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Abstract
E-services including electronic tax declaration are becoming trendy in Sweden. Many resources are invested in their development but evaluation from user’s perspective is limited. Sweden has big plans to become the leading internet nation by 2015. Are citizens opinion taken into consideration during such initiatives? Are the citizens satisfied with the e-services they have in place? With a sample size of 90, this paper studies the e-tax system in Sweden from six information system success variables. The DeLone and McLean IS success model was adopted to analyze the research question “What is the user’s perception of electronic tax declaration in Sweden”. Perception in this paper means physical impression interpreted in the light of experience. Online survey method was applied and results revealed that all six variables were successful. Time factor, security concerns and convenience influence e-service usage. Elderly exclusion, adaptability and language barriers were the major problems with the e-tax system. On a whole, this paper aims at providing general contributions to e-service research in the future.
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List of Acronyms

1. D&M DeLone and McLean
2. IS Information systems
3. ICTs Information and communication technology
4. IT Information Technology
5. IVA The royal Swedish academy of engineering sciences
6. OECD Organization for Economic Co-operation and Development
7. HMRC HM Revenue and Customs
8. UTAUT Unified Theory of Acceptance and Use of Technology
Assessing e-services from a user perspective: A study of the Swedish electronic tax

1. Introduction

While information and communication technologies (ICTs) are making headway, services offered to citizens are getting simpler. The desire to ease administrative duties and services offered to citizens in Sweden are some of the e-Government goals. Simplicity can be realized through the use of ICTs like the case of the Swedish tax agency (skattverket). Online services have to be developed with the citizens at the center and must meet their expectations. Electronic tax declaration (e-tax) is the focus of this paper with a little light on the traditional paper tax declaration. There should be constant e-service evaluation to go with the pace of their development. The point of departure here is not how many e-services are in Sweden but what the public thinks about the e-tax application.

Many advantages have been advanced for e-services: faster, safer and convenient which gives it more credibility over the paper declaration. The fact that the tradition paper means of tax declaration is still used gives room for investigation. More and more services are getting digitalized and there is need to study how the users are faring. Since research is unending, regular evaluation might reduce errors. Studies like this which provide general information could help skattverket authorities’ re-strategize policies before next declaration. It will also provide general contribution for future research on Sweden’s e-service. Tax declaration comes annually and not all sessions are the same. Payment of taxes has faced many criticisms and protest but the declaration method could act as a consoler.

In light with this, the research question for this paper is: What is the user’s perception of electronic tax declaration in Sweden? Perception in this study means physical impression interpreted in the light of experience which means substantial usage must be executed (Merriam Webster dictionary). This question is interesting from a research perspective given that in 2010 a total of 7 388 461 tax declarations forms were sent out by the tax agency but only 4.35 million people filed their taxes electronically. This confirms that many people are still declaration using papers hence the usage of the traditional paper version is still high. Internet is a pre-requisite for e-service usage and many studies have concluded that the internet is widely used in Sweden. If the internet is widely used in Sweden, what could possibly be the reason for long queues at the tax agencies during declaration sessions? Evaluating the system from a citizen’s perspective is the better way to obtain reasons why these means of declaration are working hand in gloves. In this same vein, pros and cons on both ways of declaration are outlined which provides information on why an e-service or manual system may possibly or may not be used. This question therefore provides general information from citizen’s perspective which could be of importance in tax declaration. Although this paper focuses more on the electronic system, additional information on paper tax declaration is a great knowledge contribution.
This question was investigated with the DeLone and McLean (2003) Information System (IS) Success Model with the use of the following success variables: information quality, system quality, service quality, intension to use, user satisfaction and net benefits. Empirical data was collected with the help of online survey from 90 participants. They were both sexes from ages 20-65+. Note that the paper declaration will also be highlighted. There is no better way to get valuable information about the long amazing queues during tax declaration in Sweden than to sample the opinions of the tax payers empirically.

2. Literature review

The existence of scanty literature especially on the traditional declaration contradicts the imperative nature of tax activity. Wang, et al. (2005) acknowledged little effort has been made to evaluate such e-applications and their ability to interact with clients, as well as the service itself as a precursor to efficient delivery. This may lead to doubts regarding its introduction and its advantages over the paper version will be questioned. Both paper and electronic tax declaration are feasible in Sweden but not so much literature exists.

