Investigating the behaviour intention to use e-health services by Swedish Immigrants

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Abstract:

The aim of the current study is to investigate the barriers to the behaviour intention of Swedish immigrants to use e-health services. Sweden is experiencing an increase in immigration population and managing their health issues is crucial. Knowing the barriers in the behaviour intention of people towards the use of e-health services is crucial to health care providers. There is need to investigate what are the barrier Swedish immigrants face while using e-health services. UTAUT model is deployed as a conceptual guideline and is used for data collection purpose. In-depth conversational interviews of twelve Swedish immigrants from Karolinska Universitetssjukhuset (Huddinge), Stockholm were conducted aged between 21-45 years with varying backgrounds in education and cultures. Immigrants were asked twelve interview questions. Three e-health services were selected from the Vårdguiden.se. Data was analysed by finding themes and pattern.

Performance expectancy, effort expectancy and social influence found not to be barriers to the behaviour intention of the Swedish immigrants but social influence found to be the barrier affecting the behaviour intention of some of the female immigrants. Facilitating condition have direct impact on the use behaviour of the immigrants because.

Keywords: e-health services, UTAUT model, Vårdguiden
1. Introduction and Background:

E-health is the use of information and communication technologies especially the internet to improve or enable health care (Elizabeth et al., 2008). It promises to improve access to health care support, increase revenue, reduce costs and improve the quality of patients. During the 1930s and 1940s, the indicators of foreign-born people in Sweden began to raise gradually mainly the refugees after the World War (WW2). However, this trend is not stopped and still in recent years there has been tremendous increase of immigrants towards Sweden especially from the war-ridden countries such as Iraq, Syria and Somalia (Migrationsverket, 2014).

Swedish country councils are responsible for the provision of health services to a greater extent which indicates a decentralized health care system (Acheampong, 2010). The Swedish e-health strategy (2006) explains that country councils are required to provide health and medical services to all people irrespective of their age, culture and background. In order to deliver the best possible delivery of health care services, the use of ICTs in the National E-health strategy has been recognized as a strategic tool in order to promote efficient, safer and more accessible health care in Sweden.

1.1 Problem:

Immigrants arriving in Sweden are more susceptible to many health diseases such as diabetes, allergic diseases, and hepatitis B, C and HIV etc. (Rechel et al., 2011). Managing the health care of documented Swedish immigrants is an alarming situation because people with foreign origins have been reported with worst health issues than of native-origin Swedes (Anders, 2009). Documented immigrants are those immigrants who are dependent on Swedish law and have legal right to health services and have legal status in Sweden. There have been many barriers immigrants face in the use of health services and these could be lack of proper education, language and communication skills, cultural differences. These could be the barriers among Swedish immigrants since most of the immigrants belong to developing countries where education is very low (Akhavan, 2006). Healthcare is the largest service industry in Sweden and it still lags behind when it comes to leveraging ICTs (Jung et al., 2010). Löfstedt (2007) found that public health-care providers in Sweden believe that people lack of interest in using e-health services. Limited Language skill is a barrier hampering immigrants to accessing health services (Kluge et al., 2012). Since education also plays an important role in deploying e-health services as it is a strength factor in assessing and implementing e-health effectively (Arief et al., 2009).

In the light of the health issues of Swedish immigrants, it is crucial to investigate what barriers they face while using e-health services. In order to investigate what barriers Swedish immigrant face, it is necessary to investigate their behaviour intention (BI) through which it could be possible to find out the prospective barriers. Consequently, it is of specific interest that BI of the Swedish immigrants should be researched from the immigrants’ perspective because the previous studies done from the perspective of elderly citizen in Sweden (Loria et al., 2010).

As the aim of this study is to investigate the barriers towards the use of e-health services and this can be done by investigating the BI of the Swedish immigrants. BI, in contrast, can be studied by exploring the each construct of UTAUT model and we explore each construct by asking immigrants views and opinions on each e-health service. Investigating the barriers in the BI of people such as immigrants toward the use of e-health services is crucial to health care providers in Sweden (Jung, 2008). There is a need to investigate the factors that influence the BI of the users towards the use of e-health services which is crucial for health care providers (Vimarlund et al., 2005).
2. Literature review:

(BI) refers to the intention of an end-user to make use of a new technology or system; when the intended system is ready to use then it is appropriate to investigate BI of the intended users towards the use of a technology (e-health) (Jung, 2008). There are some factors which determine BI of the intended users and these could be the main constructs (factors) such as performance expectancy (PE), effort expectancy (EEx), social influence (SI), facilitating conditions (FCs) and some other external factors such as gender, age and experience etc. (Thomas et al., 2013). There is another study which explains that PE found to have a strong effect on the BI, whereas SI has indirect effect on BI (Phichitchaisopa et al., 2013).

