to complete a certain task and is independent to the individual experiences and knowledge. Perceived enjoyment on the other hand refers to how enjoyable the technology/system is perceived not taking to account any performance consequences. This can be affected through design features that make the use more enjoyable, e.g. the interactive paper clip a.k.a. Office Assistant, in earlier Microsoft Office programs. (Venkatesh 2000)

Ease of use has a direct effect on both Perceived Usefulness and Attitude towards Using. If a technology is perceived easy to use it will not only impact how useful the technology is seen, but also how efficient a user can be and hence impact intrinsic motivations i.e. attitudes (Davis et. al. 1989). The relationship between Ease of Use and Usefulness is formed through the thought that everything else being equal, the more easy to use a technology is, the more useful it will be (Venkatesh 2000).

Davis et. al. (1989) further explain the relationship between Ease of use and Usefulness to change after time. While gaining skills needed to use a particular system, the independent importance of Ease of Use will decline and rather start to affect Usefulness. (Davis et. al. 1989)

### 2.3.3. Perceived Usefulness

Perceived Usefulness (U) is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis 1989). This derives from the B2B context, arguing that if a system is perceived useful there is a positive user-performance relationship, i.e. a useful system may enhance productivity and thus hit e.g. sales goals (Davis 1989). In a consumer context however, the perceived usefulness is affiliated with “the perceived probability that the technology in question will somehow be beneficial to accomplish a task” (Ferreira, da Rocha and da Silva 2014:867).
During the years, researchers have tried to explain perceived usefulness through various variables. These include e.g. job relevance, social pressure, result demonstrability, image, complexity, attitude, perceived enjoyment, social aspects, managerial support and trust (Lee. et. al. 2003; Pavlou 2003; Venkatesh and Davis 2000)

Venkatesh and Davis (2000) conducted four longitudinal studies consisting of a period of three months to validate the antecedents of perceived usefulness. They found four variables; Image, Job relevance, Output quality and Result demonstrability, to have a direct influence on Perceived usefulness. Furthermore they noted that subjective norm influences not only perceived usefulness but also Image and Intention to use. Notable in their data was also that subjective norm only influenced Intentions to use when compelled to use and experience was near none. (Venkatesh and Davis 2000)

2.3.4. **Attitude Toward Using**

Attitude toward Using (A) is formed primarily by Usefulness (U) and ease of use (E), creating a causal relationship. Mathematically this is presented as a linear regression: \( A = U + E \), and is derived from TRA, where relevant beliefs determines attitude towards behaviour (Davis et. al. 1989). The relationship between Attitude and Intention is justified by Davis et. al. (1989:986) by stating that: "all else being equal, people form intentions to perform behaviors toward which they have positive affect".

In a later study Venkatesh & Davis (1996) proposed to drop the Attitude Toward Using since they found that both Usefulness and Ease of use have a direct relationship towards Behavioural Intention and the link between attitude and intention was weak (Venkatesh and Davis 1996). This derives from their findings that people had intentions to use technology even though their attitude towards it was not positive (Venkatesh and Davis 1996).

2.3.5. **Behavioural Intention to Use**

Behavioural Intention to Use (BI) is viewed as a key determinant in the use or disuse of technology. Getting verification from their dataset, Davis et. al. (1989) defined BI to be the sole indicator for actual use and all other variables only affect BI and not actual use.
BI is determined by both perceived Usefulness and Attitude toward using. The relationship between Attitude and Behavioural Intention is directly derived from TRA and implies that if there is a positive attitude towards a behaviour, there will be positive intentions towards this behaviour as well (Davis et. al. 1989). The usefulness – BI relationship on the other hand refers to B2B contexts where e.g. increased productivity might lead to forming intentions to use a particular technology due to extrinsic motivations such as sales targets and bonuses, thus eliminating the role of attitude towards the technology (Davis et. al. 1989).

2.3.6. Actual Use

Actual Use is the final stage of the acceptance process and is stipulated by BI. Derived from the TRA, which notes that the likelihood of behaving (use) is directly determined by the person’s intentions to behave (use) (Ajzen and Fishbein 1980:5). While the TRA (and TAM using the same ideology) notes that it is most likely to behave as intended, e.g. Bagozzi (2007) calls for caution in being so deterministic in the relationship between BI and Use since there might be shaping activities e.g. testing and planning, between the actual intention and use in technology acceptance (Ajzen and Fishbein 1980; Davis et. al. 1989; Bagozzi 2007).

Venkatesh, Brown, Maruping and Bala (2008) studied the mechanisms of the relationship between actual use and BI. They found that behavioural expectation had a mediated effect on the relationship between the two, suggesting that actual use should not be assumed to be predicted from solely BI.

Measuring technology use (or any form of behaviour) can be complicated in the sense that it might not be available at the time of measurement and thus researchers have often relied on self-reported usage in many studies rather than actual usage (Ajzen and Fishbein 1980; Davis et. al. 1989; Lee et. al. 2003). Self-reported usage was found as the most cited limitation in the near two decades of research that Lee et. al. (2003) reviewed.

Ajzen and Fishbein (1980) note that while relying on self-reported use has its limitations, at the same time it has some clear advantages. Resources (time and money) are quite obvious, but when considering usage across time (e.g. How many times
during the last year...?), larger data collection is made possible even though there is reason for caution when relying on the collected data (Ajzen and Fishbein 1980).

Some researchers furthermore suggest that the actual usage should be noted in different points of time since the first time can only be e.g. testing and not real usage, thus making it a hard to balance resources, points of time and actual use/self-reported use (Bagozzi 2007; Taylor and Todd 1995). Ajzen and Fishbein (1980) suggest making clear criterions and definitions on what to observe and measure in order to find the right balance.

2.4. Evolution of TAM

Almost three decades since its conceptualization, the TAM has faced a good deal of adaptations and evolution, splitting the stream of research basically into two. One stream continued on the cognitive part while adding social aspects and finding the antecedents of both perceived ease of use and perceived usefulness (e.g. Venkatesh and Davis 2000; Venkatesh and Bala 2008; Pavlou 2003), and a second stream that shifted their focus on integrating aspects of affect into the model (e.g. Kulviwat et. al. 2007; Bruner II and Kumar 2005).

![Figure 5: Timeline of TAM research (Lee et. al. 2003)](image)
Lee et. al. (2003) conducted a meta-analysis on the near two decades of studies of the TAM (figure 5) and divided the studies into four distinct eras, beginning from the introduction in 1986, up to 2003. The first decade was focusing primarily on the introduction and validation of the model, while the first extensions to the TAM were not done before 1994, when Detmar W. Straub incorporated culture into the model. After this the research has primarily focused on TAM extension rather than validating it any further as it’s been so broadly tested. (Lee et. al. 2003)

The change of the millennium started a new era within studies of the TAM. Starting with Venkatesh and Davis (2000) the model has been elaborated to develop new versions of the TAM in order to solve limitations and combine previous research (Lee et. al. 2003).

Continuing on the legacy of the original TAM, Venkatesh and Davis (2000) focused their research first on determining the external variables influencing Perceived Usefulness (TAM2) and later Venkatesh (2000) determined the influencers of Perceived Ease of Use. As these two studies were completely separate, Venkatesh and Bala (2008) combined these findings in a search of possible crossover effects which then led to TAM3.

The main addition in TAM2 was including Subjective Norm into the model and thus considering social influences in the acceptation process (Venkatesh and Davis 2000). While Subjective Norm was left out in the original TAM due to the complicated theoretical relationship (Davis et. al. 1989), further research found significant relationships to both Perceived Usefulness and Behavioural Intentions (Lee et. al. 2003).

Gefen (2003) argued that the acceptance process especially in continuous use, may not descend from Usefulness and Ease of Use but rather from Habit or a combination of the three. The study showed that Habit alone explained nearly 40% of the variance in a continuous use in an e-commerce setting. This might thus partially explain why switching to a new technology might be felt less attractive, as we are used to do/use things in a specific way (Gefen 2003).
2.5. Criticism and limitations on TAM

While the TAM has gained a lot of advocates and has been repeatedly used to confirm technology acceptance, it has also received a share of criticism during its near three decade existence. Furthermore several limitations have been noted especially with the original TAM which were then addressed in the development of TAM2 and TAM3 (Lee et. al. 2003; Venkatesh and Davis 2000; Venkatesh and Bala 2008).

One of the most noted limitations is the generality and simplicity of the model (Mathieson 1991; Lee et. al. 2003). Relying on only two key determinants, which are more or less obvious when talking about technology. This is displayed well with the following comment when Lee et. al. (2003) asked researchers about specific shortcomings of TAM research, does not give that strong of practical guidance:

“imagine talking to a manager and saying that to be adopted technology must be useful and easy to use. I imagine the reaction would be “Duh! The more important questions are what makes technology useful and easy to use.” – Alan Dennis (from Lee et. al. 2003:766)

Thus focusing on the antecedents of both determinants as done when developing TAM2 and TAM3 as noted in previous chapters gives more knowledge especially in practical implications. On the other hand, having such a simplistic model gives possibilities to study technology acceptance across several different contexts.

Other critical issues that the TAM does not consider are group, cultural and social behaviours. Both Bagozzi (2007) and Mathieson (1991) call for consideration of cultural and social aspects. Even though the TAM is created to explain individual behaviour (Davis et. al. 1989), criticizers note that individual behaviour is to at least some extent affected by those around us since we do not live in isolation (Bagozzi 2007; Mathieson 1991).

As mentioned earlier, self-reported use has been one of the largest limitations to date (Lee et. al. 2003). Since self-reported use can skew results drastically from actual use, Legris et. al. (2001) suggest that when using self-reports, it should work as an indicator rather than measuring or predicting actual usage.

Furthermore there has been criticism on the used samples. Many of the earlier studies used students as samples when studying workplace software usage, which calls for
caution as student perceptions can vary much from those working in a business environment (Legris et. al. 2001; Lee et. al. 2003).

2.6. Alternative Acceptance models

As different scholars have different views on the subject of consumer acceptance, the literature has among the years witnessed quite a few different takes on consumer acceptance. The most noted models for technology acceptance have been the TAM, UTAUT (Unified theory of acceptance and use of technology) and TPB (Theory of Planned Behaviour) and in more traditional behavioural studies the TRA. Some scholars have tried to compare different models in order to gain understanding in which is the most prevailing.

Mathieson (1991) compared the TAM and the TPB in predicting user intentions. He noted that the TAM explained attitudes to a much greater extent than the TPB (explained variance 0.727 in TAM compared to 0.388 in TPB) (Mathieson 1991). Gentry and Calantone (2002) made a similar comparison between the TAM and TPB but also added TRA into their study and found similarities in the results, the TAM prevailing by explaining 81.1% of the variance while TPB explained 58.1% and the TRA 43.2%.

Combining the TAM and the PAD (pleasure, arousal, and dominance) theory presented by Mehrabian-Russell back in 1974, Kulviwat et. al. (2007) developed the CAT (Consumer Acceptance of Technology) model, highlighting the importance of both cognitive and affective aspects in technology acceptance theory. Not only did they explain a significantly higher percentage of the variance compared to the original TAM, but they also confirmed the need of deeper understanding of affect in technology acceptance. Their study presented strong evidence of both pleasure and arousal affecting attitudes towards adoption.

Venkatesh, Morris, Davis and Davis (2003) reviewed the (then) current literature on technology acceptance and noted eight models that they then compared empirically. These models included; theory of reasoned action (TRA), technology acceptance model (TAM), motivational model (MM), theory of planned behaviour (TPB), a combination of TAM and TPB, model of PC utilization, innovation diffusion theory, and social cognitive theory. Using the data collected in the study, they then integrated the eight models into one unified model of technology acceptance, UTAUT. Combining the
previous models and effects of these, they managed to reduce the determinants from 32 to 4 while keeping 4 moderators as well.

Later Venkatesh, Thong and Xu (2012) extended the UTAUT into a consumer context through adding additional constructs and relationships. Noting that consumers might find hedonic aspects, habit and price / relative advantages to be important, they incorporated these thoughts into the model, which they call UTAUT2. Their study showed that UTAUT2 works very well in predicting consumer acceptance of technology. (Venkatesh et. al. 2012)

Taking a step away from the workplace and individual consumer context, some focus was shifted on technology acceptance in households. Based on their previous research (Venkatesh and Brown 2001), Brown and Venkatesh (2005) acknowledged that the current models are insufficient when it comes to technology acceptance in households. Thus they constructed a new model specified for technology in households, Model of Adaption of Technology in the Household (MATH), taking into consideration household lifecycles as a crucial part in the acceptance process.

Parasuraman (2000) sought after understanding consumers’ readiness to accept technology since, as noted by Mick and Fournier (1998), technology can invoke both positive and negative feelings. The study resulted in a four factor model (TRI), which can be used to measure an individual’s readiness to adopt technology. The following factors were identified from the data; Optimism, Innovativeness, Discomfort and Insecurity. (Parasuraman 2000)

2.7. Distinctions in Technology Acceptance and Consumers

As discussed earlier, the original TAM was developed for workplace contexts but has been successfully used in consumer contexts as well. One of the main differences between workplace and consumer contexts is the possibility of choice. As Kulviwat et. al. (2007) notes, in consumer contexts there is the freedom to adapt or not adapting different technologies and thus the thought process differentiates.

Technology acceptance in B2C contexts that have been studied include e.g. the use of technology based self-service (Dabholkar and Bagozzi 2002), online retailing (Childers, Carr, Peck and Carsons 2001), handheld devices (Bruner Il and Kumar 2005), adaption of e-Book readers (Antón et. al. 2013), and mobile gaming (Okazaki 2008).
Pantano and Di Pietro (2012) conducted a meta-analysis on consumer context technology acceptance focusing on conceptual papers and retail settings. They noted that nine (9) variables were mostly emphasized. Pantano and Di Pietro (2012) then categorized these variables into four distinct groups: consumer’s perception of technology safety and cost, consumer’s personal traits, social pressure, and hedonic value. Next following Pantano and Di Pietro’s (2012) categorization of variables, different aspects that distinct consumer acceptance of technology will be presented.

### 2.7.1. Hedonic values

Hedonic values or factors seem to be the most emphasized aspect of consumer technology acceptance. Several authors suggest incorporating a hedonic factor into the adaption process with consumers (e.g. Bruner Il and Kumar 2005; Antón et. al. 2013; Okazaki 2008; Childers et. al. 2001). This need for understanding hedonic values can be derived from Hirschman and Holbrook (1982), who described consumers as either “problem solvers” or seeking “fun, fantasy, arousal, sensory stimulation, and enjoyment” i.e. hedonic values (from Childers et. al. 2001).

Dabholkar and Bagozzi (2002) studied technology based self-service on consumers and argued that usefulness should be dropped in this context since users participate rather than own a product. Thus they replaced “usefulness” with “performance” and added “fun” as a third determinant. They furthermore used moderating effects such as consumer traits and situational factors. They argue that their model can be used with any service experience as long as the critical attributes for the specific service. (Dabholkar and Bagozzi 2002)

Bruner Il and Kumar (2005) proposed a consumer context TAM (c-TAM) incorporating “fun” as Dabholkar and Bagozzi (2002) earlier, but keeping “usefulness” as a determinant rather than replacing it with “performance”. This might because of studying products in contrast to services, as Dabholkar and Bagozzi (2002) noted.