Ambient Sweden (2008) (IVA) has a foresight of Sweden becoming the leading internet nation by 2015. They speculate that Sweden could lead in mobile technology, have the best e-Government system and green IT, and be a pioneer within digital media distribution. Positive statistics of internet usage is provided given that the internet is a pre-requisite for e-service usage. In the same vein, the OECD, Organization for Economic Co-operation and Development (2010) presents priority areas for e-services delivery during 2009-2012 in different countries. The report shows that Sweden aim at increasing the e-tax usage; develop more websites which will benefit the society. In the same light of e-services, Mustansar and Zulfqar (2010) acknowledge that e-tax in Sweden started functioning in December 1996 under the domain name www.rsv.se which was later changed to www.skatteverket.se in January, 2004. Problems attributed to e-services were in the domain of usage. This explains why Zhenji et al. (2005) support that e-service users sometimes do not know how to use the systems or how to find information; Ching-Wen Chen (2010) concluded that quality antecedents strongly influenced the usage of e-tax systems.

These quality antecedents have been used in the analysis of this paper following the D&M model. Previously, this model was used on e-service research in Taiwan and results proved that information and system quality were more important than service quality to the tax payers (Ludwig et al., (2010). Despite the quality characteristics levied on e-services, they also have problems plaguing them. HMRC (2007), and Bailing Liu et al. (2010) advanced security issues as the main reasons why people reject e-services. Ludwig et al. (2010) used the Unified Theory of Acceptance and Use of Technology (UTAUT) model to validate e-tax usage in USA. The citizens who used the paper version lack the confidence and trust in the electronic version.
Lars Albinsson et al. (2006) studied 335 e-services in Sweden and concluded that there are several frameworks for designing and evaluating e-services. Some interesting remarks on e-services in relation to contemporary technical trends were made. They looked at e-services maturity steps in different countries and think that for an e-service to be called matured, it must fulfill the steps: information, interaction, transaction, and integration. They agree that the citizens should be the focal point in the development of an e-service but at the same time contradicts that it could be very time consuming and hectic to get points of view from all. The question on how to include the old people in the development phase is still untouched. In the same light, the Dubai e-government department came up with the eServices Delivery Excellence Model (EDEM) which provides some sort of a checklist for e-service standards in governmental departments. In a nutshell, this model was developed to handle the whole e-service process from development to evaluation. According EDEM, e-services must be informational, transactional, and interactive.

2.1 Introducing taxes as E-services

Electronic government (e-government) is a trendy research topic at present (Grönlund and Horan 2005) which aims at delivering information and services to the citizens, business, governments etc in the fastest and cheapest means possible (Layne and Lee, 2001). The tax agency website skatteverket.se is an excellent case in point. Researchers have concluded that e-services are essential ingredients for e-government development. There are a lot of initiatives to launch e-services both at national and European levels (CapGemini 2005). Löfstedt Ulrika (2008) states that research in Sweden on e-services focuses on aspects like: development of e-Services, the design of e-Services, the maintenance of e-Services, e-Participation, the quality of services, evaluation, interactions between different e-Services etc. Additionally, the lack of awareness and coordination of current e-service research is a setback in e-services. Also, even though the United Nations report (2008) ranked Sweden as the top e-ready country in the globe, Gustaf and Perjons (2009) assume the level of e-readiness ripeness in Sweden is unsatisfactory and extra investigation is financially handicapped. Bizarrely, the actors answerable in e-service projects in the public sector are numerous and politically sensitive.

The crisis of trust in e-services is equally a big question (Bailing Liu et al., 2010). Unawareness on its usage procedures and or existence has slowed down use (Zhenji et al., 2005). While Wang et al. (2005), defines e-services as “the information and services provided to the public on government web sites.” Rowley (2006) refers to it as: “…deeds, efforts or performances whose delivery is mediated by information technology”. Wang et al.’s definition will be adopted since skattverket is a governmental website. Lu (2001) holds that e-services make it easier to reach large amount of customers with less cost and time, broadening and reducing market barriers. Parmita Saha (2008) asserted that e-services aim at improving customer satisfaction, developing strong relationships with customers and business partners, and reducing the service delivery.

2.2 Swedish tax declaration

E-tax in Sweden went operational in 1996. (Mustansar and Zulfiqar, 2010). Anna Nordén, TrustWeaver (National profile Sweden 2007), asserted that the most widely used application in this agency is the personal income tax declaration. The Investopedia dictionary defines tax return as the process whereby information on employee or companies yearly income are set up in a
worksheet format including the income figures used to calculate the tax liability. This process is yearly for every individual or business that received income during the year, whether through regular income (wages), interest, dividends, capital gains, or other profits.

Declaring taxes in Sweden can be done by: personal security codes or e-ID, SMS, or a telephone call using their personal security code. It is important to note that the “SMS” and call “alternatives” only allow citizens to confirm the information on the pre-printed tax form sent from the tax board. In cases of changes personal e-ID must be used. The agency simply dispatch pre-filled paper versions of declaration and the citizens decide how to declare (Parmita Saha 2008). The press release on 2008-04-28 acknowledged that the public prefer e-declaration for its effortlessness, fastness and closeness. According to tax officer Kay Bunks, it is easier to declare on the web as more information is printed in the online declaration than the paper version www.skatteverket.se. Statistics from the tax agency’s website show e-tax has evolved over time as publicized below. This graph shows the number of people who declared taxes electronically and comparison between 2007, 2008, and 2009 is presented.