Immigrants face multiple barriers which affect their BI to accessing and using e-health services and these barriers include: language skills insufficiency, knowledge deficiencies and cultural differences or isolations (Awad et al., 2014). Language barriers limit access to use health services. In health care, limited language proficiency can be a serious barrier for immigrants. If patients know they have difficulty in their medical issues or needs to a doctor or nurse, they are less willing to use e-health system. A recent study in Germany shows that immigrants face several barriers to accessing German e-health services such as inability to understand proper language skills, cultural and social barriers (Khan et al., 2013). Education and cultural barriers are also the factors hindering immigrants to use e-health services electronic health services. Immigrant’s population facing cultural and educational barriers feel reluctant in using health services and becomes ignorant about the benefits of given health services. In Canada, the most cited barriers immigrants faced which prevented them accessing the health services were language and limited education (Zanchetta et al., 2006).

Immigrants in Sweden experience poor health compared with native Swedes and it could be due to the fact that immigrants face many barriers to use health care services in Sweden. The common barriers faced by the Swedish immigrants found to be language barriers, cultural differences and low level of education (Akhvan, 2006). One study shows that female immigrants face more difficulties in seeking and using health care services due to the factors (e.g level of education and language skills) influencing their BI (Akhvan, 2006).

2.1 Research Question:

What are the barriers in the behaviour intention of Swedish immigrants when they use Swedish e-health services?

2.2 Limitation:

The study is conducted in Stockholm, the capital city of Sweden, which deals with a few samples of the immigrants. The results of the selected immigrants do not reflect the intention behaviour of the whole immigrant population. The findings of this study should not be considered to be generalized on the rest of the immigrants; as results could be different on different generation groups. Furthermore, future work can be done to explore the barriers to use e-health services for broader group Swedish immigrants from different cities.
3. Conceptual Framework:

Research model: User Behaviour Intention Model:

![Diagram of User Behaviour Intention Model]

Before a new technology is used it is necessary to investigate the behavior intention of the potential users. The method that is widely used is the UTAUT model which has earlier been used to acknowledge the factors that have an effect on BI of potential users (Boontarig et al., 2012). Researchers have long been interested in investigating the models that have power in predicting the BI (Venkatesh et al, 2003). To investigate the BI of Swedish immigrants, the current study proposes an application of the UTAUT model (The Unified Theory of Acceptance and Use of Technology) by Venkatesh et al. (2003). This model has been integrated into many models such as Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), and Theory of Reasoned Action (TRA) etc.). In order to investigate BI, UTAUT model is developed to present an integrated view of user acceptance and usage of new technology (Venkatsh, 2003).

UTAUT model is powerful in a sense that this model was formulated based on eight prominent technology acceptance models such as TAM (Devis, 1989), TRA (Fishbein and Ajzen, 1975), TPB. The incorporation of the eight models led it to a better prediction of BI towards the use of new technology than the individual models themselves. The model is able to account for 70 per cent of the variance in usage intention which is an improvement over other models (Venkatesh et al, 2003). In previous studies in the area of e-health, it has already been used to investigate individual’s acceptance of e-health services and found to be useful when to predict users’ BI in the area of e-health (Nuq, 2012). As the purpose of this study is to investigate barriers in the BI to use e-health services so this model is suitable in the context of this study. Consequently, in order to answer the research question, it is necessary to investigate the BI of Swedish immigrants through the UTAUT model. This model will ultimately help to identify the potential barriers since the model has already been used to predict the barriers in the BI to use e-health services (Boontarig et al., 2012).