Building on Bruner Il’s and Kumar’s (2005) c-TAM, Okazaki (2008) further studied the hedonic aspects in search of clarification of which parts are involved with consumer adaption. The study suggest that “experimental value”, consisting of 7 attributes (Intrinsic enjoyment, Escapism, Efficiency, Economic Value, Visual appeal, Perceived novelty, and Perceived “risklessness” (how risk-free it is perceived)) should be incorporated into the hedonic aspect (Okazaki 2008).
2.7.2. Consumers perception of technology safety and cost

A second group of variables that are emphasized throughout the consumer acceptance literature is what Pantano and Di Pietro (2012) call Consumers perception of technology safety and cost. This incorporates aspects of perceived security, cost, risk and trust.

Perceived security is the most complicated concept of these since it relates much to both perceived risk and trust. According to Pantano and Di Pietro (2012) perceived security can however be noted as “a threat that creates circumstances, condition, or event that may cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service and/or fraud, waste and abuse.” (Pantano and Di Pietro 2012:8).

This can be understood as factors that influence the process of consuming the service offering of a service provider, e.g. visiting a website can be affected by the perceived security such as not getting computer infections of the visit. As noted this has also much to do with perceived risk and trust since we have to trust the service provider in this case not to have any malicious software on their website that would infect our computer.

In a study of consumer acceptance of mobile payment solutions, Dahlberg, Mallat and Öörni (2003) conducted focus group interviews and found six (6) types of security risks in their data: unauthorized use, transaction errors, lack of transaction record and documentation, vagueness of the transaction, privacy issues, and device and mobile network reliability.

While “Trust” has in many cases been seen as an external variable having an impact on Usefulness and Perceived Ease of Use (e.g. Pavlou 2003), others have linked it as an own determinant into the TAM (e.g. Gefen, Karahanna and Straub 2003; Dahlberg et. al. 2003). Trust is a major determinant in influencing long term use i.e. loyalty and is thus considered a key factor in technology acceptance with consumers (Pantano and Di Pietro 2012).

Extending the UTAUT to a consumer context, Venkatesh et. al. (2012) noted that the price / value ratio should be incorporated in addition to hedonic value and habit. As consumers are usually the ones paying for the services themselves (in contrast to
workplace contexts), they will consider what they get out of the service for the price they pay. Thus price / value ratio plays an important factor in payable services. If the consumer does not feel he/she gets their money worth, they are more unlikely to use the service. (Venkatesh et. al. 2012)

2.7.3. **Personal traits**

Personal traits have mostly to do with individuals' skills and abilities (Pantano and Di Pietro 2012). Most prevailing aspects have been self-efficiency and behavioural control, as noted already by Venkatesh (2000) in studying the antecedents of perceived ease of use (Pantano and Di Pietro 2012; Venkatesh 2000). How individuals perceive their own capabilities to use new technology is a direct influencer on perceived use and thus affects the whole adoption process (Venkatesh 2000).

Antón et. al. (2013) noted the importance of understanding individuals’ values and beliefs when building the image of the new technology. They further explain that technology can help consumers create self-images and thus the image portrayed by the company should be in line with the target audiences’ values.

2.7.4. **Social pressure**

Social pressure, i.e. how others influence the individuals’ behaviour has been a key concept in acceptance literature since TRA, then called subjective norm. As noted by e.g. Mathiesson (1991) and Bagozzi (2007), we do not live in isolation and are thus affected by those around us.

Influences to use or disuse technology might come from various sources e.g. word of mouth, friends, family, media, and peers, thus giving us more information about the technology that we then use to form our decision in a rational way, which is the premise for TRA. Antón et. al. (2013) furthermore noted that the more knowledge an individual has about the technology, the more useful and easy to use they perceive it.

Pantano and Di Pietro (2012) furthermore explain that influence can be divided into both external and interpersonal influences. External influences include reports and opinions of experts while interpersonal influences include friends, superiors and IT experts (Pantano and Di Pietro 2012).
Bhattacherjee and Sanford (2006) studied more closely external influences on technology adoption. While external influences have been previously proven important in attitudinal acceptance processes, they focused on which parts of the external influences affect the potential users. Their research suggests that external influences can be deployed most effectively through either high-quality argumentation about the benefits of a new technology or using credible endorsements (Bhattacherjee and Sanford 2006).

2.8. Distinctions in Technology Acceptance and the Internet

As commerce is shifting towards the internet, it is increasingly important to understand the drivers behind consumer behaviour and especially technology acceptance in online contexts. When talking about technology online, it is notable that all websites are basically IT (information technology) and most of them a channel to a vendor (Gefen et. al. 2003). There are some clear distinctions compared to traditional brick and mortar stores that affects online consumer acceptance.

Kim, Ferrin and Rao (2008) explain that rather than dealing with a traditional service, where the payment and consumption is done mostly at the same time (e.g. buying something), the e-commerce business is more un-transparent. When buying something online, rather than walking to a store during its opening hours and confronting an employee, everything is done through an interface on the screen of e.g. a mobile phone, tablet or computer, practically whenever and wherever. Koufaris (2002) points out that in online contexts, consumers cannot use the five senses but have to basically rely on the product descriptions and photographs.

The shopping experience has changed, the service is not instantaneous in the sense that payments are not usually registered immediately and delivery of the product is done even later. Therefore there is always a risk involved (the service provider not keeping his word) and thus trusting the provider is a critical aspect for business. (Kim et. al. 2008)

Besides the traditional determinants of TAM, i.e. perceived usefulness and perceived ease of use, trust and perceived risk has repeatedly been noted as crucial aspects in online acceptance behaviour (e.g. Kim et. al. 2008; Gefen et. al. 2003). Whereas trust was discussed earlier in the consumer context, it gains another role in the e-commerce context. As there is little personal interaction between the consumer and the service
provider, trust has usually more to do with the transaction process rather than face-to-face trust (Kim et al. 2008).

Furthermore, trust has been noted in having two roles in the acceptance process in online settings. Firstly, trust had a significant positive influence on buying intention i.e. the more an individual trusted the service provider the greater the intention to buy. Secondly trust had an reducing influence on perceived risk which further reduces the intention to buy, i.e. the more an individual trusted the service provider, less the perceived risk was, which hence reduced the negative impact on intention to buy. (Kim et al. 2008)

Trust in e-commerce context can be divided into four types, as noted by Kim et al. (2008); cognitive, affective, experience based and personality oriented. The cognitive type of trust incorporates observations and perceptions, e.g. how privacy and security is protected, brand image or website design. The affect based type on the other hand refers to indirect interactions, e.g. third party seals, user reviews and comments, recommendations and referrals. (Kim et al. 2008)

Experience based trust, as the name says, has to do with past experiences. How familiar is the service provider, previous experience with e-commerce and even with the internet (Kim et al. 2008). While having good experiences from service providers will more likely increase repeated use, bad experiences might make individuals more cautious towards e-commerce in general. Finally there is personality related trust. Kim et al. (2008) explains that different individuals have different propensity to trust and simultaneously different shopping behaviours.

Chuan-Chuan Lin and Lu (2000) studied intentions to use a website and noted that IS Quality (consisting of information quality, response time, and system accessibility) had positive effects on both perceived usefulness and perceived ease of use.

In a cross-cultural study in Brazil, Germany and Taiwan, Singh et al. (2004) found an important aspect in website design, extending the TAM with Cultural adaptation. Their study showed that simply translating a website is not enough in order to gain cultural acceptance. Companies have to gain deeper understanding of the culture and incorporate it in the website design, e.g. formats of times and dates, symbols and icons, colours and overall aesthetics were found to have a positive relationship to both perceived ease of use and attitude towards adaption. (Singh et al. 2004)
While the internet and IT overall has arguably increased both individual and organizational performance, it has also created a new platform for crime, e.g. viruses, spyware, adware, spam and Trojan horses that can lead to devastating losses of information and even money (Liang and Xue 2009). Thus the role of Security has been increasingly important when talking about adoption of e.g. a new website. While Kim et. al. (2008) incorporates security perceptions as a part of the cognitive trust, others such as Dahlberg et. al. (2003) have studied it as an own determinant.

2.9. Summary

The literature review has discussed different elements of both SaaS and how technology acceptance is traditionally viewed. Noting the two streams in technology acceptance, the focus was shifted towards the TAM since the aim is to find characteristics from a consumer point of view. Afterwards a brief discussion was presented about the Theory of Reasoned Action, which works as the foundation of the Technology Acceptance Model. Next the TAM was discussed deeper in detail including evolution of the model and criticisms and limitations towards it. Next other acceptance models were briefly presented, including the PAD, MATH and TRI. Finally the acceptance literature was viewed from a consumer perspective and an internet perspective, highlighting some distinctions in the contexts.

As noted, technology acceptance is a complex phenomenon with a variety of thoughts across different contexts and groups. Understanding the distinctions of the context that is studied, is of particular significance as there are many alternative thoughts in technology acceptance. As the aim of this study is to examine acceptance in a consumer SaaS environment, some aspects should be drawn together in order to gain broader understanding in the context specific issues.

SaaS can be distinguished as a service in an online environment (Benlian et al. 2012). Thus characteristics in acceptance of SaaS in consumer context should have some coherence with both end consumer acceptance, as discussed in chapter 2.7, and online acceptance, discussed in chapter 2.8.

As also noted, when talking about online contexts there are some critical issues that should be regarded. First of all the online context that also characterizes SaaS, deals often in transaction processes, which should impact the acceptance process in aspects of trust and security as noted by e.g. Kim et. al. 2008; Gefen et. al. 2003; Liang and
Xue 2009; Dahlberg et. al. 2003. While consumers can seldom physically interact with
the service provider, they have to trust the provider to act as promised in their service
offering.

Secondly as the SaaS environment is characterized by either subscriptions or pay-as-
use revenue models, especially in a consumer contexts where there are low switching
costs and seldom any forced reasons to use the specific service (except e.g. social
pressure and the feeling of being left out), it is important to notice the price / value
concept, suggested by Venkatesh et. al. (2012).

Looking back at the SaaSQUAL, the aim has been to identify what makes a good quality
SaaS (Benlian et. al. 2012; Du et. al, 2013). This has therefore taken a strict company
perspective on the acceptance process. Other scholars argue for understanding
acceptance from an individual perspective, where personality factors and skills affect
the acceptance on an individual level (Venkatesh 2000).

Figure 6 summarizes both the Theory of reasoned action and the Technology
Acceptance model, which are presented in the respective dotted boxes. Furthermore the
potential context specific aspects are presented, which the interview guide is thereafter
built on. The box labelled “focus part” presents the focus of this study.

The potential context specific aspects are still loosely connected to the model since the
possible relationships between these are not defined yet. As several authors have noted
by modifying the original TAM, there might be reason for caution when taking the TAM
into new settings (Lee et. al. 2003). Many of the context specific aspects, also
mentioned earlier, might have a more direct role in the acceptance process than only
working through perceived usefulness and ease of use (external variables).
Hopefully the empiric part will shed light on these relationships, while possibly adding or subtracting new aspects. This is also the reason why external variables have been discarded from the focus part, since it is not sure if these aspects are dependent on usefulness and ease of use or act as separate determinants.

As the actual usage of SaaS cannot and will not be tested in this study, the model focuses on the premise that attitude towards a specific technology is directly related to the intention to use and resembles further actual usage as theorized in the original TAM (Davis et. al. 1989). Thus any possible shaping activities before actual usage as suggested by Bagozzi (2007) are not considered.

Next the methods part of the thesis is presented including discussions on sampling and data analysis. Following the methods part results are presented following by empirical results, an analysis and a discussion.
3 METHODS SECTION

In this chapter the methodical part of the thesis is presented and discussed. Subchapter 3.1 discusses the thesis methodology and explains the chosen research design. Subchapter 3.2 discusses implications in case study research while subchapter 3.3 focuses on the sampling strategy and the reasons behind the chosen respondents. In subchapter 3.4 the data collection is described, including a presentation of the interview guide and discussions about both observations and the interviews. Finally subchapter 3.5 will discuss how the analysis has been done before discussing about the quality aspects of the study in subchapter 3.6.

3.1. Thesis methodology

This thesis aims to explore the underlying reasons for consumer acceptance of SaaS. In order to answer this aim, a qualitative approach is used as this would give the best possibilities for deeper discussions about topics in the field. While a quantitative research could have been conducted, getting preliminary data through interviews should give more information about the specific context related factors which can later be studied in a quantitative setting.

When designing a research, there are different aspects to consider. Saunders, Lewis and Thornhill (2012:128) presents the “research onion”, highlighting different layers of the process including; philosophy, approach, methodological approach, strategy, time horizon and techniques. Yin (2014:28) describes the research design to be a “logical plan” or a path to get from here to there. Designing a research starts with the initial sets of questions and ends with answers to those questions. The path leading to the end is then built through i.a. data collection and analysis of the data (Yin 2014:28-29).

Research can be divided into three main natures or purposes; exploratory, descriptive and explanatory. Exploratory research involves gaining deeper knowledge of a problem. Usually when there is little to none information in a specific subject, exploratory research helps understanding a big picture that is later narrowed down more specifically. Descriptive research on the other hand focuses on accurately describing a phenomenon. Saunders et. al. (2012:171) argues though that descriptive research should be seen as a “means to an end rather than an end in itself” (Saunders et. al. 2012:171). The third purpose of research is explanatory, which is used to explain
relationships between different variables. Choosing which type of research one will carry on depends largely on how the research question is formulated. Research can involve either a single purpose or different combinations of the three. (Saunders et al. 2012:170-172)

As this study aims to explore consumer acceptance in SaaS environments, which is quite a new subject, the main nature of the study is explorative. Saunders et. al. (2012:170) notes that while the purpose can be explorative, the results will be most likely descriptive or explanatory or a combination of them.

After understanding the purpose of the research, there are two primary approaches that can be used; deductive and inductive. Deductive research works on the premise of building a theoretical framework that the research is then based on. Inductive research on the other hand focuses first on data collection and builds the theory on the findings. (Saunders et. al. 2012:143-149)

This research utilizes primarily a deductive approach, i.e. the theoretical framework was built first and the data collection afterwards based on the theory. Though as the aim of the research is to explore underlying reasons and characteristics, there might be cause for revising parts of the theory as the data collection process begins. As explained by Saunders et. al. (2012:145-149) sometimes researchers have to jump back and forth between the theory and the empiric part as the research unfolds and thus the border between a deductive and inductive approach can be fuzzy.

The qualitative data can be divided into four categories; interviews, observations, documents and visual material (Patton 2002:4; Silverman 2011:42). In this thesis the data collection consists of both interviews and observations. By combining words with actual behaviour, might shed light on how the respondents actually see a specific subject. The data collection will be further discussed in chapter 3.4.