Fig 1

Contrarily, during the days of paper declaration, the streets were busy and the traffic was tight. The tax agency’s employees stood on streets collecting the returning paper tax declaration from the public. It was probable to mistake the crowd for a festival. There would also be orchestra playing, the magicians and their tricks, hotdog kiosk, and drinks on the streets. With the advent of modernization and modern technologies, this tradition is fast becoming obsolete.

Although the tradition is obsolete, paper declaration is still in use. Reasons advanced for refusal to use the e-tax include: e-service quality, unawareness, complexities with codes, inconsistencies, unattractive, and pricey nature of the e-services (UK HMRC 2007). Privacy and security issues
are a setback. Also, citizens have expressed their views with regards to customisation and personalisation and wished the online application should feel same like the paper precedent. Time is needed to change user’s attitude towards the paper versions. The elderly have difficulties navigation websites and actual process of registering, waiting for a PIN, acclimatizing is too much effort together with standard tax deadlines (UK HMRC 2007).

2.3 The research instrument (model)

The DeLone & McLean model was first developed in 1992 and after it faced criticism, it was updated in 2003. Some variables were either replaced, integrated or meshed. The updated D&M model shows that IS can be measured from three different angles; “information quality”, “system quality” and “service quality”. All three are related to “intension to use” and “user satisfaction”. “Use” and “user satisfaction” seem to have a causal relationship but “use” must precede “user satisfaction”. A user must use a system to make an impression. Also, in this same causal manner, “use” is likely to lead to greater “user satisfaction” which will intend increase intention to “use” and eventual use. Lastly, “use” and “user satisfaction” will cause “net benefit”. D&M (2003) equally stressed the fact that “net benefit” cannot be analyzed directly or measured, but can only be measured indirectly through “system quality”, “information quality”, and “service quality” variables.

![Updated DeLone and McLean IS Success Model (2003, p.24)](image)

This model was adopted for this paper because it has been widely used in the field of information system and to e-service evaluation. (H. Agourram 2009, H. Agourram, and J. Ingham, 2007) DeLone and McLean (2002) acknowledged that the D&M success model has become a standard for the specification and justification of the measurement of the dependent variable in IS research. Also, this model since its maturity has been cited in more than 300 articles in refereed journals (D&M 2003). Also it can analyze and evaluate the performance of IS and equally enable comprehensibility of IS success (D&M 2004). All the variables were used in this paper because they are interrelated resulting in a success model which indicates that causality flows in the same
direction as the information process. Therefore omitting one or more variables will distort the results (D&M 2003). Each variable has three items which were extracted from “The DeLone and McLean Model of Information Systems Success: A Ten-Year Update” (2003). In this paper, they summarised all the variables using previous works from authors that used the model and came out with a checklist of generalised items. No remarkable drawbacks were established with the model but this does not make it a faultless model in e-service evaluation; it is the most excellent on hand.

2.3.1 Information quality
Rai et al. (2002) postulate that this variable deals with the character of the real information that is produced by the IS and the extent to which the information produced meets the expected needs of the users in terms of accuracy, reliability, relevance, completeness, precision of information etc. this work establishes the relationship between user perception and information quality based on completeness, accuracy and relevance.

\begin{itemize}
  \item Completeness (the system has all the information needed)
  \item Accuracy (information free from mistakes and near to true value)
  \item Relevance (how relevant or pertinent the information is in the context)
\end{itemize}

2.3.2 System quality
Shannon & Weaver, (1949) argues that system quality deals with the technical aspects of IS that is the ability of the system to transfer the information to the users till the user finish using the system. This study examines system quality based on the following characteristics.

\begin{itemize}
  \item Usability (can system be used without special training or awareness?)
  \item Adaptability (the ability of users changing from paper to electronic)
  \item Availability (is the system handy at all times?)
\end{itemize}

2.3.3 Service quality
D&M (2003) think service quality is any kind of support the users received from service providers. When the expectations of the users of an e-service are met in a positive way, we are in order words referring to service quality (Parasuraman et al., 1988). In this work, the attainment of Service quality shall be assessed based on these factors.

\begin{itemize}
  \item Reliability (IS is dependable)
  \item Empathy (IS has users best interest at heart)
  \item Responsiveness (IS gives prompt service to the users)
\end{itemize}

2.3.4 Intension to use-use
This is an umbrella term for all the processes carried out on a website. It determines success to an extent although it is immature to conclude more use bear more positive benefit without
considering the nature of the use D&M (2003). Rai et al. (2002) on the other hand think that use is a pre-requisite for net benefit. In this paper, it is analyzed from the following characteristics.