UTAUT model consists of four key constructs (factors) namely; performance expectancy (PE), effort expectancy (EEx), social influence (SI) and facilitating conditions (FCs) and all affect intention to use services. The model also have four core variables such as gender, voluntariness, age and gender which moderate the key relationships in the model (Venkatesh et al, 2003). One core
variable (Voluntariness has not been taken into consideration in the current model. There are two reasons for not including Voluntariness in the model described above. First, voluntariness is originally developed in for the context of system adoption by employees in an organization since it is not applied to the citizen service context (Jung, 2008). The focus of our study is on the immigrants as consumers of Swedish e-health services not as employees of an organization. The second reason is that citizens may use traditional health care services instead of using e-health services which make voluntariness irrelevant in the context of this study since the current study considers e-health services. The following are the main constructs of the model described as follow:

3.1 **Performance Expectancy**: (PE) is defined as the degree to which an individual believes that using information and communication technology (ICT) will to attain gains in job performance (Venkatesh et al, 2003). In the context of healthcare, PE is significant in technology acceptance and may influence users’ BI (Nuq, 2012). In the context of this study, PE is the degree to which immigrants feel that using e-health services on Vårdguiden will be advantageous to them and enhance their job performance and help them have a better life. Therefore, PE has been found to be a stronger predictor of intention to use (Davis, Warshaw Paul and Bagozzi, 1989; Venkatesh et al, 2003).

3.2 **Effort Expectancy**: It is described as the degree of ease associated with the use of the actual system (Venkatesh et al, 2003). In the context of this study, EE is the degree to which immigrants are comfortable with the GUI (graphical user interface) of Vårdguiden; they can access e-health services easily. EE has been proved to be fundamental key factor in predicting BI in e-health services in the developed countries such as Australia (Schepprs et al., 2006).

3.3 **Social Influence**: Social Influence (SI) is the degree to which an individual perceives the opinions of others whether he or she should use the new technology (Venkatash et al., 2003). These influencing sources could be friends, relatives and seniors (Wong & Hiew, 2005). In the context of this study, immigrants mostly live in communities so they can be influenced by them in the use of e-health services for a healthier life. So it can be concluded that SI may directly or indirectly affect BI in the use of e-health services.

3.4 **Facilitating Conditions**: In Venkatesh et al.,(2003, p.453), organizational facilitating conditions (FC) are defined as the “degree to which an individual believes that an organizational and technical infrastructure exist to support the use of a system”. FC is an important factor in the UTAUT model in predicting use behaviour (Venkatesh et al., 2003).

3.5 **Demographic factors**: Demographic characteristics such as age, gender and level of education have a positive effect on users’ attitudes towards the acceptance of new technology. Technology acceptance literature suggests a strong bond between age and the acceptance of new technologies (Doungratana and Sattabusaya, 2007).

3.6 **Behaviour intention to use**: Intention is a significant factor in the acceptance of technology and many authors (Devis et al., 1989; Fishbein and Ajzen, 1975) have highlighted the importance of attitude in their studies.

4. **Method**

4.1 **Vårdguiden**:

This study examines three e-health services offered by Vårdguiden. It is a venture of Stockholm
Country Council which aims at providing health-related services on its website (Westelius et al., 2006). The three e-services selected are the most common and widely used in all health care centres in Sweden. For instance, 90% of prescriptions in Sweden are e-prescriptions and Sweden leads in the world when it comes to the widespread use of e-prescription (Lars et al., 2012). However, a majority of the health care services in Stockholm now use e-prescription. The other two services such as ask-the-doctor and online health guide are also commonly used and readily available to citizens in Sweden today (Jung, 2008). The three e-health services selected are as follows:

4.2 Ask-the-doctor: This service provides people many advantages, for example: what medicine people need, what illness you have had and what precautions you can have etc. Citizens can ask the doctor many questions related to their health or even they can even cancel their visit.

4.3 e-Prescriptions: This service is used for recommending, providing and distributing medicines. It is efficient, secure and accessible everywhere in pharmacies in Sweden, saving time and hassle free service. It provides many benefits such as security, efficient delivery of personal data, and saving time and avoids long ques. It is accessible anytime and anywhere. Patients can renew e-prescription without personal meeting with their doctors. It also reduces the work load of health care services operators.

4.4 e-health guide: An online guideline where citizens can get health related information on the website of Vårdguiden. There are a plenty of health topics for general people too. UTAUT model (figure. 1) is used as a conceptual guideline for data collection and the interviewees were interviewed about their opinions, views and attitude towards the barriers they face during the use of these three e-health services offered by (www.1177.se).