In order to get an in-depth knowledge about the subject that is to be researched, an extensive literature review was conducted. By first finding the primary source of the TAM model, it was easy to start advancing in further research by using meta-analysis searches and cross-references. Further a software called Publish or Perish was used in order to find highly cited literature by using matching key-words. This helped to map the research space and to find additional literature.
3.2. Case Study

“The case study is a research strategy which focuses on understanding the dynamics present within single settings.” (Eisenhardt 1989:534). Robert Stake (2000:437-438 referred in Silverman 2010:139) presents three types of case studies; intrinsic, instrumental and collective. Stake furthermore explains that intrinsic case studies are based on one interesting case without trying to make generalizations on a topic. Instrumental case studies on the other hand study a case thoroughly, but focus mainly something else. Finally a collective case study is one where a phenomenon is studied in depth through several cases. (Silverman 2010:139) Even though this study focuses on a single case company, the main focus is to shed light on acceptance in SaaS, thus making it an instrumental case study.

Case studies furthermore can be either single case or multi case settings in different levels of analysis. Eisenhardt (1989) further notes than when selecting case studies, theoretical sampling is usually used rather than statistical sampling. Case studies are usually chosen to fulfil a gap in theory or to provide rich and transparent information, thus random sampling is deemed unnecessary (Eisenhardt 1989).

Case selecting is crucial in case studies as the cases defines the population from which the samples can be drawn. Understanding the population helps in understanding the limits of the generalizability of the study. (Eisenhardt 1989)

In this study the Case Company was initially introduced to the author upon a discussion about interests of study field. After discussing the area of research with the company representatives, the service the company was launching was deemed as a good fit to the aims of the study. Thus the Case Company was chosen based on the theoretical fit rather than the theory being chosen based on the company’s needs.

Yin (2014:31-33) discusses the importance of understanding the different units of analysis, what really is the “case” that is studied. He further explains that the study should be guided through propositions that lead to the right unit of analysis (Yin 2014:31). Even though the study focuses on a single web based service, the unit of analysis is consumers. In other words the focus is on the consumers and their reasoning around technology acceptance using Palkkaus.fi as a way to focus the wide field of technology into a feasible research area and thus help in both getting somewhat
unified views on the area of research from the respondents and increase the quality of the study.

3.3. Sampling

One of the key elements of doing a research is the sampling strategy. While there are numerous techniques in drawing a sample, there are three main things to consider; access, resources and purposefulness (Gummesson 2000; Silverman 2011; Saunders et. al. 2012).

Some types of research may rely heavily on gaining appropriate access e.g. studying specific populations or specific locations. Gummesson (2000) divides access into three types; monetary, organizational access and access within an organization. Secondy understanding available resources (mainly time and money) and how they affect the sampling process. As there seldom is unlimited time and money available, usually some compromises have to be made.

A final important aspect to consider is its purposefulness (Patton 2002:230). When considering qualitative research, random sampling is not as important as choosing cases rich in information. Furthermore there are many different ways to purposefully select a sample. Depending on the aim of the study and what the researcher wants to say, different methods of sampling can be carried out. (Patton 2002:230-232)

As this study aims to understand consumer technology acceptance in SaaS environments, a heterogeneity sampling strategy has been used. Heterogeneity, or maximum variation, sampling is used to understand a phenomenon broadly across variation. While heterogeneity sampling might cause problems due to the cases being different from each other, any shared patterns that are found from the data will be particularly interesting in explaining the phenomenon. (Patton 2002:234-235)

This sampling strategy has been chosen as there is a very limited amount research in the studied context. Thus gaining information across the context can provide the needed baselines for future research. Furthermore as there is no established norm for consumers using SaaS it is hard to define any typical case.

Maximum variation in this study is achieved by first recognizing traits in the phenomenon. As the case study focuses on a wage payment solution, the first aspect to recognize is information across professionalism, i.e. interviewing both financial
management professionals and non-professionals. Secondly the aspect of having paid wages earlier or not gives information about how the service solution compares to previous ways of completing wage payments and should also give thoughts on how useful the service is deemed.

Thirdly as the phenomenon is technical, having respondents that are deemed “tech-pro” and “tech-neg” should give deeper understanding across technical aspects. Finally variation across age and gender is used to minimize any gender or age specific dimensions. As mentioned earlier (chapter 1.4) one delimitation that has been used is to restrict the age range from 20-65.

Respondents are chosen to fulfil all the different aspects described earlier. Table 3.1 summarizes the respondent’s age, gender, time and place of interview and sampling technique. Furthermore a second table (3.2) is made to summarize which of the aspects described above the specific respondent fulfils. The traits recognized also allow a single respondent to “tick” more than one trait, gaining more information about the phenomenon.

The Pilot Respondents were chosen due to the knowledge of them being on opposite sides of using technology. While Pilot Respondent 2 is known to try out new technology, Pilot Respondent 1 seldom tries out anything new and thus interviewing both gave knowledge about how the interview guide works across user groups.

*Table 1: Information on respondents*

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Age</th>
<th>M/F</th>
<th>Time</th>
<th>Place</th>
<th>Sampling Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Respondent 1</td>
<td>57</td>
<td>F</td>
<td>18.06.2014</td>
<td>Vantaa</td>
<td>Heterogeneity</td>
</tr>
<tr>
<td>Pilot Respondent 2</td>
<td>56</td>
<td>M</td>
<td>18.06.2014</td>
<td>Vantaa</td>
<td>Heterogeneity</td>
</tr>
<tr>
<td>Respondent 1</td>
<td>57</td>
<td>M</td>
<td>23.07.2014</td>
<td>Mikkeli</td>
<td>Heterogeneity</td>
</tr>
<tr>
<td>Respondent 2</td>
<td>28</td>
<td>F</td>
<td>26.08.2014</td>
<td>Espoo</td>
<td>Heterogeneity</td>
</tr>
<tr>
<td>Respondent 3</td>
<td>32</td>
<td>M</td>
<td>08.09.2014</td>
<td>Espoo</td>
<td>Heterogeneity</td>
</tr>
<tr>
<td>Respondent 4</td>
<td>50</td>
<td>F</td>
<td>15.09.2014</td>
<td>Espoo</td>
<td>Heterogeneity</td>
</tr>
</tbody>
</table>
Table 2: Matrix of respondents’ traits

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Professional</th>
<th>Non-professional</th>
<th>Paid earlier</th>
<th>Not paid earlier</th>
<th>Tech pro</th>
<th>Tech Neg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot R1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Pilot R2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>R1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>R3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>R4</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

3.4. Data collection

The primary data collection was conducted through semi-structured interviews, based on an interview guide and observations made during completion of a given task highlighting the Palkkaus.fi service. Chapter 3.4.1. presents the interview guide, the reasoning behind the questions and the adjustments made during the process of creating the interview guide. Chapter 3.4.2. will further discuss the interview process, while chapter 3.4.3. will discuss the observations.

3.4.1. Interview guide

When considering qualitative approaches, interviews are the most common form of data collection. While observations may give insights to behaviour, asking about topics gives the researcher a deeper understanding in why respondents behave in a certain way. Patton (2002:340-341) explains further that by interviewing, the researcher can gain insights into previous experiences, feelings, thoughts, intentions and things that happen behind closed doors. In other words, to get information from the respondents perspective rather than our own. (Patton 2002:339-348)
When planning an interview guide, researchers might be worried about what to ask. As there usually is a limited time that can be used, the interview process has to be focused and having a well prepared interview guide helps with this. (Patton 2002:241-250)

Patton (2002) furthermore suggests using pilot interviews to make sure that all topics will be covered and that there are no other problems with the proposed questions. In this thesis two pilot interviews were conducted in order to test the created preliminary interview guide. These interviews revealed some limitations that were then adopted into the final interview guide (Appendix 1).

The pilot respondents had some problems to relate specifically to technology on the internet and talked mostly about products. This might be because of the mind-set that technology is deemed as new products. This was not a big problem since it could be addressed by guiding the respondents back on track, i.e. internet based technology. But to keep the future interviews easier focused on the right things, there was made a change in the order of the questions to address this issue.

Furthermore when discussing the interview guide with the pilot respondents after the interviews, there was a suggestion of changing the preliminary proposed demonstration part of the interview into a task that the respondent should complete. In this way respondents get a better sense of the process in using the service and can be observed better.

Finally at a later discussion, some ethical issues were raised and question number 7 was changed from “have you ever paid undeclared?” to “could you imagine paying undeclared?”. This change was done due to two reasons. First of all as paying undeclared is illegal, asking about history of committing a crime might consciously and unconsciously affect the answer and put the respondent in an awkward situation, which can affect the rest of the interview (Koskinen, Alasuutari & Peltonen 2005:278). Secondly revealing possible criminal activities might in worst case lead to problems with the authorities for both the respondents and the author.

The interview guide (Appendix 1) was finally divided into three parts; before, the task and after. The idea with the first part is to gain understanding in different assumed context specific issues reviewed in the literature review. The respondents were asked about services they use on the internet, which were then discussed further to gain knowledge on how these assumed context specific issues relate to technology
acceptance. The term SaaS was not mentioned to the respondents but as they mentioned different services they use, the researcher chose to discuss those which could be categorized as SaaS.

The second part of the interview consists of a given task, which is designed to be simple but still mirror the whole process. The task is built to highlight different aspects of the service and to use the different options built into it. This way the respondent gets a more realistic picture of the usage rather than only briefly looking at it.

The last part of the interview will then ask questions about the service they just tried in order to further gain understanding in factors that affect technology acceptance. This will partially give extra validation to the answers given in the first part and might also provide more insights into the acceptance process. In this part there were also added questions about recommending to a friend and price. In order to see how the respondents actually accept the service they tried, they were asked if they would recommend it to a friend since asking directly if they would use it could result in biased answers due to what they think the researchers want to hear. The premise here is that to recommend it to a friend would mean initial acceptance in the user itself.

As the service is intended for end-consumers with the free choice of using the service, getting information about the pricing can be crucial in understanding the acceptance process. This will also be beneficial for the case company in deciding and refining the pricing policies. Finally the interview will be concluded by asking if anything of importance has been forgotten that the respondent would like to discuss about.

Even though the interview guide works as a base for remembering to ask questions related to the different themes, it does not exclude talking about different topics. As a heterogeneity sampling was used, respondents had very different backgrounds, which could be seen in where the focus of the interviews was. While those who had more expertise in financial management started to discuss deeper the wage payment issues and how Palkkaus.fi related to those, other with a more technical background talked more about technical aspects and design features of the service.

3.4.2. Interviews

The interviewing process determines largely the outcomes of the interviews. Silverman (2011:164-166) discusses how the interview is dependent on both parties and to gain
the most information the interviewer has to maintain an active role throughout the interview.

Before starting the interview, there was in each case some small talk about how has one’s day been, and a briefly talk about what the subject of the research is. This was done primarily to make the respondents more comfortable and also to build rapport between the respondent and the interviewer.

The respondents were also asked beforehand if it was okay to record the interview in order to have the raw data available later. The recordings were done on a Lumia 920 mobile phone, using One Note recording. Before starting the interview a small test was done so that the voices could be heard and the phone was then left on the table, as close to centre as possible. While using a mobile phone to record, there might be less distractions from the respondent as they will probably treat it as a daily object and forget about its existence, opposite to a traditional recorder which is an item they might not be that used to and hence shift their focus on it instead.

Furthermore as the interview consisted partially of a task that the respondents were asked to complete, an iPad or a laptop was used. Before interviewing, the service (Palkkaus.fi) was tested on both operating systems (Windows 7 and iOS) in order to verify that the service is fully cross compatible and no problems would arise from using either an iPad of a laptop.

Respondents tended to discuss deeper in subject that were more related to their speciality and were less open to discussing about themes that did not concern their expertise. Analysing the transcriptions made of the interviews, showed that there was quite a good deal of probing by asking follow up questions naturally relating to the themes when the focus was on topics that were of higher interest to the respondents. On the other hand, on topics that were somewhat outside the respondents comfort zone, the probing was less effective in gaining deeper insights.

As the interview guide faced only minor changes after the pilot interviews, the data collected from the pilot interviews were included into the actual results. After each subsequent interview, some initial analysis of the data was made. Thoughts and key concepts that the respondents mentioned were discussed with the following interviews to see how they felt about the subjects.
After six interviews, patterns found in the data started to saturate, i.e. no information that was deemed of significant importance was found and thus the sample size was deemed enough. The mix of respondents was also seen adequate since all of the preliminary “boxes” were ticked by one or more respondents.

After recording the interviews, the next step was to transcribe them. To keep memories as and notes as fresh as possible when transcribing, the transcribing was tried to be done if not the same day, then the next. In some one cases this was unfortunately not possible due to other arrangements, but the longest time between the actual interview and transcription was successfully kept to three days.

3.4.3. Observations

Along with interviews, observations are one of the key forms of data collection (Belk and Kozinets 2005). Observing a phenomena gives the opportunity to see the world from the eyes of the informants. Observations can be categorized into two groups; naturally occurring and non-naturalistic (Arnould and Wallendorf 1994). Naturally occurring observations focus on real time behaviour in a real-world setting while non-naturalistic is the direct opposite (Arnould and Wallendorf 1994).

When collecting data from observations, there are different options depending on the technique used. Roughly these can be divided into mechanical and non-mechanical. In mechanical data collections, the researcher has somehow recorded the observation. This might be through e.g. video or photographs. (Belk, Sherry and Wallendorf 1988; Belk and Kozinets 2005)

However technology has enabled to observe behaviour also through more novel techniques e.g. GPS, RFID (movement) and screen recording (e.g. online shopping). How consumers move in stores or how they browse webpages are important issues in today's consumer behaviour. Non-mechanical observations on the other hand rely on extensive field notes about what has happened in order to explain the phenomenon (Arnould and Wallendorf 1994). These two data collection options do not exclude one another but rather complement each other.

Observers can adopt different roles when observing. Both Silverman (2011:113-119) and Saunders et. al. (2012:342-345) distinguishes two types; participant and non-participant observations. In the participant observation, the researcher is a part of the
phenomenon and is thus acknowledged to gain more information. Researchers talk about gaining access throughout the research process and the same problem can arise during observations (Gummesson 2000; Saunders, Lewis and Thornhill 2012).

In this thesis the observations were made during the second part of the interview. While the respondents were completing the task that was given to them, observations on reactions and specific problem areas were made. These were then written as comments to later remember which specific points of the task they had possible problems with.

Notable is that some of the interviews were conducted before the service was officially online and thus these respondents might have had a bit different experience than the ones that were interviewed after the launch. To manage this, the possible problems that might have occurred due to technical problems due to the beta phase of the service have not been incorporated into the data.

3.5. Analysis

After collecting the data, the next step is to analyse the data. Spiggle (1994) explains that the word analysis derives from the Greek word *analyein*, which literally means to break up. Analysis is thus to break up the collected data into smaller parts and then recombining it after manipulating it. When approaching the collected data systematically, researchers can combine the available data into a view of reality. (Spiggle 1994)

Spiggle (1994) presents seven operations (categorization, abstraction, comparison, dimensionalization, integration, iteration, refutation) that help to systematically go through the data. She further emphasizes that these are not in any specific order but depending on the process.