- Frequency of use (how often is the IS used-daily, weekly, monthly, intermittently, annually)
- Time of use (can it be used at anytime of the day 24 hours)
- Number of accesses (does it have too many access codes which are difficult to remember)

2.3.5 User satisfaction
Despite different researcher’s opinions, D&M (2003) think is the most used and most developed variable in IS success. Seddon (1997) defines it as a subjective assessment of the various consequences, evaluated on a pleasant–unpleasant continuum. It is interesting to note that this variable dependable on others and will be ascertained from the subsequent factors (D&M 2003).

- Repeated use
- Inclusivity (does the system mirror the society?)
- Likelihood to recommend to others

2.3.6 Net benefit:
This is a variable that comes at the last stage of IS evaluation to analyze how beneficial the system is to the designer, the sponsor, the user, or others. D&M (2002) added by saying that “net benefits” is the most accurate descriptor of the final success variable. In this paper it is been referred to as the benefits the users of the online tax system gain vis-à-vis paper version. It will be analysed in terms of:

- Cost savings
- Time saving
- Continuity (the benefit of positive feedback from users)

3. Methodology

3.1 Data collection and analysis
This research studies citizen’s opinions with the Swedish tax agency as case study. The empirical data was obtained from 90 adults of both sexes between ages 20-60+ who are employed and have used both paper and online tax declarations. The target group was reached through facebook, blackboard, e-mails, and face-to-face. Literature was gathered mainly from the university’s data bases and also online sources. Literature on the paper tax system was rare so face-to-face and personal experiences were used during questionnaire administration. The questionnaire circulated was pre-tested and developed using all six success variables from the D&M model which was adopted for this paper (D&M 2003)
This model was developed in 1999 and reviewed in 2003 and since then it is widely used in e-service evaluation. This model was adopted for this paper because it projects an umbrella nature that covers all aspects of e-service. Researchers have concluded that there exists a strong interrelationship between the variables. Mustansar and Zulfiqar, (2010) researched on e-tax in Sweden and found causality within the model which further explains why all six success variables were used. Significant information could be missed out or the results could be twisted since they are interrelated (D&M 2003). The operationalization of the model with regards to the electronic tax is based on D&M (2003) while for the paper tax question 24 and 27 were the main tools. Each variable generated three questions based on the summaries of the variables (D&M 2003). Many items were attributed to a single variable but only those (3) deemed important for tax evaluation were selected (the rest of the variables can be found in Appendix A). Note that the variables have diverse classification which could not be captured with only one question. All questions were closed-ended except for question 24 and 27 which aimed at capturing problems and hence giving respondents a chance to express themselves. Note that closed-ended questions limit responses and are easy to analyze statistically. Questions on profession and nationality were included to capture significant information. It is likely that non-Swedes will have problems because of language and the nature of one’s job or educational level could affect e-service usage. The deductive quantitative approach was used since it is exploratory, can capture numeric data and describe characteristics of relevant group of people (Cynthia and Barnes, 2006)

Only users who have experienced both types of declarations were allowed to respond to the questionnaire. The aim of this was to get conspicuous data which could only be extracted from experienced people. Remember perception in this paper goes with experience and allowing response from all could have produced a cloudy and foul data which could have taken much time to crackdown. The data was simplified using descriptive statistics.

Although the main focus is Örebro, keep in mind that responses could possibly come from other cities since the survey was mostly done electronically. From start the responses rate was slow but when reminder emails were resent to potential participants, the response rate increased. Face-to-face was also used to issue the questionnaires due to time factor and the need to gather more information especially with the elderly.

Following Cynthia and Barnes (2006) quantitative analysis, the following likert scales values have been applied herein. “Strongly agree” plus “agree” = “agree” and this is positive. “Strongly disagree” plus “disagree” = “disagree” and this is negative. The same procedure follows for the “likely” scales and these combinations make the pattern of positive and negative ratings more obvious for the variables. The data was summarized in descriptive statistics which brought out scores for particular values from the lowest to the highest and also in percentages. The results were interpreted and expatiated in the discussion summarizing perception. These results were later validated to justify their reliability and this was done simply by comparing the results to other similar works.
3.1 Limitation
Given that the respondents were just 90, the sample does not cover the entire population in Sweden and this is a major weakness in this paper. This was as a result of low response rate during the online questionnaire administration. Also, all cities in Sweden are equally not represented since the bulk of the research was done in Örebro but responses could have possibly come from different cities since the survey was done electronically. It is clear that much of the analysis is on the electronic system so analysis on the manual application is very limited. This is due to the lack of literature on the paper tax declaration in English. Getting responses online was very difficult since many people are only interested in using a system but not evaluating.