5. Data Collection:

The method chosen for this study is interviews. The primary data were collected through interviews, the sample size (n=12) of this study and this is a convenience sampling space (Qates, 2006). Interviews are useful method to collect the relevant data directly from respondents due to its validity and relation to research problem and purpose (Yin, 2008).

A qualitative approach (interviews) is chosen to obtain a deeper understanding of the views and perceptions of the Swedish immigrants on the use of three services in order to find out the barriers in the BI to use the services. Based on the nature of the research question, interviews were considered to be the best method, with all the immigrants being asked the same questions. Qualitative approach (interviews) is suitable in case of determining views and perceptions that underlie and influence behavior of people (Yin, 2008). Qualitative approach is also recommended when conducting interviews in the field of e-health as many studies have already deployed this approach (Ventres et al., 2006). This approach is also suitable in this study as it directly related to our research problem in a sense that this study is intended to investigate the BI by exploring the views and perceptions of the Swedish immigrants. This approach is also a best option in this study because the results of this study are not intended to be produced numerically as it is the case in quantitative approach. Qualitative research or approach is directly related to our research problem because our research is not expected to drive conclusions from static measure instead the results and conclusion of this study are based on the real information gathered through the interviews.

Twelve immigrants (6 women and 6 men), ranging from 21–45, were interviewed individually for 15 to 20 minutes at Karolinska Universitetssjukhuset (Huddinge), Stockholm. The interviews were conducted in two different working days on 10th & 13th of March, 2014. The interviewees are the residents of the county of Stockholm and they were contacted in Karolinska Universitetssjukhuset (Huddinge). Huddinge is the place of high prevalence of immigrants (Helena, 2008) and it was easy to contact immigrants there. They were from different cultures which help the author in getting a
diverse sample. The main reasons of the selection of the immigrants in this study is that only senior citizens in the previous study in Sweden was targeted in the field of e-health and the other reason was that immigrants are more susceptible to health diseases than native swedes.

The interviewees were contacted by using intercept technique and the willing immigrants were requested for interviews. The intercept technique is normally used to get responses from target audience (Oates, 2008). Before conducting the interviews, the purpose and the reason for the interview explained to the interviewees beforehand. While conducting interview the note-taking and recording were used to save their views and opinions (Marshall and Rossman, 2006). Interviews were semi-structured meaning that an interview guide was developed to make sure that no questions omitted and the author let the interviewees talk openly on every question (Oates, 2008). Anonymity regarding the disclosure of their names in the study was promised to be privileged (Marshall and Rossman, 2006) as some immigrants asked not to disclose their personal data.

Interview questions were designed on the basis of the research question. Most of the questions asked were about the e-health services. The questions designed in such a way so that we can extract and relate valuable themes against each construct of the UTAUT model. It was observed from the answers which themes relate to which construct. For this purpose we keep in mind the definition of each construct which help us to relate the right themes to the right construct. After putting all the themes in against each construct we came to this point that which construct is positively or negatively related to the BI as it is evident from the UTAUT model that each construct measures BI (see fig1). For instance, Q3 was designed to explore the immigrants views on the usefulness of ask-the-doctor and online guide health services. As per the definition of performance expectancy, themes derived from the immigrants’ statements regarding the usefulness should be related to the construct of PE. Likewise in Q7, immigrants were inquired to express their thoughts on the ease of use of e-health services on vårdguiden. The valuable themes regarding the eas of use were picked up and put in the category of effort expectancy because EEx only deals with the ease of use concept. Hence the rest of the questions were asked and themes were mapped to the right construct. After arranging all the themes, we were able to draw a conclusion which construct affects the BI of the swedish immigrants and this is this the aim of our study.

6. Data Analysis:

In order to be able to answer the research question, textual data derived from the interviews refined by using data matrix technique (Marshall and Rossman, 2006). While analysing the data the authors observed that the interviewees’ responses having a direct relationship to the four constructs of UTAUT model could fit better against each construct. For this purpose, we thoroughly observed the data and tried to find out the most important and relevant themes which lie under the definition of each construct. For example, when we observed the responses of the interviewees we found that some immigrants answered that e-health services such as online guide and ask-the-doctor services (see table2) helped them attain their job easily for instance searching for the health related information quickly. So we came up with this idea that these two services could relate to (PE) as per its definition. That is the reason how we related the relevant themes against the construct of PE. On the other hand, we also matched some themes having a direct relationship with EEx which describes the ease of use (e.g usability) of the services as per its definition. We found that e-prescription and Vårdguiden helped the immigrants to perform their task easily without any effort (see table2). Hence, we selected the themes regarding the ease of use of the e-prescription and Vårdguiden and matched them against the construct of EEx. Hence the rest of the themes under the categories of social influence and facilitating conditions were derived by using the same concept.