In order to analyse the characteristics of acceptance in SaaS environments, the data was first divided into overall perceptions and perceptions on Palkkau.fi. This was done in order to easier compare and summarize characteristics from overall thought on SaaS services and thoughts on Palkkau.fi service. The data was then divided into six basic parts (Ease of Use, Usefulness, Trust & Security, Personality, Hedonic, and Social) that were assumed important from the TAM literature. An additional part called “other
things” was also added to incorporate things that did not fit in any of the six basic aspects. All these 13 parts were then color-coded in order to organize the data. The interviews were then gone through thoroughly, highlighting different parts with the respective colour.

After this the focus shifted into the specific parts, trying to find similarities across both part 1 and 3 from the interview guide and respondents. Since the sampling strategy involved gaining a broad view of the phenomena, differences were not focused on until later. When all the preliminary context specific parts were gone through, some personal traits that had emerged from the data were studied and revealed a moderating aspect to some parts. Finally the relationships between the different categories were studied in order to understand the dynamics behind the presented model.

### 3.6. Quality of the research

In the academic community, researchers are taught to have a critical view on the works they both write and read. Not taking information for granted, one has to address both validity and reliability aspects (Silverman 2011:19-21). Thus the main purposes of defining research quality is that it discusses if a study can be replicated, would the results be identical and do the results portray the real world.

Validity can further be divided into both internal and external validity. While internal validity involves usually quantitative studies and discusses the causal relationships between variables, external validity focuses on generalizability and handling of situation specific contexts. (Saunders et. al. 2012:193-194)

Saunders et. al. (2012:193) points out that in exploratory research, such as this one, internal validity cannot be applied. External validity however has been addressed through keeping the formulated constructs on a theoretical level and addressing the situation specific issues. Furthermore Silverman (2011:369) notes triangulation as a way to improve validity. In this study both interviews and observations were done and as noted some answers have been taken lighter since the respondents actions have explained possible reasons for the opinion.

Reliability as a construct aims to find if another researcher can arrive in the same conclusions with a replicated study (Silverman 2011:360). As with any research, a big part of the actual study and results are affected on the interpretation of the researcher.
In order to minimize this discrepancy, the analysis has been conducted according to the guidelines that previous research suggests (chapter 3.5) and the methodology has been presented as transparent as possible. By systematically going through and having a critical view on the collected data, any subjective opinions from the data material should be kept to a minimum. Further, keeping the research as transparent as possible the results chapter includes numerous longer citations, which also helps the reader in ensuring the data supports the reported phenomenon.
4 RESULTS

Next the collected data will be presented. The main aim for this thesis is to explore the underlying reasons for consumer acceptance of SaaS. The aim is specified further into the following research question.

- What characterizes consumer technology acceptance in SaaS environments?

4.1 Characteristics in acceptance in SaaS environments

The research question aims to find characteristics in acceptance in SaaS environments. This is achieved by finding aspects from both the data and observations, which are brought from various studies of technology acceptance research.

Looking at the original TAM, where the attitude towards using is directly stipulated by perceived ease of use and perceived usefulness, which are then again stipulated by external factors depending on the situation and context. This thesis aims to shed light on how SaaS is accepted by consumers. While all of the aspects found in the original model were also found in the data set, there is some room for consideration due to the nature of SaaS environments.

As noted in the literature review both consumer contexts and SaaS contexts have to be distinguished from traditional technology acceptance theory which usually focuses on workplace or B2B contexts. Next an extensive presentation of the characteristics found in consumer context in the data will be presented. Chapter 5 will then analyse and discuss the results by incorporating them into a model.

4.1.1 Ease of Use

When considering traditional products or services, yet alone services provided through the internet, perceived ease of use is a key feature in how the consumer will accept this and continue using it. If software is hard and laborious to use, it might take considerably more effort in producing the benefits that the software is intended to. In worst cases it might even cause users to not be able to produce results at all or to neglect the software and find another alternative. Research has proven time and time
again that perceived ease of use has a large impact on how users accept new technology (e.g. Davis 1989; Venkatesh 2000; Lee et. al. 2003).

This was the case here as well, respondents were first asked to name SaaS that they used online and then focus on what made them good and why they in fact used the SaaS. The services mentioned can be categorized into: social media, entertainment, utility, and information storage.

After the respondents had mentioned some SaaS they use, they were asked to think about what made a specific SaaS good or why they used it. Two main aspects rose directly, they are easy to use and they fulfil a purpose (usefulness).

As "easy to use" is quite a vague expression in the sense that it does not really explain itself, the respondents were asked in follow up questions to expand the expression and explain what made the SaaS “easy to use”. It was interesting to see how level of expertise in computer skills affected the way they answered. The respondent with the most technical expertise started to talk about design aspects in the user interface.

“Hyvin suunniteltu käyttöliittymä, ei siin, sehän on se mikä sen tekee, tietenkin toimivuus ja toiminnallisuus et se on helppokäyttöinen ja toimiva” (R3, 08.09.2014)

"Hyvä käyttöliittymä? Hyvä käyttöliittymä on semmonen joka siis, josta näät suoraan jos sä haluat tehdä jotain. Sun ei tarvi kauheesti mieltää et miten sä nyt teet sen vaan sul on se suoraan siin käyttöliittymäs..” (R3, 08.09.2014)

Other respondents talked about discretion, logic, available instructions and sign in processes.

“Helppokäyttöinen on se että sinne on helpot salasanat, ettei mitään jumalatonta kirjautumista” (R4, 15.09.2014)

"et se on niinkuin loogisesti pilkottu se tavaratarjonta tai palveluiden tarjonta siel, et täs on nää niinkuin pääryhmät, ja sit se jakautuu näihin ja näihin, tai että pystyy hakusanalla hakemaan ja se esittää listan niistä toiminnoista. (R1, 23.07.2014)

“no ei oikeestaan jos se on selkee, on paljon semmosii ohjelmia jossa on niinku miljoona vaihtoehto, jossa tulee niinku tämmösii juttuja et sä et oikeesti tiedä et mikä on oikee vaihtoehto..” (PR2, 18.06.2014)
Both the logic aspect and the user interface design portray the same thing but in different levels of abstraction. Available instructions on the other hand are related to the computer self-efficiency aspect that previous researchers have noted. Those who deem themselves less skillful in using computers overall value instructions, while those who feel more secure about their computer capabilities might feel that they can learn without instructions.

_Palkkaus.fi_

After giving the respondents the task of paying a declared wage using the Palkkaus.fi service, they were asked some follow up questions on how they perceive it. Respondents were almost unanimous in that the service was perceived easy to use. When discussing further what in fact made the service easy to use, the same aspects came up as when discussing services they used before, namely logic and instructions.

"On se sinällään et jos on tälläsi et tietää et noit ei joudu ajattelemaan, et vaiheittain etenee ja kysy ne mitä sä tarvii...eikä sillee et ois hirvee lomake johon pitäs täyttää kaikki maailman valinnat ja sun pitäs syöttää tänne tota ja tonne tää, et kyllän tää aika pitkälle ohjaa eteenpäin" (R3, 08.09.2014)

"No se on selkee, siin lukee ihan että mitä seuraavaksi et siin oli vähän avattu niit että tota tähän kohta an olemme huomioineet tämän ja tämän ja jos tarvitsee muuttaa niin paina tästä et tosi sillee niinku mm.. avattu maallikolle että mitä nyt seuraavaksi että pääset eteenpäin ja nämä vielä pitää huomioida ja tientenkin toi et se on suomeks ja ne niiku etenee logisesti järjestyksessä ne mitä se kysyy siinä ja tota" (R2, 26.08.2014)

"No ei tosta paljon helpomaks voi mennä [...] mennääan asteittain 1,2,3,4, ja maksaa" (PR2, 18.06.2014)

Looking at the field notes from observations done as the respondents were completing the task, the respondents seemed to have little to no problems in completing it. However some respondents seemed to have some difficulties in finding where to begin the calculation of the wage payment.

Respondent 3 commented "ihan jos lähtee tosta alusta niin en heti löytänyt tota kohta että lähe tästä maksaa palkkaa, se oli jotenkin huomaamattomasti tossanoin" (R3 08.09.2014). Respondent 4 on the other hand had some problems with the user interface while using a tablet,
Looking back at the field notes, the problems respondent 4 had might not be entirely because of the user interface, as there were some miss presses and the internet connection was a bit slow which lead to the system not proceeding to the next step.

Along with the problems finding where to begin the wage payment itself, there were two small problems that respondents had during the task. Figure 7 and 8 represents the points in the service that were found problematic.

2. SIVUKULUT

The first problem some of the respondents faced were at the stage of calculating the social security costs (figure 7). The service makes assumptions that reflect on the wage that is calculated in the previous stage. From here the user can edit the assumptions if needed or just continue. Respondents 1, 3 and 4 had some problems in understanding the assumptions. Respondent 3 commented

"tos oli vähän hämmentävää sit toi, mä en kans heti tästä tullu selvää et mitä mä oon varsinaisesti valinnu tässä näin et tää on jotenkin tota [...] Joo sitä ei jotenkin niinku ajattele niitä oletuksiksi, mä en tiää mikä siinä on, ne on valittu valmiiks niinku tollalailla, tai kun se heittää sen toohon [...] mutta mä luulen et se on ihan puhtaasti periaatteessa jotenkin tää väritys ja muu jotka olis, ne on melkeen ainoot ja miten nää on koottu tohon. Et sinällään nehan on ihan selkeesti koottu tohon. Sitä ei vaan jotenkin hahmottanut en mä oon nyt varsinaisesti valinnut näämä" (R3, 08.09.2014)
Some of the problems might have been raised because of technical issues e.g. miss presses, but as respondent 3 notes having the assumptions done beforehand can cause problems for some users.

The second problem that was discovered during the task the respondents were asked to complete was adding the material costs of 250€. First of all finding where to input the material costs was a partial problem, some respondents started to look at “katso lisää vaihtoehtoja” and try to find material costs as a separate function. Others, after figuring out where to input the material costs, misunderstood the “määrä” (amount) as a representation of the price, leaving the actual price empty and thus summing the price to 0€. Some respondents (R4) noted this and made appropriate changes, but some missed it completely and thus would have forgotten to pay the material costs to the employee.

Overall, as wage payment is a highly regulated and can in worst cases cause big troubles for both the employer and employee if done incorrectly, it is important to ensure that the users can easily find and understand what they need to include in the wage payment. Respondents also noted throughout the interview the importance of ease of use, both when discussing the SaaS services they use and when using Palkkaus.fi service.
4.1.2. Usefulness

The second important point of a product, software or service is its usefulness. While some might be bought and consumed purely because of enjoyment or force (especially in work contexts), most are consumed because of a need. Thus gaining understanding on the usefulness of the service is crucial in developing the service offering further.

When discussing usefulness, there were a few aspects that came up. Firstly the respondents were asked about initial thoughts when considering a new service. One of the first things that most of the respondent commented on was the need for the service.

“No varmaan se tarve on ekana siinä et johonkinhan mä tarvitsen sitä uutta palvelua” (R2, 26.08.2014)

"No tottakai varmaan sillä perusteella et siit on jotain hyötyä mulle” (R3, 08.09.2014)

The need of a service relates directly with the usefulness of the service in the sense that to be considered useful a service has to fulfill a need. The usefulness of a service might not be that evident to all users straightaway, but the abilities of the service have to be introduced to them by e.g. word of mouth or media to catch a large enough of interest.

“Kyllä ja sitten totanoin kaikki asiakkaat eivät yksinkertaisesti näe sitä hyötyä siinä” (R1, 23.07.2014)

"tai se tuo mulle jotain lisää mitä mä en oo aikasemmin tarvinnu vältämättä” (R3, 08.09.2014)

" jos miettii vapaa-ajan erilaisia juttuja niin ei vältämättä kaikki niistä lähde heti alkuun kiinnostaa” (R2, 26.08.2014)

Palkkaus.fi

To shed light on the usefulness of the service, the respondents were first asked how they perceive wage payment. The idea behind it was to gain a point of comparison to which relate the answers of the follow up questions relating to the actual service. The sampling strategy included both those who had experience with wage payments and those who had not.

The respondents without prior experience in wage payments were unanimous in the fact that paying declared is perceived highly bureaucratic and complicated.
"Ei oo tosiaan kokemusta et en virheen tarkasti kyllä mut mä tiedän et se on aika byrokaattista [...] se on niin vaikeeks tehty että pitää eri paikkoihin tilittää sitä sun tätä ja kaikenmaailman verot ja eläkkeet ja muut et ei sitä helpoks oo tehty kotitalouksille” (R2, 26.08.2014)

"Jos mun pitäs lähtee oikeesti maksaa jollekkin laillisesti palkkaa niin en mä kyllä osais sitä tehdä ilman et mä viettäisin muutaman tunnin tuolla verohallinnon sivulla ja katsoisin eri pykälät läpi” (R3, 08.09.2014)

"Tänäpäivänä jos yksityinen henkilö palkkaa jonkun ihmisen tekemään jonkun duunin ja haluu tehdä sen virallisesti niin siinähän on ihan älytön lakiviidakko et mitä Tellei, Lellei, Lyllei yms mitä siin joutuu tekemään” (PR2, 18.06.2014)

On the other hand the respondents with previous experience of wage payment did not seem to perceive wage payment that difficult. However respondent 4 also admitted that she has had to help friends in understanding how to pay declared.

“Kyllähän siin tarvii nää vakuutuksut otta niille rakennusmiehille ja hoitaa ennakonpidätykset ja sotut niin kuin missä tahansa yrityksessä, että eihän se tota niin ihmeellistä on, eli tälleenhän se menee” (R1, 23.07.2014)

"On, siis mä oon maksanu omaa palkkaa töissä niin samal taval kun yksityishenkilö maksaa. Ainoo mikä nyt on vaikeeta on se jos maksaa niitä remonttijuttui” (R4, 15.09.2014)

Asking further about the first time the respondents paid wages declared and how easy or hard the “how to” information was to find, respondent 4 acknowledged that it was not a piece of cake.

“Joo [answering if it was hard to find the information], mut kyl sen löys. Kyl siin joutu niinku kaivaa kaikkee ja sittenhän verottaja kyl kysyy, sit ku tarpeeks tupeksii niin sielt tulee kyl peräs..” (R4, 15.09.2014)

Respondent 1 on the other hand recalls that it was not that hard but admitted it was some time ago before the online procedures.

"No silloin on ollut, tuota edelliskerralla kun tuollaist rakennushommaa oli niin siit on niin paljon aikaa et elettiin enempi tässä paperimaailmassa
After being introduced to the Palkkaus.fi service the respondents were asked about various aspects of the service that would give hints of the usefulness of the service.

“Toi on siis ideana ihan loistava, myös tämmöselle niinku satunnaiselle työnvoimankäyttäjälle” (PR2, 18.06.2014)

The service was not only perceived useful from a consumer’s perspective but also from the governments perspective aiding declared work in a larger scale.

“No kyl tää varmaan edesauttais sitä et jatkossa maksais helpommin” (PR1, 18.06.2014)

Respondent 1 commented that service providers should clearly explain the benefits and highlight the added value that the service gives:

“Mä en tiää oliko siinä jotain johdantoo tai esipuhetta olemassa mutta totaniin mutta mielestäni se tulisi niinkun hyvin huolitellulla tai sellaisella selkokieellä kertoa että tämä ohjelma hoitaa puolestasi kaikki työnantajan velvoitteet, syötä tiedot ohjelman antavalla ohjeiden mukaan ja maksut hoituu sitä kautta. (R1, 23.07.2014)

Overall respondents felt that first time wage payment is hard and that the Palkkaus.fi service helps the occasional employer to pay declared. Respondents were unanimous that the service makes the process easier and thus considered it useful.