4. Results
Sex, age distribution and internet skills
A higher part of the respondents -23% (N=86) ranged between ages 20 and 29 years while 30-39 years made up 22% of this study. Those who ranged between 40-49 years made up 20%, 50-59 years 15%, 60-64 year 9% and above 65 year 7%. Majority of the respondents -51% (N=84) were females while 49% were males. Respondents came from 24 different countries although majorities were Swedes. Respondents were from many different walks of life both academic and practical or physical jobs, that is, bus drivers, cleaners, system developers, lecturers, researchers, doctors etc. A total of -77% (N=87) agreed they have good knowledge in internet use while 15% disagreed. The responses to frequency of usage was very encouraging as -81% (N=90) used the internet everyday, 17% used it three times a week, 3% about once a month and 1% less than once a month. These make the selected individuals likely users of the internet and e-services since they are employed and use the internet often. Those who were uncertain about their internet skills were mostly the old people or people with non-academic jobs. No vital information was recorded on sex difference but age greatly affected e-service use.

Information quality
Three questions were used to investigate the user’s perception on this variable. The questions were based on complete, up-to-date and comprehensibility of the information on the website. A total of -85% (N=89) accepted that the information was complete. Only 1% somewhat disagreed and 12% were neutral. With regards to up-to-date information, -84% (N=88) were positive about this question while there was a 1% disagreement and 12% undecided cases. In the light of comprehensibility, majority -89% (N=90) were positive while 9% were indecisive and 3% disagreed.

<table>
<thead>
<tr>
<th>Complete information Q7</th>
<th>Up-to-date information Q8</th>
<th>Comprehensible information Q9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Those who were indecisive</td>
<td>Only one person disagreed</td>
<td>All respondents answered this</td>
</tr>
</tbody>
</table>
were mostly people whose jobs are more practical or physical so they probably do not know what more was required on a website.

to this statement. 11 were neutral and most were old or people who non academic jobs.

question. Majority agreed most of which were Swedes. Those who did not agree or neutral were non Swedish nationals probably because of the language

Fig 3

System quality

Three questions were developed using characteristics of system quality in D&M model. These questions investigated system quality in terms of usability, adaptability and availability. Results showed that -84% (N=88) accepted that the application was easy to use. While 7% disagreed 8% were neutral. Adaptability on the contrary had more negative than positive perception. A total of -59% (N=88) accepted that the e-tax system feels the same like the paper version. Amongst this numbers, majority 48% accepted partially (somewhat agree) so only 11% strongly agreed. Furthermore, 23% disagreed while 16% were neutral. A total of 89% (N=88) were positive about the availability of the e-service disagreement cases amounted only to 4% while 14 were undecided. Detailed insights are presented on the following tables. Everyone who agreed in information quality also agreed in system quality. These two variables seem to be bonded

<table>
<thead>
<tr>
<th>Usability Q10</th>
<th>Adaptability Q11</th>
<th>Availability Q12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority agreed. Few times users of the internet and immigrants who have language problems thought it was difficult to use. Majority of Swedes accepted the system was easy to use with the exception of the elderly.</td>
<td>Although majority agreed, the number for disagreement was high. It was not obvious to the respondents if the electronic version was derived from the paper version. Majority of those who did not agree here were mostly the old people.</td>
<td>Few times users and visitors of the e-service will not know if it is sometimes unavailable. People with non academic jobs, those who did not use the internet regularly and the old were neutral.</td>
</tr>
</tbody>
</table>

Fig 4

Service quality

This variable was investigated in terms of security, user’s best interest and how clear the procedures are presented on the e-service. The mass of the respondents 90% (N=90) were positive about security issues. This question recorded only a 7% undecided and 3% disagreement cases. The question on empathy recorded a total of -71% (N=88) agreement cases majority 41% only agreed partially. A sum of 10% disagreed while 16% were neutral. 86% (N=90) were positive about the presentation of the navigation steps on the e-service while 10% were neutral and 3% disagreed.
Security Q13 | Empathy Q14 | Clearly presentation of navigation steps Q15
---|---|---
More people were positive about security since it did not pose a threat to them. Only three people disagreed and these were mainly those who expressed incomprehensibility to the language. | This suffered bias from the respondents because everyone wanted their needs to be accommodated. While most immigrants think their various languages should be included, the old people think they were left out. | Majority were positive with the presentation of the steps. A larger portion of these were Swedes since they have no language barrier. Respondents who did not speak or understand Swedish very well agreed partially or disagreed.

Fig 5

**Intention to use/use**

“Use” was examined in terms of frequency, time of use and access codes. According to the results, -80% (N=89) accepted that since they became aware of the e-service, they use it frequently. While only 1% was undecided 8% disagreed. A bulk of the respondents 83% (N=87) accepted that the e-service was available 24/7. Undecided cases were 11% while 3% disagreed. Access codes recorded a total of 87% (N=90) agreement while 4% disagreed and 9% were neutral.