More than twenty themes were created against four constructs of UTAUT model (Table 2). An effort was done not to overlap themes to the rest of the constructs of UTAUT to produce better
output of the results. New themes were created in order to present the results in a better way and avoid overlapping among the created themes. The analysis by identifying themes and patterns and correlation within the data, is presented in Table 2. To ensure reliability and validity, interviews were recorded safely so our interpretation and interviewees’ statements could not be mismatched and we could be able to produce synchronized results. For validity, a copy of the study was emailed to the interviewees to ensure that the study was supposed to what was promised to be searched on.

7. Results & Discussion:

The results are presented in two tables for the purpose of analysis. In the first table the characteristics of the immigrants are presented and in the table 2, the pure interpreted data extracted from written and recorded transcripts of the interviews are presented in the form of data matrix. The interpreted data collected during the interviews process are categorized into valuable themes identified from the interviewees´ statements. In the constructs column, the five construct of UTAUT model are presented and in the second column, relevant group of themes against each construct are presented and the rest of column is where each interview’s response is marked with a notation sign (x).

Table 1: Characteristics of Swedish Immigrants:

Table.1 provides an overview of the Swedish immigrants´ characteristics such as age, education etc.

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Gender</th>
<th>Age(range)</th>
<th>Education</th>
<th>Internet acess and experience</th>
<th>Knowledge or Experience of using e-health services on vårdguiden</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>31-35</td>
<td>Graduate</td>
<td>Yes, High</td>
<td>Good knowledge and experience using e-health service</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>31-35</td>
<td>High school</td>
<td>Yes, Good</td>
<td>medium level of knowledge</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>26-30</td>
<td>Bachelor of IT</td>
<td>Yes, Average</td>
<td>Good knowledge, online search for e-health services</td>
</tr>
<tr>
<td>4</td>
<td>Female</td>
<td>36-40</td>
<td>High school</td>
<td>Yes, less</td>
<td>little knowledge, less experience of the use of Vårdguiden</td>
</tr>
<tr>
<td>5</td>
<td>Female</td>
<td>21-25</td>
<td>Basic Education</td>
<td>Yes, Low</td>
<td>little knowledge of using vårdguide</td>
</tr>
<tr>
<td>6</td>
<td>Male</td>
<td>15-20</td>
<td>High school</td>
<td>Yes, Average</td>
<td>Some knowledge of using e-health services</td>
</tr>
<tr>
<td>7</td>
<td>Female</td>
<td>21-25</td>
<td>Basic</td>
<td>Yes, Low</td>
<td>A little knowledge of e-health services</td>
</tr>
<tr>
<td>8</td>
<td>Female</td>
<td>36-40</td>
<td>Basic</td>
<td>Yes, Low</td>
<td>Little knowledge, less experience with Vårdguiden</td>
</tr>
<tr>
<td>9</td>
<td>Female</td>
<td>26-30</td>
<td>Basic</td>
<td>Yes, Normal</td>
<td>Low level of knowledge</td>
</tr>
<tr>
<td>10</td>
<td>Female</td>
<td>Less than 40</td>
<td>High school</td>
<td>Yes, Low</td>
<td>Less knowledge, less experience of using Vårdguide</td>
</tr>
<tr>
<td>11</td>
<td>Male</td>
<td>21-25</td>
<td>Graduate</td>
<td>Yes, Good</td>
<td>Good knowledge, extensive use of e-health services</td>
</tr>
<tr>
<td>12</td>
<td>Male</td>
<td>21-25</td>
<td>High school</td>
<td>Yes, Medium</td>
<td>Some kind of knowledge and</td>
</tr>
</tbody>
</table>
The results from table.1 show that the accessibility of the internet was not found to be a barrier towards the use of e-health services. All the immigrants have internet accessibility and coverage at their premises. The experience of using internet among some female immigrants found to be major barrier towards the use of e-health services (Keong et al., 2012).

Less experience of internet usage and computer (Poureslami et al., 2006) prevent women from using e-health services which could result in unawareness about the Swedish e-health services. In comparison to native females in Sweden, the use of internet among female’s internet users on e-health-related information is higher than men (Findhal, 2010).