4.1.3. Trust & Security

When asking the respondents about service providers’ trustworthiness and how it affects usage of services on the internet, there was a similar division on the level of abstraction depending on the technical background and preferences of the respondent. When asking respondents how the awareness of the service provider affect them as users, some felt that it does not make any difference as long as the service itself was useful.
However most felt exactly the opposite, highlighting that known brands and service providers affect the trustworthiness of the service. Pilot Respondent 1 also commented that the barrier to try a service might be lower if it is a known service provider.

When discussing trustworthiness further with the respondents and asking about aspects that contribute to the trustworthiness of the service provider, social aspects rose from the data. From a social point of view having references and endorsements from the media, relevant sources and positive word of mouth were brought up by different respondents.

Online services to some seem to have a greater reflection on trustworthiness, compared to products. Services seem to gain more personal identities than products, meaning that there is a higher need of trust and security. Respondent 2 commented on the differences of products and services related to trust and security.
A functional aspect of the service that affected the trustworthiness of the service related to personal information that was asked. If e.g. a registration form asks too much personal questions that are not relevant to the context, this has a negative effect on the perceived trustworthiness.

“Jos sinne pitää antaa paljon omii tietoi niin varmaan miettii palvelussa et sen pitää olla luotettava, mut mulle riittää luotettavaks se et mun kone ei hälytä et se ei oo luotettava (laughs) ja niin kauan ku se ei kysy mitään idioottimaista [...] et jos se tökkää tai kysyy jotain outoo johonkin välii ni sit se ei oo mun mielestä luotettava” (R4, 15.09.2014)

Palkkaus.fi

When discussing about trust and security related to the Palkkaus.fi service, two main aspects rose from the data. Firstly the functionality and design aspect was brought up as a determinant of trust. The user interface design is thus not only determining how easy to use a service is perceived but also how secure and trustful a service is perceived.

“Teknisesti tottakai vaikka nyt sitä et kysynykkään niin sen täytyy toimia. Sillä tavalla ette se pätki tai muuta tällästä et sä voit luottaa siihen et nyt ku mä tätä teen tässä niin tää menee kans loppun asti eikä heitä ulos kesken kaiken tai jotenkin tällästä mikä on joillekin sovelluksille tietenkin tyydyllistä” (R2, 26.08.2014)

"tää vaikuttaa hyvin ammattimaisesti tehdyltä, tää näyttää luotettavalta, et sehän toki vaikuttaa siihen et miten kokee et onks sivusto esim luotettava” (R3, 08.09.2014)

Furthermore R3 commented on a more technical design aspect, the security certificate, which enhanced the trustfulness: "tää on salattu sivu jota tietenkin kattoo jos syöttää jotenkin tietoja” (R3, 08.09.2014)

The second, more emphasized aspect was available references and sources. The respondents commented on various possible references or sources that make a service
feeling more trustworthy and secure. These can be further categorized into internal and external information.

Internal information that was noted by the respondents consisted of having contact information and giving the service provider a face through presenting members of staff. Furthermore as the phenomena of wage payment is highly legislative, the respondents wanted to have information gathered on the different aspects of the process and laws behind it.

“tääl lukee kyl hyvin tää että näin paljon tässä sinulle kuuluu tätä vähennystä mutta et joku pykälä siitä et mihin se perustuu tai jotain tälläistä vois olla joku info ikkuna ehkä tai jotain muuta et jos tää teoria tääl taustal kiinnostaa” (R2, 26.08.2014)

"Sithän täält on heti löydettävissä tiedot kuka tän on toteuttanut ja täältä saa tarvittaessa yhteyden, ne nyt on ne tärkeet” (R3, 08.09.2014)

External information on the other hand consisted of credible endorsers, partners, and sources.

"Tollasesta palvelusta mikä niiku palkka-asioihin on kytkoksissä niin tiettenkin siinä on varmaan se et jos niinku alan ammattilaiset sitä niiku suosittelee tai et se ois puheessa siellä et tää on hyvä juttu niin se on ihan heti semmoneen signaali. (R2, 26.08.2014)

” mut just tälläset tekee kyl lutettavaks tän (referring to tilaajavastuu.fi, veroilmotus.fi links)” (R4, 15.09.2014)

Overall trust and security were discussed quite deeply with the respondents and it woke opinions about various aspects related to the issue. Looking at those with a more technical knowledge, they commented more on security aspects built in, e.g. secure site (SSL). However those who had less of a technical background relied more on available information, both internal and external.

4.1.4. Hedonic value

When asking respondents on what they actually do on the internet, quite a few different applications were mentioned. Most notable usages were information seeking, music and videos, social media, shopping and internet banking.
Previous research in technology acceptance focusing on consumers highlights the importance of incorporating hedonic values into the theory (Childers et. al. 2001). As Childers et. al. (2001) mentions, consumers are “problem solvers” or seeking “fun, fantasy, arousal, sensory stimulation, and enjoyment”.

Looking back at what the respondents said they were using the internet for, most of the applications tick these boxes. Seeking information usually involves a reason, or a problem, while other applications e.g. music, videos, social media and shopping can be seen as hedonic solutions.

One aspect of hedonic values that has not been recognized directly in previous research is the aspect of time saving. While time saving itself might not be seen as a hedonic value, it can be seen as an antecedent to hedonic values. The amount of time available during the day is limited and therefore all time that can be saved can be used for something else. And since hedonic activities should ideally be something that is done in one’s spare time, all time that can be cut from doing mandatory things can be transferred into time spent doing something else.

“kyllä tulee siis aika säästää, sillä minkä on joudutun käyttämään ja nyt jos se aika säästyy” (R2, 26.08.2014)

"kaikki ne jotka käyttää palvelutoimistoja tai sitten miettivät itse sitä omaa aikaansa kun ne alkaa, teenpä tässä nyt palkkalaskelmat ja hoidanpa nämä lomakkeet ja lähettelen niitä niin jos alkaa laskee omaa tuntipalkkaansa siinä että paljon tähän meni aikaa..” (R1, 23.07.2014)

Respondent 3 pointed out how the Palkkaus.fi service would save a considerable amount of time.

"No siis selkeesti tää säästää multa aikaa, todennäköisesti ainakin muutamilla ensimmäisillä kerroilla aivan järkyttävästi aikaa, menis varmaan ainakin päivä vähintäänkin, sitkään mä en ois varma et oonks mä tehny ja maksanu kaikki niinku pitää oikein.” (R3, 08.09.2014)

Asking about the Palkkaus.fi service, the first things that respondents commented on was the ease and quickness of the service. Respondent 1, a professional in financial management, explained the various aspects that are to be acknowledged when paying wages in households (also illustrated in figure 1 in chapter 1.5) and further comments that it resembles companies. When asking about the service itself, the first thing he commented on was the ease of the service, also highlighting possible time saving:
“Se on kyllä äärimmäisen kätevää, et jos se hoituu, tai jos ja kun se hoituu tuon ohjelman kautta” (R1, 23.07.2014)

Respondents seemed to value services that were either used for pleasure and fun (eg. Music and social media) or as in Palkkaus.fi, helped to make complicated things easier while saving time. Especially when considering new services, the time saving aspect seemed to motivate respondents to use Palkkaus.fi service.

4.1.5. Social Aspects

A fifth category of data that was revealed in the interviews was social aspects. As consumers have the possibility to choose if they use or disuse a service, the social influence of those around us will inevitably have some effect on the acceptance process. The primary social aspects that were distinguished from the data can be further categorized into Word-of-mouth and social support.

When discussing how the respondents proceed when considering a new service, most started out by talking of the need of the service. After this the discussions turned towards either “googling” it or asking friends or family if they know any solutions towards the problem they aim to resolve. Those respondents who started out by “googling” stated that afterwards they might ask friends, family or even some forums if somebody knew a service that could solve the need.

"No varmaan aluks googlettamalla jos ei löydy mitään fiksua niin mahollisesti sitten foorumieilta tai joltain tutulta, kavereilta, joka vois tietää et onks tähän olemassa joku..” (R3, 08.09.2014)

Having positive word-of-mouth had two effects on actual acceptance towards a service. First the respondents pointed out that there might be less of a barrier to try a new service if there were positive reviews about it. Secondly positive word-of-mouth acted as a trust enhancer towards the service provider.

"Jos niil on hyvät kokemuksset niin helppo käyttää samaa” (R4, 15.09.2014)

"Mitä muut on siitä palvelusta mieltä että onks se ollu mistään kotosin ja mitä ne on ne käyttäjäkokemukset toisilta..” (R2 26.08.2014)
Especially if friends were using the same service they were also seen as a possible technical support. When having problems, some respondents pointed out that one can ask for help if needed.

"Niin, koska hyväs puoles on se et jos kaikki käyttää samaa niin siin saa kans sen et jos sitä ei osaa niin toinen tietää kun se käyttää sitä samaa" (R4, 15.09.2014)

"On sil vaikutusta et tietää et joku osaa niin silt saa apuu, sit uskaltaa mennä paremmin sinne kokeilee" (PR1, 18.06.2014)

When discussing possible negative experiences that others might have of a particular service, some respondents noted that the effect was not as powerful as with positive experiences.

"Joo mut sit toisaalta, kyl sen tietää et toiset ei tykkää vaikka ois hyvä [...] Et se ei oo niin vahva se niinku huono" (R4, 15.09.2014)

Others commented that negative experiences increases issues of trust and security of the service and can spiral out of control.

"No se on tietysti ihan ehdotonta, sehän menee niinkuin sanoin huonot uutiset etenevät netissä hirveät vauhtia, oli ne sitten aiheellisia tai aiheottomia" (R1, 23.07.2014)

"Kyl se vaikuttaa, siinä sit miettii kahdesti, edelleen kyl mä kattoisin vähän muitakin lähteitä kun sen yhen tai pari mielipidettä jostain asiasta mut että jos yleinen mielipide on se että tää ei toimi tai ei oo hyvä tai siin on joku turvallisuusongelma tai muuta niin kyl se silloin jää käyttämättä." (R2, 26.08.2014)

Overall the social aspects seemed to work not only as a potential introducer towards a new service, but the opinions of friends and family seem to be valued. Furthermore some respondents were more open towards possible criticism and wanted more sources to form an unbiased opinion of a service. Social aspects seemed to tie into trust and security aspects as well, providing a second platform for information that then enhanced the perceived trust towards new services.
4.1.6. Actual attitude towards acceptance

Davis et. al. (1989:986) states that: “all else being equal, people form intentions to perform behaviors toward which they have positive affect”. The respondents were deliberately not asked directly if they would use the service offering or not because of the variation in the sample, e.g. professionals have other programs they might be using already and those who do not have the need for the service might not use it because of that.

The respondents were asked whether they would recommend the Palkkaus.fi service to their friends and if they would pay for the service. By looking at their answers to these two questions, it should become quite evident if the respondents actually accept this new service or not. All respondents noted that they were prepared to both pay for a service like this and further recommend it to a friend, mostly due to the time saved and easiness in comparison to the traditional way of paying wages.

The data gives hints of an age factor moderating the acceptance process, as proposed by Venkatesh et. al. (2003) in their unified theory of acceptance (UTAUT). Respondents noted that younger users that have been growing up around technology and are more open to the use of new technology.

“Mutta jos ajattelee nuorempia yrittäjiä on aika vaikea kuvitella että ne kovin kauan pysyy niin sanotussa perinteisessä järjestelmissä, paperitulosteissa ja näin” (R1, 23.07.2014)

” kyllähän toi teknologia on tätä päivää meidän sukupolvella” (R2, 26.08.2014)

"se on vaan niin jokapäiväissä käytössä olevaa ettei sitä oikeestaan edes mieti sillä tavalla” (R3, 08.09.2014)

When discussing different usages online and asking about music or video streaming respondent 4 went as far as stating “Ei, en oo sen ikänen” emphasizing that the disuse of the technology is age related rather than need related.

Actual attitudes towards accepting is quite hard to measure, since both the background and the possible biases might affect the answers regardless of the service. By approaching the subject through indicative questions the respondents expressed both
an interest in the service and a will to pay for it. This can be then interpreted as a
positive attitude towards the service.

4.2. Undeclared work

As the case service is developed to make undeclared work easier discussing the topic
with the respondents should give important information on the phenomenon and
reveal possible context specific factors that haven’t been noted earlier. When discussing
possible reasons of paying undeclared, some interesting points were highlighted. Firstly
as paying declared was seemed bureaucratic and complicated, some of the respondents
thought that there might be those who pay undeclared just because of the bureaucracy,
since they may not understand where to pay, when to pay and how to deal with all the
obligations. This might be caused by lack of understanding, lack of effort or even lack of
caring.

Asking the respondents about how they perceive the risks and moral consequences of
paying undeclared revealed that overall it was deemed morally wrong, but the current
legislation does not really help in contributing towards declared wage payments. What
seemed to bother the respondents was the obligation to notify on all the small works
that a friend or acquaintance helps with.

"No eihän se harmaan talouden ruokkiminen tietenkään isos mittakaavas
oo ificio hyvästä eikä varmasti pienessäkään mittakaavassa et tottakai se
pitäis kitkeä ja saada ne rahat sellaseen kierton ko niiden kuululu menän
et onhan se väärin.. mutta joku ehkä oma moraalikäsitys tästä sanois et
sinä vois olla joku pieni euromääräinen raha et sen muutaman kympin
vois sille jouluukille heittää ilman et siit tarvis tehä niiku viikkoo
kestävää paperisotaa” (R2, 26.08.2014)

"No onhan se tietenkin aina pidennetty ongelma koska ne ei oo sitten
tehty virallisestityötä, työntekijälle ei jää mitään suojaa eikä mullakaan
oo niinku suojaa jos se saa aikaseks jotain vahinkoa” (R3, 08.09.2014)

The data suggests that there is a volatile line of where it is acceptable to pay undeclared.
When paying e.g. a neighbour girl some money for occasionally babysitting or friends
for some small help, the moral barrier of paying declared was seen much lower than
when paying larger jobs or on a regular basis. This might be because of the amount of
time and effort that is needed for the correct procedures and paying declared is thus not
seemed as a viable solution.

“että tota se on häälyväinen tuossa mielessä mut et en tietenkään tue sitä
harmaat taloutta siinä mielessä” (R2, 26.08.2014)

"No kyllä kai itse kullekkin jossai vaiheessa jos jotain pikkuhommaa
tehdään kotona, mökeillä ties missä” (R1, 23.07.2014)

"Semmosessa tilanteessa missä ei puhuta suurista summista ja se on
jollain tavalla tutu” (R4, 15.09.2014)

The respondents were later asked about how they perceive the Palkkaus.fi service and
how it could impact the problem of undeclared work. Respondents pointed out the ease
of use and the quickness of the service and some commented that these could possibly
help those who have problems understanding the correct procedures. Furthermore as
the service is meant for everyone, one does not have to be an expert to manage the
service.