**Frequency of use Q16** | **Time of use Q17** | **Access codes Q18**
---|---|---
Majority of the respondents accepted that they use this application to declare taxes every year. Those who rated negatively were mostly the old people. In cases of complications and enquires, frequency of use reduces. | Majority ratings on this question were positive and just 3 disagreed. This shows that the website was available most of the times. Non-regular users of the site would not tell if it was available 24/7. | Although majority rated this positively the difference between those who strongly agreed and partially agreed was very slim (4). Majority of respondents who agreed partially or disagreed were either immigrants or those with non-academic background.

Fig 6

**User satisfaction**

This IS success variable was studied in this paper from three values: repeated use, inclusivity and likelihood to recommend to other. A majority -90% (N=87) were positive about using the e-service in the future. Only 3% were undecided and 2% disagreed. With regards to likelihood a sum of -87% (N=86) would likely recommend the e-service to others. Inclusivity faced a setback as only -31% (N=89) agreed that the e-service was developed for all. A mass of 45% did not agree and 24% were undecided.
<table>
<thead>
<tr>
<th>Repeated use Q19</th>
<th>Likelihood to recommend Q20</th>
<th>Inclusivity Q21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority rated this aspect positively with the exception of 3. These are those who do not feel secure using it either because of language or other barriers.</td>
<td>None disagreed to this question, majority accepted and just 8 respondents were neutral. This shows that the probability that they would recommend to others is high</td>
<td>This question had the highest number of negative rating. Those who rated it positively were the young Swedes. Those who disagreed were either those who had problems understanding Swedish or the old people</td>
</tr>
</tbody>
</table>

Fig 7

**Net benefit**

Net benefit was researched from three categories; cost saving, time saving and continuity. Continuity was included here as a feedback option with regards to the technological aspects of the systems. That is incase the users feel some aspects of functionalities are missing from the e-application. With regards to the e-service as a cost and time saving tool, a mass of 86% (N=89) accepted that they save time by using the e-service. Only 2% disagreement was recorded and 11% neutral. On the other hand, paper declaration as a time saving tool had a contrary result. Majority 62% (N=88) disagreed to this question while only 12% agreed and 22% were neutral. Question 24 basically investigated tech technical aspect of the e-service. Majority 84% said “NO” problems have been registered while 16% said “YES”.

<table>
<thead>
<tr>
<th>Cost and time saving Q22</th>
<th>Cost and time saving Q23</th>
<th>Response as regards the problems with the system Q24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority rated this question positively. Only 2 people disagreed and 10 were neutral. Those who were neutral were mostly those who do not use the internet regularly.</td>
<td>This question has many negative ratings. This shows that it does not help in terms of time and money factor. Those who agreed to this question advanced some advantages of paper filing.</td>
<td>73 respondents agreed that the system was free from technical faults while 14 people said yes. Their reasons were summarized and they all fall under the categories of language barrier and old people which are not technical problems</td>
</tr>
</tbody>
</table>

Fig 8

Questions 25 and 26 were aimed at getting the respondents limitations in the e-service. Respondent’s ratings amounted to 87% for e-tax giving it more advantages over the paper version and 90% accepted that it has simplified tax declaration in Sweden. Consider the table below for pros and cons of both types.

**Q27 What the participants like most and least about the electronic and paper declaration (summary of respondent’s opinions)**
### Table

<table>
<thead>
<tr>
<th>Electronic declaration</th>
<th>Paper declaration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>Quicker</td>
<td>Lack of Multi-language function</td>
</tr>
<tr>
<td>Easy, less time</td>
<td></td>
</tr>
<tr>
<td>Transparent</td>
<td></td>
</tr>
<tr>
<td>Faster return</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hard for non-regular -internet users</td>
</tr>
<tr>
<td>Problematic codes</td>
<td></td>
</tr>
<tr>
<td>Lack of control over users tax affairs</td>
<td></td>
</tr>
<tr>
<td>In case of address change users can still declare</td>
<td>Declaring without understanding the implications</td>
</tr>
<tr>
<td>Reduced errors</td>
<td></td>
</tr>
</tbody>
</table>

Fig 9

### 4.1. Discussion

The objective of this paper has been to assemble the public’s perception with regards both e-tax and paper tax declaration in Sweden. Although majority of the people were positive with e-tax, some are still unwilling to collapse the paper counterpart. Respondents strongly feel that both means of declarations work in different circumstances and complement each other.

Most respondents expressed their dislike for paper tax because they think is has no net benefit. Time factor, security concerns and convenience were the most recurrent shortcomings of paper declaration. E-service users would want to complete a task in the shortest possible time especially those e-services that have no reward. E-services therefore deserve applaud for managing such problems.