Table 2: Data matrix for the analysis of the important themes grouped against each construct of UTAUT model:

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Themes</th>
<th>Interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Expectancy (PE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e-health services are useful in my job</td>
<td>x x x</td>
<td>x</td>
</tr>
<tr>
<td>e-health services enables to accomplish the tasks quickly</td>
<td>x x x</td>
<td>x</td>
</tr>
<tr>
<td>Online health guide is useful whenever I search for up-to-date health care information</td>
<td>x x x</td>
<td>x x x</td>
</tr>
<tr>
<td>Feel secured on the Vårdguiden during the use of e-health services</td>
<td>x x x</td>
<td>x x x</td>
</tr>
<tr>
<td>e-prescription is easy and useful</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Vårdguiden as a trusted platform</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>preferring to contact the doctor on the telephone</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>I would contact my doctor in case of severe illness</td>
<td>x x x</td>
<td>x x x</td>
</tr>
<tr>
<td>Effort Expectancy (EE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask-the-doctor service is not useful as it can not be replaced with a physical doctor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No issue on my privacy and personal data</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>My interaction with the Vårdguiden is clear and understandable</td>
<td>x</td>
<td>x x</td>
</tr>
<tr>
<td>It would be easy to become skillful in using the e-health services on Vårdguiden</td>
<td>x x</td>
<td>x x</td>
</tr>
<tr>
<td>Learning to use e-health services on</td>
<td>x x</td>
<td>x x</td>
</tr>
</tbody>
</table>
Now from table 2, results are presented in the form of uncovered themes against each construct of the model in order to investigate which constructs (factors) of the model are positively or negatively linked to the BI of the Swedish immigrants.
7.1 Performance Expectancy:

Against the PE in table 2, ten themes have been discovered in order to understand the behavior intention of immigrants during their use of the three e-health services. Both male and female immigrants seemed to be satisfied with the security and privacy concerns while using e-health services on Vårdguiden. As one of the interviewee expressed that:

“I have never any issue when it is asked for my Swedish personal number while accessing these e-health services and I have given it many times whenever needed. However, I am confident that my personal information will not be disclosed because Vårdguiden has guaranteed for privacy and confidentiality for users.”

Privacy and security issues were also questioned regarding the use of e-prescriptions. Majority of the interviewees expressed no concerns as one of the interviewee said:

“Whenever I needed to renew my prescription, I did not have any privacy or security concern in using e-prescription.”

National e-prescription allows citizens in Sweden a secure and confidential data. For this purpose, prescriptions are sent electronically by a doctor through a secure national network called Sjunet. Sweden is a world leader in e-prescriptions and almost all prescriptions are electronically available in all the country councils (Lars et al., 2012). Further discussion revealed that immigrants have trust on the health care providers and the country council.

Regarding the usefulness of e-health services, majority of the immigrants found no obstacle except using the ‘Ask-the-doctor’ service where they prefer face-to-face interaction with doctors with the help of an interpreter. They felt that they could better explain during a physical meeting with their doctors with the help of an interpreter. A linear communication between patients and doctors can solve many unsolved health issues (Schepprs et al., 2006). The reason of taking the service of the interpreter could be a cultural difference and language and skills. The availability of the interpreters for particular languages in primary health care centres in Sweden is an issue (Wiking, 2012) which could prevent the immigrant’s population to use the available health services. Regarding the usefulness of e-health guide, in eight out of twelve immigrants, the respondents picked the online health guide as the service they are most likely to use whereas ask-the-doctor service is least likely to use. However, immigrants declared the online health guide as a useful service as they told later that they can search for plenty of topics on health issues in different languages. The one interviewee stated:

“I am fond of searching for information on health issues, curious of knowing how to recover from diseases. It is a convenient and fast method of accessing and reading health information online. It is easy for me to understand the health topics written in my mother language…….”