"Toihan oli harvinaisen selvä et kyl tyhmäkin osais ton” (PR1, 18.06.2014)

"et varmaan niiku näille joille se vaikeus on ollut kaikessa et estäis sen
oikein hoitamisen niin ei oo ainakaan sitä syytä enää sitten” (R2,
26.08.2014)

"Kyllä mä uskon mut tietysti jos ajatellaan lapsenvahtia ja vaikka jos
tuotaniin siskonlikka tulee kattomaan tuota pieniä lapsia ja sille antaan
rahaa niin se ei niiku näy missään ja siihen on aika mahdoton puuttua”
(R1, 23.07.2014)

Overall respondents were against undeclared work, but most acknowledged that there
might be times where paying declared using the procedures available is not seen as a
viable solution due to the time and effort it takes. From a moral point of view,
respondents had different opinions on when paying undeclared was seen morally right
or wrong.
4.3. **Uncategorized results**

Finally there was a group of aspects that did not specifically fit any of the previously mentioned. Some respondents noted accessibility as an important factor in the acceptance process. It was not evident if accessibility affected more the perceived ease of use or the usefulness, but as the service has to be accessible in order to be used it is incorporated into the usefulness part in this study. For example, respondents talked about search engines and links to and through other webpages

“Se on niinka saatavuus tai löydettävyys tai hakusanimat ja tälläiset näin” (R1, 23.07.2014)

Another aspect that was mentioned in some of the interviews was the cost/benefit aspect. Respondents were unanimous that they were prepared to pay for a service like this. Asking about the pricing of the service, most felt that it was cheap compared to the time saved. Respondent 1 furthermore commented that compared to the software that professionals use, the service fee was a bargain.

"Kyllä mä maksaisin, tietysti mä oon taloushallinnon ja mä tiedän että mitä niiden palkkaohjelmien pyörittäminen ja palkanlaskenta ja se on pelkkää palkanlaskentaa, sit jos mietit että sun pitäs vielä nämä vakuutusyhtiöt ja tehtävät työilmoitukset hoitaa sen lisäksi niin onhan toi äärettömän nopee tai kätevä” (R1, 23.07.2014)

"No nyt on vähän vaikee arvoida kun ei itellä oo sellasia tarpeita ollu et ois jollekin pitäny maksaa että kuinka paljon aikaa se oikeesti vaatis tehdä kaikki niinkin toisaalta ete, se paperisota. Mut kyl mä niinku luulen et jonkinnäköisen korvauksen siitä että så saat yhen sivuston kautta niin klikattuu eteenpäin tiedot ja joku muu hoitaa ne oikein eteenpäin niin ihan varmasti.” (R2, 26.08.2014)

Respondent 4 suggested a possible annual (subscription) or package fee (e.g. a 10-time card), if e.g. a household has a cleaner on a weekly basis. Then a continuous use could be rewarded with a cheaper bulk price.

"Mut sit jos tällä esim vuoden maksais jostain lapsenvahtipalvelusta niin sittähäs tää vois olla joku kiinteet hinta semmonen niinku, joku vuosmaksu.. Sillä tavalla et jos niinku esimerkiks viikkosiivous et tietää, kerran kuussa maksat ja käytät tätä niin vois rekisteröityy niin ois vuospalvelumaksu et jos on joku semmonen säännöllinen, mut se vaatii..."
When considering SaaS that has to be paid for, either subscription based or usage based, the value that the user gets compared to the price paid plays a significant role in the acceptance process. Overall the results were quite well in line with the assumptions made from different parts of the acceptance literature. Some parts have to be reconsidered in order to suit the SaaS context. Next the results will be analyzed and drawn together into an acceptance model for SaaS environments, which will be thoroughly discussed.
5 PROPOSED MODEL

The results from the study indicated that some parts may have to be reconsidered from the technology acceptance literature in order to suit SaaS environments. Firstly the original Technology Acceptance Model presented by Davis (1989) is not considering a large amount of factors that seem to have direct influence on attitude towards behaving. Analyzing the results shaped a conceptual model (figure 9) consisting of seven larger factors that are influencers of attitudes towards using.

Furthermore the social aspect seems to also have an indirect effect on perceived usefulness, as suggested in TAM2 (Venkatesh and Davis 2000). Otherwise the model started to resemble the unified model of technology acceptance in a consumer context, UTAUT2 (Venkatesh et. al. 2012) with the exception of adding a trust and security factor separately as suggested by e.g. Gefen et. al. (2003) and Dahlberg et. al. (2003). Furthermore the factors are moderated by personal traits, a larger phenomenon in comparison with UTAUT2 where moderations are through age, gender and experience. Next the proposed model and constructs are presented and discussed in their respective subchapters.

Figure 9: Proposed conceptual Model
5.1. Ease of Use

A large part of a user gaining acceptance of a technology involves the ease of use. Whether it is products or services, having a user friendly service goes a long way in the consumer acceptance process. The original TAM incorporated external variables that had an impact on perceived ease of use which further impacted both perceived usefulness and attitude towards using (Davis et al. 1989).

Looking at the categorized data, the thing that was referred to throughout the sample when discussing ease of use was “logic”. All respondents commented in one or another way that the service has to be designed to be logical. This has partly to do with user interface design, but also on how information is divided into the service, how easily accessible the information is. As respondent 3 mentioned, a well-designed user interface is one where you see directly what you need and do not have to question how to find something.

Davis et. al. defined Ease of Use as following: “the degree to which a person believes that using a particular system would be free of effort” (Davis 1989:320). Where previous research has tackled explaining Ease of Use with the help of numerous variables such as computer anxiety, trialability, playfulness, and enjoyment, it has failed to explicitly acknowledge the logic aspect of the use of the technology/service (Lee et. al. 2003). This can be due to numerous reasons such as, the company perspective that most researchers have focused on or seeing it as being too evident. It can also be due to the fact that most of the previous acceptance literature is done through quantitative methods and either validating or incorporating aspects without researching what the actual things are that users value behind the concept.

Depending on the SaaS offering, one way of tackling this is to break down the service into smaller parts, as with Palkkaus.fi that jumps from one step to another logically and thus helps the users focus on a single part at one specific point of time. In some cases this step by step method might not be either a feasible or a recommended alternative. In these cases it is still important to remember to divide the information into logical sections.

Furthermore looking at the problems that the respondents had and analyzing the larger perspective, would suggest that an important aspect that has not previously been recognized by literature is linguistics. This has much to do with the “logic” aspect
presented previously. Communicating clearly the information that is intended to is especially important when talking about payments and legislation. As with the Palkkaus.fi case, the problems that the respondents had which were associated with linguistics caused that the actual wage payment would have been wrong. When choosing how to communicate something, service providers should be very careful to not cause any misinterpretations that might make the service perceived harder to use or even cause larger problems.

Finally respondents talked about both sign in processes and available instructions. This suggests that users value support across the usage of a SaaS offering. As SaaS is accessed through a website and involves the user to sign in to the service, the service provider has to make sure the sign in is easy, yet reliable. This creates a potential paradox. While users seem to value easy sign in processes, they also value highly security. The question is how to balance these two? One respondent talked about incorporating online banking recognition when logging in so one does not have to remember different username and password combinations. Other ways to deal with this could be the incorporation of biometric verification through e.g. fingerprints or iris recognition, which would be quick with the right equipment, but this needs to penetrate the market first since it is not openly available for the consumers.

Other things that were brought up by some of the respondents that relate to the ease of use were having instructions. Comparing the transcriptions between those who had more of a technical knowledge and those who had not, showed that the ones with the technical knowledge did not seem to value instructions as much. This might be because of beliefs that they can manage without instructions due to their technological knowledge. This would reflect that individual beliefs have some impact on perceived usefulness as originally suggested by Venkatesh (2000).

On the other hand this experience or lack of can also be seen as a moderator shaping the actual relationship between perceived ease of use and behavioral intention as suggested by Venkatesh et. al. (2012). A further discussion on moderating effects will be presented in subchapter 5.8.

5.2. Usefulness

Another key construct in the original Technology Acceptance model (Davis et. al. 1989), usefulness, has been proven in several studies to have a significant effect on acceptance
of new technology. The results from this study indicate that the usefulness aspect of a SaaS service relates directly to the attitudes, but gains some modifying relationships as well.

Firstly the usefulness of a service can be defined by solving a need or a problem. How well it thus solves the problem is how useful the service is perceived. Hence understanding the add-on values that the service aims to bring and messaging them clearly is advantageous in gaining initial acceptance with users.

In the case company the service aims to ease the wage payment of private employers. Comparing the initial thoughts about wage payment and how it relates to the Palkkaus.fi service offering revealed that the service itself is more effective for those without previous experience. While the respondents were almost unanimous that the problem that the service aimed to solve was deemed difficult, those who had learned it did not feel it to be that hard anymore. Thus the usefulness aspect of those who had not learned can be considered much greater than those who already had experience of wage payment.

This would suggest that experience also has a moderating effect on perceived usefulness in the sense that the more experience one has of a specific task (in this case wage payment), less useful they acknowledge the service. This would add to the results from Venkatesh et. al. (2012), who suggested that performance expectancy (usefulness), was only moderated by age and gender.

The data also showed evidence that there might be cases where the usefulness of a service does not become evident to the user and might require a social impact from e.g. word of mouth or the media. This can be seen as a one way relationship between social aspects and usefulness. This relationship is discussed further in chapter 5.5.

### 5.3. Trust and Security

The third category which showed an impact on the acceptance process was trust and security. The collected data suggests that these were not linked to either ease of use or usefulness as presented by e.g. Pavlou (2003) but rather as a separate determinant as suggested by e.g. Dahlberg et. al. (2003) and Gefen et. al. (2003). Furthermore as Pantano and Di Pietro (2012) acknowledged, trust and security are much intertwined and it can be hard to distinguish completely one from another.
Overall in SaaS contexts, which are web based services, respondents acknowledged that they are not completely safe. Trust can be enhanced in the eyes of the users in two ways, either through technical solutions, e.g. SSL certificates, username and password login or using online banking certifications in the login process, or through appealing to the users sense of trust with transparent information.

This is somewhat in line with what Pantano and Di Pietro (2012) and Dahlberg et. al. (2003) talked about perceived security. The difference is that where they acknowledged mostly the effective security solutions (the technical part). This data suggests putting more effort in creating a mutual platform of trust, which appeals also to those with less experience in technical solutions. While most users probably do not even understand the function of SSL certificates and other technical design features that contribute to the actual security of the service, this platform can be created by focusing on promoting awareness and enhancing the image of the service should be a high priority in order to gain acceptance.

While large companies and brands that launch new services can be from the beginning considered more trustworthy due to their image (and possible previous experiences), new and smaller companies have to focus on other ways. When the respondents discussed further on what affected the trustworthiness, the data revealed three categories; internal information, external information, and functionality and design.

The internal information part, that consists of contact information towards the service provider and information of the process or service itself. This is related to what Koufaris (2002) points out, that when using an online service the consumers cannot rely on their senses but rather on the information available to them. Thus having as much relevant information about the company and the service itself, helps to give the service provider more tangible contact point or a “face”, which is then easier to relate to.

External information on the other hand relates much to what Kim et. al. (2008) notes as affective trust i.e. indirect interactions. When discussing trust with the respondents and especially how to increase perceived trust, sources, credible endorsers and partners were the most highlighted aspects.

As with any claims or external information, sources help to back this up and especially when dealing with legislative information it is important to show the users where the
information comes from and that it is up to date. In the case service, talking about percentages going to different statutory payments, users without prior knowledge in which fees include in wage payment might want to get information on where this information is coming from to assure that the percentages are actually right.

Secondly respondents talked about having credible endorsers. When new service providers try to convince the potential users about starting to use their service endorsements can play a big role in how trustworthy it is seemed. Respondents noted that it is not enough to have any endorsers but companies need to have credible, to the specific service suited endorsers. Having endorsers who link naturally to the service provided, helps the service provider to take part of the image these endorsers have established in the eyes of the potential users, thus increasing trust. In this case, respondents talked about e.g. politicians, who are seen as an impartial authority in the subject.

The final aspect of external information is possible partners. This has basically the same function as endorsers. Service providers can help build their trustworthiness by partnering up with other service providers that have already established a credible reputation. Notable is though that when partnering up with another service provider, as in the case of endorsers, partners have to be relevant to the service.

The third category that respondents talked about was functionality and design aspects. As with any service, the servicescape plays a role in the overall experience. When talking about SaaS, the website the service is reached from acts basically as a single point of contact, thus highlighting the importance of design (both User Interface and User Experience). As respondent 3 noted, having a professionally designed website helps it look trustworthy and thus increases trust towards the service provider.

Furthermore the functionality aspect of the SaaS was commented on. While having a well-designed website and service, which helps in creating trust, it also has to remain functional. Functionality can be linked to usefulness but when talking about trust it gains a more technical characteristic. By functionality, respondents were referring to both possible downtime and discrepancies.

If a SaaS is experiencing downtime, the whole point of the accessibility advantage is gone. Being reachable whenever can be considered as a promise to the users and when a service is down, this promise is broken. Furthermore when talking about first time
users, this might have an explicitly big disadvantage since the user might feel that the service is not trustworthy and even shift to another service provider. On the other hand, depending on the type of SaaS and how the user is committed to it, long time users might not be as harsh to occasional downtime. Considering e.g. users of Facebook, occasional downtime will most probably have less of an effect on trust since the social commitment to the service is so high.

When considering especially first time users, trust is usually an important factor to consider for them to even try the service. However, two of the respondents (PR2 & R4) noted that the usefulness aspect of the service surpasses the aspect of trust. Looking further at the transcriptions suggested that these respondents were overall less concerned about security and trust, which would be in line with the fourth type of trust, personality oriented, as suggested by Kim et. al. (2008). According to their study individuals have different propensity to trust, which can be considered as a moderating function of how trust as a whole affects the attitudes towards acceptance. Thus this personality oriented trust is included in the personal traits, discussed more in chapter 5.8.

An interesting point that one of the respondents (R4) made was that when considering payments of any sort, once an initial transaction has been made, it is already evident if the service provider is trustworthy. If the service offering matches what is delivered, the users can trust the service provider. This highlights further the unique attributes of trust related to overall security. Especially in SaaS contexts where the core service is always the same, trust should increase quickly after the initial test and thus weight of it affecting the acceptance process shifts drastically. However it is important to notice that trust can also be towards security, which is more of an ongoing process and can be demolished in an instance by e.g. a hacker incident. How users react on these incidents should depend largely on the severity of the incident and actions taken towards it by the service provider.

What was somewhat surprising was how social aspects and trust and security were so tightly intertwined. While both trust and security and social aspects seem to have a direct influence on the acceptance process, it is very clear that the social aspect has a great impact on trust and security as well. The relationship will be further discussed in chapter 5.5.
5.4. Hedonic Motivation

Researchers have throughout consumer technology literature emphasized the incorporation of hedonic aspects into the acceptance process e.g. Bruner Il and Kumar 2005 and Childers et. al. 2001. While technology usually stimulates hedonic values as Childers et. al. 2001 notes, in this study it gains a slightly different role. As wage payment is a bureaucratic procedure that for most cannot be described as either fun or enjoyable, the hedonic aspects found gain a more antecedent role.