It is interesting to note that the quality of information on the e-tax system is constructive (84% 85% 89% fig 3) but the codes, adaptability, lack of Multilanguage function and inclusivity pose a threat to the respondents particularly the old people. Although this paper does not sample the entire population it represents the perceptions of the citizens who have first-hand experience in both forms of tax declarations.
A bigger challenge revealed here is how to include every being, particularly the old people at the developmental phase of e-services. They represent the lowest number of respondents in this survey and did not clearly see the benefit of e-tax. They have problems with adapting from paper to electronic and this makes them stick with the traditional methods. An impulsive conclusion could be drawn on age and e-service usage which could be unaccountable. But remember adaptability does not only affect the old people or the uneducated, but also the young and educated. During the face-to-face questionnaire administration, many people declared their ignorance with the e-tax and these people could be considered potential e-tax users from first sight.

Tax filing is a sensitive (money) topic which people might not require help from friends or family except the authorities. In cases of enquiries or wrong data, the user would want to consult the office in person. Security issues did not seem to be a problem in Sweden as majority were positive. The issue of security in online transactions is plaguing e-services (Bailing Liu et al., 2010) but this study proves contrary. Insecurity cases emanated as a result of language hurdles which have devastating consequences.

The D&M IS success model was quite valid for in evaluating user perceptions. Information quality and system quality portrayed a link-up. That is, positive perception in information quality influenced system quality. Net benefit on the other hand is more appropriate when evaluating e-services from organizations perspective. This is so because users do not clearly see benefit in using e-services. They feel it benefits organizations more since they have less work on their desks.

In line with Lars Abinssons et al. (2006) characteristics of e-service maturity, the tax agency website has fulfilled the stages information, interaction, transaction and integration. Despite the fact that the e-tax system has so far achieved its goals, there are still adjustments to be made especially with the language issue. The authorities have to introduce some sort of benefit (financially, deductions) for those who file online and this will increase the number of e-tax users and gradually the paper version will become obsolete. Contrarily, paper work becoming obsolete could also pose a threat to people with no regular internet access or the old people. Hence the strategy to reduce paper declaration to bare minimum is a prolific ground in e-service research.

4.2 Assessing the validity of the findings

Because the response rate for this research was relatively small (90), the potential of being unfair must be admitted. This was overcome by the paper questionnaires distributed which was accompanied by short conversions. Information gathered from the conversations was compared to those received electronically and no inconsistencies were found. The results were further compared to a slightly similar study in Sweden (Mustansar and Zulfiqar 2010). Similarities in the results were found between both research papers. The fact the e-tax system is matured and has made progress, the variables have high success levels, and security does
not pose a threat to e-services in Sweden are some of the similarities established. No significant discrepancies were recorded with regards to old people and e-tax neither with the lack of Multilanguage functions in their paper. These differences could be as a result of the different questions coined in both research but Lars Albinsson et al. (2006) evaluated 335 e-services in Sweden and also asserted that the issue of old people and e-services is still vague.

4.3 Conclusion and recommendation

General conclusion drawn here indicates that Sweden has made big progress with e-government the internet and e-services in particular. The number of people who declare taxes online increase annually (fig 1). In 2010, 4284665 out of 7 388 461 million people used the e-tax system and an increase should be documented in 2011. The overall responses analyzed in this survey show that the electronic tax system is Sweden has succeed to a larger extent indicative of the fact that much progress has been made over time. Generally, all the six variables registered a higher success level although system quality was slightly lower because of language problems. Despite the fact that e-services are somewhat new and still facing rebuff from the public, the respondents think they are the quickest and most convenient methods to execute actions which have been voiced as drawbacks to the paper version. While the old people, people with non-academic jobs, and the uneducated are adapted to the paper versions, the reverse is true for the young and educated. Given that e-services are integrated over time, citizen’s perceptions equally need time to change. To bring to a close, while researchers are thinking on how to get the old people to use e-services, they should equally think on how to capture the uneducated. Until then both electronic and paper tax declarations will complement each other.

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Appendix A

Variables description

Information quality

According to D&M (2003), information quality has a strong relationship with system use and net benefits. While Seddon (1997) thinks this variable is very vital for IS evaluation and deals with the excellence or value of the e-service information provided to the users, Rai et al. (2002) think information quality deals with the content, correctness and the arrangement of the information. Below are more dimensions to be considered.