Ask-the-doctor and e-prescription services are only available in the Swedish language whereas the e-health guide can be accessed in different languages. The online guide consists of health related information on diseases, symptoms and treatments and the information is available in different languages. People are advised and tipped on how to cure of different diseases. Though female immigrants also expressed positive signs regarding the usefulness and advantages of e-health services but male immigrants responded more positively on the ease-of-use of e-health services than the female immigrants.
From the above discussion it is stated that PE has directly affected the BI of the Swedish immigrants since the majority of the immigrants perceive that the three e-health services were easy to use and found them useful except ask-the-doctor service which some female immigrants emphasized it less useful because they prefer to contact a doctor through a physical meeting. The influence of the PE on BI is moderated by gender since majority of the male and female immigrants found e-prescription useful. Some female immigrants and majority of the male immigrants found the online health guide useful. It can be inferred that the relationship between PE and BI is stronger. However, it can be concluded that PE is not a barrier to the BI of the majority of the immigrants to use the e-health services.

7.2 Effort Expectancy:

Regarding the ‘Effort Expectancy’, interviewees were asked about their experience regarding the ease of use of Vårdguiden as a platform and how easily they use e-health services on it. A total of six themes emerged where both male and female immigrants seemed to be more optimistic with the use of Vårdguiden in accessing and using the e-health services. Majority of the male and female immigrants found Vårdguiden an easy and understandable platform for the e-health. Regarding the ease of use of Vårdguiden, one of the interviewees stated that:

“If what I am searching for is easy to find and if I have to renew a prescription he does not think it would be difficult task to learn how to do on Vårdguiden.”

The Vårdguiden is a well-organized website providing information and guidelines regarding how to contact primary care units and hospitals and built-in system is also integrated in the website regarding the help on how to use Vårdguiden (Westelius et al., 2006). Many of additional features such as renewals or booking appointment are also available. However, ease of use regarding the use and accessing the services was not an issue because none of the immigrants thought that Vårdguiden was a difficult platform to use for the e-health services. Though some of the female have less knowledge or experience of using Internet had worried that they would have difficulty in using the services but once they were taught on how to visit Vårdguiden and how to click through the services, even those who were reluctant and had less experience of using Internet seemed confident and showed their interest to improve their ability to use the e-health services on Vårdguiden. However, both male and female immigrants found Vårdguiden as a useful and interactive platform which is effortless to use when using the three e-health services.

From the above discussion it is concluded that EEx have also directly influenced the BI of the immigrants since both male and female immigrants found Vårdguiden as easy-to-use platform requiring no effort or experience while using the e-health services. The influence of the EEx on BI is moderated by experience since majority of the male immigrants have already good knowledge of using the e-health services on Vårdguiden so it was easy for them to be skillful while using e-health services. It can be inferred that EEx has a strong relationship with BI. Finally it can be concluded that EEx directly affects the BI of immigrants. Hence, EEx is not a barrier to the BI of the immigrants.

7.3 Social Influence:

The construct about the `Social Influence` has identified four themes in total. The majority of the male immigrants reported that their colleagues and relatives etc. are not the convincing factors pushing them to use health services electronically. On the other hand, the majority of the female immigrants were totally agreed that their relatives or friends are the convincing factors driving them to use the e-health services which indicate that female immigrants tend to be more optimistic to others’ opinions and therefore find SI to be more important than most of their male counterparts. The reason is that some females have basic education and low level of experience of Internet.
However, it is an interesting conclusion that SI is a not a significant indicator of BI for majority of the male immigrants and this is because most of the male immigrants have good level of education, previous knowledge of experience of using the services on Vårdguiden (see table.1). On the other hand SI found to be a non-significant indicator affecting the BI of the female immigrants. The reason of this is that some female have basic education and little experience with Internet use as it is evident from table1. It can also be inferred that the influence of SI on BI is moderated by experience of the Internet and education of the male and female immigrants. However, it can be concluded that SI is not a barrier to BI to use the e-health services for majority of the male immigrants but for some female immigrants.

### 7.4 Facilitating conditions:

Regarding the facilitating conditions, five themes were uncovered. The interviewees expressed that they have proper internet accessibility to use and access the e-health services on Vårdguidens website as one interviewee explained that:

“I have proper internet connection and high speed broadband connection at home. I use the Internet as a source of bridge to connect with Vårdguidens in order to access e-health services related to my health.”

Sweden is today a leading IT nation in terms of access to broadband and use of the Internet in the society and more than eighty percent population have access to the Internet at home (Torstensson, n/). Sweden is one of the top countries in EU with highest rates of Internet coverage (Statistics Sweden, 2013). The majority of the Internet users today use a connection with a speed of one mega bit per second (1Mbps) and the electronic services that are offered to people are adapted to this speed.