The aspect of time saving that the data found as an emphasized aspect among respondents, is something that previous research has not fully acknowledged. Okazaki (2008) suggested experimental value as a part of the hedonic aspect that involved attributes such as efficiency and economic value. While Okazaki’s (2008) study focused on mobile gaming, efficiency and economic value share some similarities with the time saving aspect found in this study.

As discussed in the results chapter, in an ideal setting all available spare time can be transferred into hedonic activities and thus efficiency of a service affects the hedonic activities. The more efficiently a task can be done in the sense of effort and time, the more time can be used for something else.

The other aspect of time saving is its economic value. As noted for most people time is the one resource that one can’t have enough of. As there is a limited amount of hours in a day, anything that is done gains an economic value. There are differences on how people value their own time e.g. a CEO should value his/her time more than a pensioned person. Therefore when looking at facilitating SaaS solutions, such as Palkkaus.fi, the main hedonic motivations that users have is saving time, which then can be transferred to other activities.

5.5. Social aspects

Social aspects have throughout the acceptance literature been highlighted as an important aspect. While some researchers have not included it due to the complicated relationships (Davis et. al. 1989), others have included it as a key concept (e.g. Mathiesson 1991). In this study, social aspects gained an important role; not only in
directly influencing the attitudes but also influencing how useful, trustful and secure the service was seen.

Technology has given us new opportunities to find a nearly endless amount of information. Even though all this information is at the tips of our fingers, the respondents noted that they gladly get opinions and feedback from those they know. This can be due to what Pantano and Di Pietro (2012) call social pressure, where individuals are influenced by other people’s behavior. There might even be parts of the unconscious behavior where users seek for acceptance of friends and family before accepting the actual technology.

All the social aspects are directly related to forming positive or negative attitudes towards a specific technology and play a part on the acceptance process on its own. However the data also showed patterns indicating that social aspects have an indirect effect through both usefulness and trust and security.

*Relationship to usefulness*

Social aspects relate to usefulness in the sense that it can spark interest in the service itself. Especially when considering new SaaS solutions, the usefulness aspect might not be evident in the beginning. While some might not understand the benefits of SaaS solutions compared to traditional software, others might not recognize the usefulness aspects of a new service. By gaining knowledge of a new SaaS, one’s view of usefulness might change according to the one who has referred.

If for example a potential user gains knowledge of a new SaaS through an acquaintance, whose judgment the user trusts in, the acquaintances belief in the systems usefulness might be transferred into the potential user's belief. This is completely in line with what Venkatesh and Davis (2000) discussed in their study of extending the original TAM.

However, as e.g. respondent 4 noted, there might be those whose opinions one does not trust no matter how much that person recommends it. In these cases the social referral will not have impact on the usefulness in the sense that the referee’s opinion will not be transferred into the potential users’ opinion. There might however still be the chance of the user searching for more information and that the referee has sparked interest so the relationship between social aspects and usefulness is not completely discarded.
Relationship to trust and security

Social aspects relate to the trust and security concept primarily through external information. As discussed in the trust and security part, one of the large characteristics affecting the trustworthiness of a service is the external information available. As Pantano and Di Pietro (2012) noted, social influence can be either external or interpersonal. Similarly to their study, the effect on external information was noted. While Pantano and Di Pietro (2012) divided the social influence part in external or interpersonal, in this study these have been drawn together into a larger concept.

When forming opinions, users tend to use all the information available to them and do rational decisions, as Ajzen and Fishbein (1989) suggested. This is also the case with trust, since the information available for users is helping in determining how trustful a service is.

5.6. Price/Value

Comparing consumers and workplaces, one of the main differences is that consumers carry the monetary costs themselves. Thus if the consumer do not recognize the value compared to the price they pay, there is a chance that they might not accept the service. As discussed there are different revenue models for SaaS; e.g. free (where revenue is usually collected through advertisements), freemium, subscription or based on used. Understanding how to price the service can be the difference between a small and a large user base.

The data suggested two ways that the respondents looked at the pricing compared to the value. The financial management expert compared the pricing to professional grade programs while other respondents compared it to their time and the value in that. Companies can thus portray the price/value concept through either experience based or perceived value based pricing.

Experience based pricing would imply that the user has previous experience of either similar or professional grade programs. Here the price value is not seen in the traditional way, but rather as a comparison to previous used systems.

Perceived value based pricing on the other hand has much to do with both how much time is saved and how useful the users see it. If the user does not have previous
knowledge of a similar software, they tend to compare their perceived usefulness towards the price.

5.7. **Context specific issues**

As there is a wide range of SaaS solutions, different solutions have different attributes that contribute to the acceptance of the SaaS. In this case as Palkkauksi.fi deals with paying wages and hopefully reducing the undeclared work, the users’ moral judgment can be seen as an aiding factor to accepting the technology.

Those who judge paying undeclared strongly will probably be more open to accepting facilitating SaaS solutions that make wage payment easier. Where their reasons of accepting to pay undeclared according to the results might have been due to the complicated processes related to wage payment, this solution removes any barriers associated with complexity. Thus leaving with the morality aspect of should one pay declared or not.

Considering other contexts, e.g. file storage or entertainment, moral will most likely have no effect on the acceptance process and should thus be considered as a context specific issue rather than an own determinant.

5.8. **Personal Traits**

As discussed in the various parts of the model, there seems to be a moderating effect that can be categorized as personal traits. Moderating effects have been noted also in previous literature, e.g. Venkatesh et. al. (2012) found moderating effects of age, gender and experience in their unified model of acceptance. While the results from the data would suggest age and experience to be parts of the moderating effect, there was not found any clear evidence that gender would have an impact on how the respondents saw SaaS acceptance. This can be partly because of the sampling strategy and size, which aimed to limit any gender specific issues and due to the small sample size gender differences were not found.

Furthermore the relationships identified were somewhat different from the ones presented in previous literature. While Venkatesh et. al. (2012) noted moderating effects on almost all aspects in their model, here the results indicated moderation of
only Ease of Use, Usefulness and Trust and Security. Further the moderating effects found in this data suggest a larger combination of attributes than only age, gender and experience.

Previous literature has acknowledged computer self-efficiency (Lee et. al. 2003), i.e. overall computer skills, which were noted in this study to enhance both the perceived usefulness and ease of use. More specifically this is in line with what Antón et. al. (2013) noted, that the more knowledge and experience an individual has about a specific technology, the more useful and easy to use they perceive it. As SaaS is accessed mostly through computers, these two notes are blended into each other.

Computer self-efficiency modifies both ease of use and perceived usefulness in the sense that the more experienced one is with computers, potentially the easier it is for them to use it and gain the results intended. From a trust perspective this model assumes that the less experienced one is with computers, the higher the chance of interpreting possible user actions as problems within the service.

Experience in this context refers toward the experience towards what the SaaS solution is aiming to solve. In this case, experience of wage payment affects the ease of use and especially the perceived usefulness. Those respondents who did not have previous experience in wage payment seemed to value the service more due to not having to find knowledge in how to pay declared wages. On the other hand those who had previous experience noted that it is not that hard but for people paying for the first time the service is more useful. Ease of use will also be moderated by experience in the sense that if there is no previous experience in wage payment, users will likely compare the service towards the perceived difficulty of paying declared, which will enhance the perceived ease of use even further.

A second moderating function that has previously been noted by Kim et. al. (2008) as a part of the trust concept as a whole, is personality oriented trust. As Kim et. al. (2008) notes, different people have different propensities to trust which in this case affects how the different parts of the trust aspects are perceived. Personality oriented trust is incorporated into the modifier due to that the basic characteristics found in the category of trust and security were noted to some extent by all respondents but due to their personality, the strength behind the effect seemed to change.
Even though it was not that evident throughout the sample, one respondent was rather straight forward that the reason why she did not use some services was based on age. Due to the digitalization, the younger generation has more experience with computers compared to those who grew up and worked without computers and can thus be seen more computer self-efficient. The younger generation might thus perceive different SaaS easier, see the usefulness and due to being grown up in an online environment, have a different understanding about trust and security in SaaS. Thus while not being evident throughout the sample, age is included as a moderating effect.

5.9. Summary

The proposed model for SaaS acceptance differs quite drastically from the original TAM and started to some extent resemble the unified theory of acceptance and use of technology (UTAUT2) presented by Venkatesh et. al. (2012). As technology has moved forward in an amazingly fast pace, understanding the limitations that the original TAM sets in today’s world makes it clear that a change in the original model has to be made.

The following table (table 3) summarizes the determinants and modifier, while showing the main characteristics of each determinant.

Table 3: Summary of determinants and characteristics

<table>
<thead>
<tr>
<th>Determinant / Modifier</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use</td>
<td>Logic</td>
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<tr>
<td></td>
<td>UI Design</td>
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<td></td>
<td>Instructions</td>
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<tr>
<td></td>
<td>Linguistics</td>
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<tr>
<td>Usefulness</td>
<td>Add on value</td>
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<tr>
<td></td>
<td>Need</td>
</tr>
<tr>
<td>Trust and Security</td>
<td>Internal Information</td>
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<tr>
<td></td>
<td>External Information</td>
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<td></td>
<td>Technical security</td>
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<tr>
<td></td>
<td>Functionality &amp; Design</td>
</tr>
<tr>
<td>Hedonic Motivation</td>
<td>Time saving</td>
</tr>
<tr>
<td>Social Aspects</td>
<td>Word of mouth</td>
</tr>
<tr>
<td></td>
<td>External Information</td>
</tr>
<tr>
<td>Price/Value</td>
<td>Experience based</td>
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<tr>
<td></td>
<td>Perceived Value based</td>
</tr>
<tr>
<td>Context specific issues</td>
<td>Persons Moral</td>
</tr>
<tr>
<td>Personal traits as moderating effect</td>
<td>Age</td>
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<tr>
<td></td>
<td>Computer self-efficiency</td>
</tr>
<tr>
<td></td>
<td>Experience</td>
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<td></td>
<td>Personality oriented trust</td>
</tr>
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6  SUMMARIZING DISCUSSION

This chapter will summarize the results and discussion of the thesis and present some conclusions, implications and limitations of the study. Furthermore some suggestions for further studies will be presented.

Before summarizing the results it might be good to recap the aim which is to explore the underlying reasons for consumer acceptance of SaaS. This was then rephrased into the following research question:

- What characterizes consumer acceptance in SaaS environments?

To answer this question the thesis starting point was to examine consumer acceptance of SaaS using a case company providing a wage payment service Palkkausi.fi. The theoretical framework was based on the original Technology Acceptance Model presented by Davis et. al. (1989). As the collected data was analysed it became evident that the original model relying on only perceived ease of use and perceived usefulness was not enough. There was no clear evidence that the proposed factors had indirect effect on attitudes towards accepting technology but rather a direct effect.

The reason why the original TAM is not fully functional in this case is quite simple. As the original TAM was created for technology in work environments (Davis et. al. 1989), mainly simple software, that did not face security and trust concerns as online environments of today. Furthermore the consumer context, where all available information should be used when making decisions, brings forward the social aspects of the acceptance process.

According to the results presented in this thesis, consumer acceptance of SaaS is characterized by six key concepts, three of which are further modified by personal traits, and a context specific concept.

When shaping the proposed model from the available data, there started to be resemblance to the unified theory of acceptance and use of technology in a consumer context (UTAUT2), as presented by Venkatesh et. al. (2012). There were some aspects and relationships that made the models differ from one another. Venkatesh et. al. (2012) relies on performance expectancy and effort expectancy, which is more or less the same as perceived usefulness and ease of use, but with a more strict focus. This
model on the other hand retains the original perceived usefulness and ease of use since the data supports the original determinants used.

In this study trust and security aspects were emphasized surprisingly much throughout the interviews, which can partially be explained due to the characteristics of the case study. As wage payment is in its nature highly legislative and deals with monetary transactions, users have to be in complete trust that not only is the service safe, transferring the right amount to the right recipients, but also the calculations are done according to the current legislation.

Moral was suspected to have an impact on the acceptance process when talking about SaaS facilitating wage payment and reducing undeclared work. As the primary challenge for paying declared seemed to be the bureaucracy behind the wage payment process, facilitating SaaS that takes the bureaucracy out of the equation will leave moral perceptions as a factor affecting the acceptance. As mentioned, moral will most likely have no impact on the acceptance process in e.g. cloud storage services and thus has to be seen as a context specific issue rather than its own determinant.

From a theoretical point of view, this is to the author's knowledge one of the first explorations that focuses on consumer acceptance in a SaaS environment from a consumer point of view. Where previous SaaS acceptance literature has tried to explain acceptance through a service quality perspective, this study takes the phenomenon into a consumer perspective highlighting the information that consumers value when forming their decisions on acceptance.

As SaaS is growing tremendously, having laid the foundation (this study) for consumer acceptance of SaaS from a consumer point of view will be advantageous in understanding the basic components of SaaS acceptance, which can then be used in further research. Chapter 6.3. will later suggest future possibilities for further research.

### 6.1. Practical implications

As the theoretical contributions of this study are now discussed, it is beneficial to look at the practical contributions this study has. The results from this study have several practical implications. First of all the proposed model expands the traditional TAM to further give understanding in characteristics surrounding the acceptance phenomenon.
This study recognized previously unnoted characteristics such as linguistics and internal information that respondents seem to value when forming their opinions on Palkkaus.fi. From a linguistic perspective, there might be room for some reconsideration in how to communicate some parts of the service. As noted, some respondents had problems in e.g. separating amount and price from each other in the part of additional payments. Especially when the service is addressing a highly regulated phenomenon, any misinterpretations might cause serious problems such as wrongly reported and paid wages.

From a pure marketing perspective, companies should focus on two main parts. The first part includes creating a “buzz” around the service. As noted, consumers might accept the service without actually using it themselves. By gaining their acceptance, it creates a platform for word of mouth which can increase the potential user base with minimal marketing efforts.

The second part is to focus on providing as much information as possible about the service itself and of its background; the company, external endorsers, possible media recognitions etc. These help to create transparency and to give the company a face rather than just being a window on a screen. This further helps in generating trust towards both the service and the service provider.

Palkkaus.fi could also illustrate a sort of table or checklist that represents the different instances involved in the wage payment processes and the system would then tick them off once the actual payment or notice has been completed. This would increase comfort and trustworthiness by ensuring that the user can follow the stages and get confirmation that all the obligations they have as an employer are taken care of and no unwanted consequences appear later.

As those respondents who do not have previous knowledge in wage payment seem to base their perceptions on wage payment on the bureaucracy connected to it, emphasizing the time saved could result in even higher acceptance. Using phrases that illustrate the time that can be saved, should stimulate the hedonic feelings.

A last suggestion to Palkkaus.fi would be to focus some marketing activities towards the financial management community. As respondents seemed to value expert opinions, gaining recognition in expert medias and organizations such as Taloushallintoliitto and
Tilisanomat could help to grow the credibility in the eyes of the users. Palkkaus.fi could then communicate these acknowledgements further on.