- Consistency (uniformity between different parts to ease understanding)
- Security (protection of user information from unauthorized access)
- Personalization (using technology to accommodate differences)
- Timeliness (up-to-date and quick availability of the information)

System quality

Many researchers including D&M have pointed out that system quality is an important success variable of user satisfaction. It looks at the quality of the system. According to McKinney, Yoon and Zahedi (2002), website information and system quality are the key factors of Web customer satisfaction. They defined system quality relative to site success as the customers’ perception of a Web site’s performance in information retrieval and delivery. Besides those already mentioned, some other characteristics of system quality include:

- Functionality (the system serving the purpose)
- Flexibility (able to make changes easily)
• Portability (are codes easy to manage and moved around)
• Integration (does the electronic version feel same like the paper versions?)
• Reliability (can users rely on the systems)
• Response time (the time a system or functional unit takes to react to a given input)

Service quality

According to Pitt et al. (1995), and other researchers, all the other variables measurement focus more on the product and forget the services of the IS function which could lead to wrong measurement of the IS service quality. D&M use the following constructs to measure service quality.

• Reliability (IS is dependable)
• Responsiveness (IS gives prompt service to the users)
• Empathy (IS has users best interest at heart)

Intention to use-use

Seddon’s (1997) argue that system use takes place when the users think that system will enhance their job performance.

Hence the nature, extent, quality and appropriateness of the system under use must be taken into consideration (D&M 2003). For example an e-service could be used often without the full functionality of the system been put to use or the intended purpose of the system. In this way the system is been used for the wrong purpose and hence negative impact. It can be measured in terms of: (D&M 2003)

• Nature of use (do you use IS for the right purpose)

User satisfaction

In the models above we can see that “use” and “user satisfaction” seem to have a close relationship. D&M (2003) stated that “Use” must precede “user satisfaction” in a process sense, but positive experience with “use” will lead to greater “user satisfaction” in a causal sense. Similarly, increased “user satisfaction” will lead to increased “intention to use,” and thus “use.” Hence user satisfaction is the measure of how satisfied the users of an IS are and can measure the quality of the website indirectly. The characteristics of user satisfaction (D&M 2003) are shown below.

• Repeated visits
• User surveys (does the system have a survey or feedback option?)
Net benefit

This variable was introduced in 2003 in the updated D&M model. It is possible to have different definitions for “net benefit” but this work examines net benefit from the user’s perspective. The importance of this variable lies in the idea that it can capture the customer’s opinions both negative and positive. The ideas of e-services as money and time saving tools are some of the concepts related to net benefit. Note that this variable is dependent on “system quality” and “information quality”. In IS, net benefit can be analyzed using amongst other parameters such as positive and negative impacts on the users.

Appendix B

Questionnaire

1. What is your gender? male/female?
2. What is your age group?
   20-29 years, 30-39 years, 40-49 years, 50-59 years, 60-64 years, Above 65
3. What is your nationality
4. What is your profession
5. I have good knowledge of the internet.
   Strongly Disagree Somewhat Disagree Undecided Somewhat Agree Strongly Agree
6. How often do you use the internet?
   - Almost never, few times in life
   - Less than once a month
   - About once a month
   - About twice a month
   - About once a week
   - About 3 times a week
   - Almost every day

The following section is about tax declaration in Sweden. Given that you have lived in Sweden and have worked and declared in taxes, it will be good if you can provide us your honest feedback. Remember your responses to this survey are important.

Please check the option that indicates your level of agreement with these statements.

Information quality

7. The Skattverket’s electronic tax application has complete information
   Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree
8. the information on electronic tax declaration is up-to-date  
   Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

9. the information on electronic tax declaration is easy to comprehend  
   Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

**System quality**

10. The Skattverket’s electronic tax application is easy to use  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

11. The Skattverket’s electronic tax application feels same like the paper version  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

12. The Skattverket’s electronic application is available at all times.  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

**Service quality**

13. I feel secure using the electronic tax declaration  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

14. This system was designed with the user’s best interest at heart  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

15. The steps on electronic tax application are clearly written  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

**Intension to use-use**

16. I use the application every year since I knew about it to declare in my taxes  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

17. This application is available for use all the time that is seven days a week and 24 hours a day (24/7).  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree

18. The access codes and the codes acquisition processes are easy to manage.  
    Strongly disagree  Somewhat disagree  Undecided  Somewhat agree  Strongly agree


**User satisfaction**

19. How likely are you to use the online tax system again in the future?
   Extremely unlikely, unlikely Neutral likely Extremely likely

20. How likely are you to recommend the online tax system to a friend, colleague or family member?
   Definitely Probably Not sure Probably not Definitely no

21. The electronic tax declaration system was developed for all categories of persons.
   Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

**Net benefits**

22. Electronic tax declaration helps me save time and money.
   Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

23. Paper tax declaration helps me save time and money.
   Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

24. The electronic tax declaration application in Sweden still has some problems.
   Yes No If yes to this question, name one problem and how you think it can be solved.

**Personal opinions**

25. The online tax declaration has more advantages than the paper tax declaration.
   Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

26. The online tax declaration has simplified tax declaration in Sweden
   Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

27. What do you like most and least about both online and paper tax declarations?
   Online most least
   Paper most least