Both male and female immigrants reported they did not have any issue regarding the use of e-health services on Vårdguiden since they would be able to take the help of the assistant available on it who can assist them on how to use the e-health service etc. Male immigrants reported that they have previous knowledge of using e-health services whereas some female immigrants reported less knowledge of experience of using e-health services because of less experience of using Internet. The reason of not having experience with the Internet among some of the female immigrants is basic level of education and lack of computer literacy skills that reduce their abilities to use and understand the e-health services on Vårdguiden. Education factor is a significant factor when it comes to utilization of e-health services, the higher the education, the more utilization rate of using e-health services (Economist Intelligence Unit, 2010).

From the above discussion it is concluded that FCs has directly influenced the use behaviour of the immigrants.

### 7.5 Behavior intention to use:

Regarding `the behavior intention to use`, four themes emerged. The interviewees were asked if they would use all three health services in the future time. They predicted to use all three e-services in the future as they expressed that Vårdguiden is a preferable platform to know more about health-related issues. The results from the above table show that most of the interviewees are optimistic regarding the intention to use e-health services in the future as they expressed that they would prefer to use e-health services on Vårdguiden as a platform of accessing and using electronic health services. As one of the male interviewee expressed his feelings as:
“I predict that I would keep interacting with the Vårdguiden in the future Whenever I need for the use of e-health services as it is very convenient and fast method of knowing about health issues…….”

The one interviewee expressed that he would like to use e-prescription in the future. However, interviewees predicted that they would like to induce toward the use of these services in the future but one interviewee expressed that it depends on my heath condition if he would use them or not. However, the majority of male and female were more optimistic to use ask-the-doctor and e-health guide services in the next couple of months.

8. Conclusion:

This study attempts to investigate the barriers to BI to use e-health services by Swedish immigrants and these barriers are investigated by investigating the behavior intention of the immigrants towards the use of the three e-health services selected from Vårdguiden. This study sets out to apply UTAUT model to examine barriers to BI of the immigrants to use the e-health services. The results found that factors such as PE, EEx, SI have direct significant impact on the BI of the immigrants but SI has insignificant effect on the BI of some of the female immigrants. Facilitating conditions found to have direct effect on immigrants’ use behavior of using the e-health services on Vårdguiden. However, from the results it can be concluded that PE, EEx, FCs are not the barriers to the BI of the immigrants because they are positively related to the BI to use the three e-health services. SI found to be a barrier for some female immigrants since they had basic education and less knowledge of using the Internet.
References:


Jung, Mari-Louise (2008), From Health to E-Health: Understanding Citizens Acceptance of Online Health Care, pp. 1-141.


Schepprs, Emmanuel; Dongen, Els van; Dekker Jos; Geertzen Jan and Dekker, Joost (2006). “Potential barriers to the use of health services among ethnic minorities: a review”.


71-85.


Appendix

Questionnaire for eHealth services for swedish immigrants

Your input is extremely important to us. Please spend a few minutes to give us your candid feedback. Thank you! All responses are held in confidence and will only be used for the purpose of the intended study. Please read each question carefully and answer that best describes you.

Name._____

Gender. Male_____ Female____

Age. Between 15 to 20____ 21 to 25____ 26 to 30____

31 to 35____ 36 to 40____ 41 to above____

What is your highest level of education?

High School________
Bachelor’s Degree________
Graduate Degree _________or
Above___________________

1. Do you have internet access? If yes? What kind of barries(lack of knowledge, lanaguage, skills etc) you face while accessing e-health services on vårdguiden?

2. What experience or knowledge do you have in using e-helath services?

3. Are the two e-health services such as online health guide and ask the doctor useful for you in order to accomplish your task on the vårdguiden?

4. Could you explain the usefulness of all the three e-health services?

5. What do you feel about your privacy on the vårdguiden as a trusted platform?

6. How do you express that vårdguiden in an interactive online platform?

7. Please explain how easily do you use services on vårdguiden?

8. What is your experience with vårdguiden in renewing eprsecriptions?

9. What are your thoughts about the impact of financial resources on the use of e-health services?

10. Do people convinced you to use e-health services? If yes how? If not why?

11. What do you think about vårdguiden as a learning platform for the use of e-health services without any support?

12. Do you intend to use e-health services on vårdguiden in the future? Why or why not?