### 6.2. Limitations

As with any study, there are some limitations that have to be acknowledged when using the findings from this thesis. Firstly as the study did not focus on actual usage, but on attitudes towards acceptance, there might be shaping activities from the attitudes to actual usage as suggested by Bagozzi (2007). Thus the model cannot be seen as a definitive way to manage user acceptance but rather a multifaceted model of how to understand the acceptance process from an attitudinal point of view.

Furthermore as the study focused primarily on a single case in a specific context, there are possibilities that other SaaS applications might differ from this context, by adding or subtracting aspects or roles. Especially more complex services might reveal new characteristics that have not been acknowledged in this context. Thus the findings cannot be generalized before taking the model into other SaaS contexts and doing more testing.

As the aim was to explore the field in consumer SaaS acceptance, the model itself should not be seen as a definitive solution but rather as a base point for further research to start off. Thus the model is providing a larger picture on what is going on in the field.

### 6.3. Future studies

There are many possibilities to further study the subject in hand. Firstly, as this thesis only aimed to explore how consumers accept SaaS, the proposed model needs to face testing in form of quantitative studies in order to verify the model and thus gain generalizability. Furthermore as the study was focused on a Finnish setting, there might be some cultural differences that have not been acknowledged as noted by e.g. Singh et. al. (2014).

As most of the respondents reacted quite positively to SaaS it started to raise some new thoughts and questions about the subject. Firstly, depending on the SaaS solution, do
all of the factors even need to be considered? Do the weights of the respected factors shift according to e.g. the hedonic or social value of the service? Looking at e.g. Facebook, the primary reason for acceptance might rely heavily on the social aspect of the service. It might be that the numbers of co-users affect the weights of the factors.

Thus further research could focus on a cross software study; combining new SaaS solutions to those which have established a large user base i.e. software in different points of their lifecycles. By gaining knowledge in how these two link together might provide even broader understanding in acceptance processes and how different groups differ from one another in this context.

Furthermore as this thesis did not include actual usage that would have required a longitude approach, future research could also focus on the actual usage i.e. conduct a study with the purpose of combining knowledge from pre use and e.g. 6 months later. This kind of research would give information on both the possible shaping activities between behavioral intention and actual usage, and how the model works in longitude settings.

Finally a replicated study could be made with a heterogeneity approach from the now established user base of Palkkaus.fi and see how well the proposed model fits to those who have started to use the service.
**SVENSK SAMMANFATTNING**


De finska medierna påminde oss om den svarta ekonomins existens i början av 2013 då det framkom odeklarerat jobb på minister-nivå (Iltasanomat 2013). Sedan dess har det varit ett hett ämne och regeringen har försökt kontrollera det med lagar, förordningar, kontroller och böter (Vero.fi 2013).

En omdebatterad orsak till svart lönebetalning har varit byråkratin kring anställning och avlöning (Kauppalehti.fi 2013), då det inte finns någon enhetlig process för att göra betalningarna och deklarationerna till de olika instanserna. Fallföretaget Palkkaus.fi är en nätjänst vars utgångspunkt är att göra lönebetalningar lätt och snabba, så att vem som helst kan göra dem och förhoppningsvis minskar betalning av svarta löner.

**PROBLEM OCH SYFTE**


Även om teknologiacceptans har varit ett mycket djupt forskat ämne, har acceptans av SaaS än så länge endast forskats ur ett tjänstekvalitetsperspektiv, där en tjänst av hög kvalitet har antagits vara grunden för acceptans (Benlian et al 2012; Wu 2011a; 2011b; Du et. al.2013). Eftersom detta perspektiv inte tar i beaktande bl.a. personens
egenskaper eller sociala aspekter vilka har visat sig vara viktiga i andra sammanhang, är det viktigt att forska i ämnet från ett konsument-perspektiv (Pantano och Di Pietro 2012; Bagozzi 2007).

Syftet med denna avhandling är att kartlägga de underliggande orsakerna för konsumenternas acceptans av SaaS. Forskningsfrågan lyder: vad karakteriseras konsument-acceptans i SaaS-omgivningar?

**TEORETISKA REFERENSRAMEN**


Som nämnt har TAM sin bakgrund i traditionellt konsumentbeteende, mer specificerat i teorin om överlagt beteende (theory of reasoned action) eller TRA-modellen av Ajzen och Fishbein (1980), där konsumentens avsikter är bestämda genom två determinanter: den personliga faktorn (attityder) och socialt inflytande. TAM (Davis 1986) tar ett steg längre bort och teoretiserar att attityderna för acceptans av ny teknologi kan förstås genom upplevd användbarhet och upplevd användarvänlighet. Dessa två kan fortsättningsvis förstås genom externa variabler (Davis 1986).


Eftersom det är närmare tre decennier sedan TAM presenterades, har modellen anpassats och utvecklats vidare. Man kan grovt spjälka upp utvecklingen av modellen i två strömmar; den ena satte fokus på att hitta de specifika variablerna som påverkade
användbarheten och användarvänligheten (t.ex. Venkatesh och Davis 2000; Pavlou 2003) medan den andra strömmen började integrera social påverkan in i modellen (t.ex. Kulviwat et. al. 2007; Bruner II och Kumar 2005).


METODIK


Urvälet gjordes enligt en heterogen urvals metod, där sammanlagt sex personer intervjuades. Eftersom acceptans av tjänsten i denna fallstudie kan påverkas olika av både bakgrund och teknisk kunskap, ansågs det viktigt att inkludera både respondenter med lönebetalnings erfarenhet och respondenter utan denna erfarenhet. Respondenterna representerade alltså ett tvärsnitt av olika upplagda kriterier: professionell bakgrund i ekonomi, erfarenhet av lönebetalning och teknisk kunskapsnivå. Avsikten med detta var att få en så vid inblick som möjligt vilket också skulle öka vikten av gemensamma attityder.

Själva analysen är gjord utifrån Spiggles (1994) rekommendation om sju steg. Data kategoriserades först i 13 olika färg kodade grupper varefter en systematisk genomgång har gjorts för att hitta likheter och olikheter i data.

RESULTAT & SLUTSATSER

Efter datainsamlingen kategoriserades data och det blev snabbt klart att den traditionella modellen TAM inte är totalt applicerbar på en SaaS-kontext. Eftersom teknologin har framskridit i en så snabb fart sedan ursprungliga TAM presenterades, finns det skäl för att göra några ändringar. Data i denna undersökning resulterade i en sju-faktor-modell (figur 2) med en personlighets faktor som modifierare. Sociala aspekter verkade dessutom ha indirekta effekter på både användbarheten och förtroende och säkerhet. Till följdande presenteras de olika aspekterna och deras viktigaste egenskaper.

Användbarheten har däremot mest att göra med att fylla ett behov och bevisa tilläggsvärdet som tjänsten ger. En intressant poäng som kom upp var att ju mer erfarenhet någon har av ett fenomen (t.ex. lönebetalningar), desto mindre användbara ser denna att nya tillvägagångssätt är. Fortsättningsvis hade sociala aspekter indirekt påverkan på själva känslan av användbarhet. Ifall användaren ser och hör av sina bekanta något om tjänsten, kan dessas syn på användbarheten flyttas till själva användaren eftersom man litar på sina bekantas åsikter.

Figur 2: Presenterade modellen

Intern information består av information om tjänsteleverantören och själva tjänsten. Ju mer information som konsumenten kan få, desto mer transparent blir tjänsten och leverantören får ett "ansikte". Extern information består däremot av bl.a. länkar till legislativ information (i detta sammanhang om lönebetalning), kända stödjare och möjliga samarbetsföretag.


Sociala aspekter har mycket att göra med det sociala tryck som finns. Även om webben har omvandlat informationssökningen, tyckte respondenterna att den respons de får av bekanta är viktig. Det kan till och med vara att de söker initial acceptans av sina bekanta före de själva accepterar själva teknologin.

Då vi talar om konsumenter är det viktigt att notera relationen mellan pris och värde. Eftersom konsumenten själv bär den monetära kostnaden måste det som användaren får ut ur tjänsten vara i linje med kostnaden. Data visade två olika sätt att se på pris/värde-relationen. De som hade professionell erfarenhet av liknande tjänster värderade priset gentemot professionella program, medan de som inte hade professionell erfarenhet uppskattade relationen gentemot det uppfattade värde som tjänsten gav.

Som en sista faktor i modellen ingår kontext-specifika drag. Eftersom detta sammanhang var lönebetalningar och en tjänst som förhoppningsvis minskar betalning av svarta löner, visade sig personens moral ha en påverkan på acceptans av denna tjänst. Då en stor orsak till svart lönebetalning har varit svårigheten med den lagenliga

Den modifierande faktorn som beaktar personliga drag innehåller bl.a. ålder, erfarenhet och själveffektivitet med datorer. Dessa påverkar bl.a. hur användbart och användarvänligt SaaS uppfattas. De som har högre själveffektivitet med datorer, känner att det är lättare att använda nya SaaS-tjänster och vice versa.

Sammanfattningsvis kan konstateras att eftersom teknologin har framskridit så fort sedan utvecklingen av TAM (teknologiacceptans-modellen), märktes det snabbt att den ursprungliga modellen inte var fullt tillämpbar. Som nämt var TAM utvecklat för enkla datorprogram i B2B-kontexter och måste därför expanderas. Resultatet blev en sjufaktormodell som fortsättningvis var modifierad av personliga drag. Både konsument- och webb-kontexten bidrog med nya faktorer som inte tidigare har noterats i TAM.

**PRAKTISKA IMPLIKATIONER OCH FORTSATT FORSKNING**

Från ett praktiskt synsätt kan resultaten från denna studie användas på flera sätt. Först visade resultaten egenskaper som tidigare forskning inte hade noterat, nämligen språk och intern information.

Fortsättningvis poängterades både säkerhet och förtroende förvånansvärt mycket, vilket skulle betyda att företag måste lägga mycket fokus på att försäkra användare om tjänstens säkerhet. Genom att företagen ger en kontaktpunkt till sina användare i form av information om leverantören samt tjänsten, kan de öka sitt förtroende.

Fortsatt forskning kunde fokusera på både olika SaaS-sammanhang och longitudinell forskning. Eftersom denna studie inte tar i beaktande faktisk användning utan endast attityder mot teknologin, kan fortsatt forskning möjligt hitta aktiviteter som formar acceptansen mellan attityder och användning. Fortsättningvis kunde fortsatt forskning undersöka olika SaaS-tjänster med olika etablerade kundbaser; de som redan har en etablerad kundbas och de som har börjat. Detta skulle ge information om hur de olika faktorerna påverkas genom initial acceptans.
REFERENCES


Singh, N. Fassott, G. Chao, M. C. H. & Hoffmann, J. A. (2004). Understanding international web site usage – A cross-national study of German,
Brazilian and Taiwanese online consumers. *International Marketing Review*, 23, 1, 83-97.


APPENDIX 1 – Interview Guide in Finnish and English

Interview guide Finnish

Ennen:
1. Kertoisitko vähän itsestäsi ja kokemuksistasi teknologiaan ja erityisesti verkkopohjaiseen teknologiaan?
   - Miten teknologia on vaikuttanut siihen miten teet asioita?
2. Voitko kertoa sinun verkkokäyttäytymisestä?
   - Mitä teet verkossa? Mitä palveluita käytät?
3. Jos mietit käyttäväsi uutta palvelua internetissä niin miten palveluntarjoajan tunnettavuus vaikuttaa?
   - Miksi?
4. Kun harkitset uuden teknologian ostamista tai käyttämistä, mitkä ovat ne asiat joita mietit ensin?
   - Eroavatko tuotteet ja palvelut toisistaan tässä merkityksessä?
5. Miten kollegojen ja ystävien teknologian käyttö vaikuttaa sinuun?
6. Kun teet verkkoo-stoksia, mitkä asiat vaikuttavat käyttäytymiseen?
   - Tunnettavuus?
   - Luotettavuus?
7. Mitä verkkopohjaisia palveluita käytät?
   - Mikä tekee verkkopohjaisesta palvelusta hyvän?
   - Mitä on hyvä palvelu?

Muista painottaa anonymiteettiä tässä kohtaan
8. Voisitko kuvitella maksavasi palkkaa pimeänä? Miksi / Miksi et? Minkälaisissa tilanteissa?
9. Osaatko kertoa miten laillinen palkanmaksu toimii kotitalouksissa? Oletko maksanut laillisesti?
10. Oletko miettinskyt riskejä ja moraalisia vaikutuksia pimeään palkanmaksun yhteydessä?

Tehtävä
Anna tehtävä

Jälkeen:
11. Mitkä asiat tulevat mieleen käyttäessä tätä palvelua?
12. Millä tavalla kuvallisit palvelun helppokäyttöisyyttä?
13. Mitkä näkemäsi asiat palveluista vaikuttavat luotettavuuden luomiseen?
   - Mikä jää puuttumaan jolla saisi vielä enemmän luotettavuutta?
14. Maksaisitko tällaisista palvelusta?
   - Miksi/Miksi et? Mikä olisi sopiva summa?
15. Uskotko että palvelu on turvallinen käyttää?
   - Miksi/Miksi et? mitkä asiat vaikuttavat siihen?
16. Miten uskot tämän palvelun vaikuttavan pimeään palkanmaksuun?
17. Suositeltisitko tätä ystäville ja kollegoille? Miksi?
18. Mitään lisätävää?
Tehtävä:


Suorita näillä tiedoilla Palkkaus.fi palvelua käyttäen laillinen palkanmaksu.

Task:

You have hired a private person to do some construction work in your home. The job includes 80 hours of work and the employee has a rate of 23€ per hour. The person is 45-years old and works on a tax card. The tax percentage is 24 %. This is the only work that you have done through him so the yearly wages are over 1500€. In addition to the wage, you pay 250€ of material costs. You don’t have to pay collective add ons and the work takes 10 days. The distance to work is under 5km and the work can be declared under domestic help.

Please preform using this information and Palkkaus.fi service a declared wage payment.
**Interview guide English**

**Before:**
1. Could you briefly tell about yourself and about your experiences with technology, especially web based technology?
   - How do you feel technology has changed the way you do things?
2. Could you tell me about your internet behaviour?
   - What do you do on the internet? What services do you use?
3. If you think about a new service on the internet, how does the awareness of the service provider affect?
   - Why?
4. When you are considering buying or using new technology, what are the things you think about first?
   - Do services and products differ in this sense? How?
5. How does the technology use of your peers and friends affect you?
6. When you do online shopping, which things affect your behaviour?
   - Awareness?
   - Trust?
7. Which online services do you use?
   - What makes X (one service he/she mentioned) good?
   - What is good online service?

*Remember to emphasize the anonymity*

8. Could you consider paying undeclared? Why/why not? In which situations?
9. Can you tell me how declared wage payment works in households? Have you paid declared?
10. Have you considered the risks and moral consequences in paying undeclared?

**Task:**

*Give Task*

**After:**
11. What things come to mind when using this service?
12. How would you describe the ease of use of the service?
13. What aspects of the service appealed to your sense of trust?
   - What could increase the sense of trust further?
14. Would you pay for a service like this?
   - Why/Why not? What would be a good sum?
15. Can you tell me about the sense of security of the service?
16. How do you think this service can help with decreasing undeclared work?
17. Would you recommend this service to family and friends? Why/Why not?
18. Have you got anything to add?