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# Factors That Influence the Middle Age Population of the Civil Servants and Public Sectors Workers to Use Internet as a Tool for Receiving e-Health Services

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**Abstract:** Human and technology are like a magnet these days. The advancement of technology like e-Health services is interesting to be studied, especially towards our daily life attitudes and to the extent of our communication. The use of the internet to gather the health information are vital these days in our community and society, whether young people or the middle age people. Basically, Technology Acceptance Model (TAM) and UTAUT are used in many previous studies by scholars to engage technology and human to the use of e-Health services platform. Most of the studies arefocusedon user acceptance towards changes of the behavior once they used the e-Health services. Since most of the studies are resulting in changes onbehavior of the user, it is interesting to further the study towards the influence of the e-Health services in changing the interpersonal communication of the middle age population of the civil servants and public sector workers. Therefore, this paper will elaborate some of the theory that is used in the previous study and some for the future study purposes to enrich the usage of e-Health services on the internet towards interpersonal communication and disseminating their knowledge about health to the community.

**Key words:** e-Health services, Technology Acceptance Model (TAM), UTAUT, middle age, government, private sectors, interpersonal communication

## INTRODUCTION

On 6 August 1991, exactly 25 years ago, the World Wide Web became publicly available. Its creator is known as Tim Berners-Lee. Website growth in the adoption of online and mobile technologies as well as the application and evolution of these technologies to enable greater collaboration and interaction has been instrumental in the widespread use of e-Learning platforms and applications by a person and community. The use of emerging information and communication technology, especially the Internetis to improve or enable health and health care (WHO, 2012). It is also possible to use information technology to improve health care services (WHO, 2012).

The large amount of the Internet population has shown that Internet usage has given some impact to our lives such as communication, entertainment, social activities, online shopping, online health knowledge and etc. It is possible to use information technology to persuade people to change their attitude or behavior (Fogg, 2003). However, relatively little is known about the extent to which community accepts and uses e-Health as their reference for health related purposes. In e-Health, services are delivered online through the Internet such as via e-mail, web applications and video conferencing. Meanwhile, health education is described as any combination of learning experiences designed to help individuals and communities to improve their health, by increasing their knowledge or influencing their attitudes (WHO, 2012). Over the past year, a total of 1,268 civil servants aged 40 years and above have undergone a medical examination at the Putrajaya Health Clinic, of which 456 or 36% were found to have at least one health problem. “Health problems detected is the most overweight of 20.3%, followed by high cholesterol and diabetes 15.8 and 13.7%, he said.

The Government of Malaysia had taken another step to ensure the private sectors workers welfare is taken into consideration by introducing SOCSO Health Screening Program (HSP). The HSP will screen non communicable diseases such cardiovascular diseases, diabetes and cancer (cervical cancer and breast cancer) as these diseases are found to be factors affecting the productivity of Malaysian workers.

**Problem statement:** Based on the previous study by Boontarig *et al.* (2012), the researcher use UTAUT Model

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with extension of perceived value. The results show that the Thai elderly agree that the main concerns about using a smartphone are performance expectancy and effort expectancy. In addition, facilitating conditions, behavioral intention to use and perceived value are less agrees in this study.

Based on this information, the outcome of the e-Health services usage areinteresting to be studied and explore in Malaysia among civil servants and the public sectors workers who are in the middleage 40-60 (Collins and Forsyth, 2014), who are eligible for the free medical screening. This range of age is taken into consideration for this study because the populations of the civil servants and public sectors workers are familiar with the used of the internet. This is based on the year that the internet was born. This research will use Technology Acceptance Model (TAM) Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), performance expectancy and facilitating conditionto investigate the use of e-Health services to determine a person's effective interpersonal communication whetherit will leads towards improving a healthy lifestyle.

**Purpose of the study:** The purpose of this study is to examine the factors that influence the middle age population (Collins and Forsyth, 2014) of the civil servants and public sectors workers to use internet as tool for receiving e-Health services. Although, it is found in user acceptance of information technology that the UTAUT Model was able to explain about 70% of intention to use information technology. However, the research gab here is to reveal more factors should be considered to explain the use of e-Health services in government and private sectors middle age population to enriched their interpersonal communicationand disseminating their knowledge about health to the community.

**Research questions:**

- What is the PEOU level towards e-Health services?
- What is the PU level towards e-Health services?
- What is the performance expectancy towards e-Health services?
- What is facilitating condition towards e-Health services?
- Is the PEOU has a significant relationship with the interpersonal communication?

**Research objectives:**

- To identify the level of PEOU towards e-Health services usage
- To identify the level of PU level towards e-Health services usage
- To identify the influence of performance expectancy level towards e-Health services usage
- To identify the level of facilitating condition level towards e-Health services usage
- To identify the moderating effects between PEOU and interpersonal communication towards e-Health services usage

**Limitation of study:** The limitation of this study is to focus certain specific characteristic of respondents with the background of internet knowledge and those respondents who went to health screening center that are provided to the civil servant and for those who participate in the HSP for private sectors worker.

In contrast, a study by Wu and Wang (2005) revealed that ease of use and usefulness are both significant factors that affect the use of a technology generally. In Malaysian context, it should be noted that researches on technology use have demonstrated that the PEOU and PU are important predictors on the decision to not only adopt a technology but also to continue to use that technology (Ndubisi, 2006).

**Significance of study:** The significance of this study is to identify the effects of technology usage towards interpersonalcommunication by using the fivetheories described.The study will enable the researcher to predict future technology usage and assess their impacts on interpersonal communication.

**Literature review**

**e-Health:** e-Health is an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies. In a broader sense, the term characterizes not only a technical development but also a state-of-mind, a way of thinking, an attitude, a commitment for networked, global thinking to improve health care locally, regionally and worldwide by using information and communication technology (Eysenbach, 2001).

The model of e-Health that has been developed in United Kingdom, Canada and European country have emerge in the context of wealth where they are all well-developed nation and the local Information and Communications Technology (ICT) infrastructures already in place over which health and other public and private services to support all aspects of national and local economies are delivered (Drury, 2005). e-Health information that is interactive, interoperable, personally engaging, contextually tailored with the ability to be delivered to mass audiences can really make a difference

in enhancing the quality of health care and health promotion efforts. It can reach diverse audiences with information that matches their health needs and communication orientations (Kreps and Neuhauser, 2010). In Malaysia, Telehealth project was launched in 1999 to achieve the National Health Vision that is to have a healthy nation by next year 2020.

## MATERIALS AND METHODS

**Technology acceptance model:** Technological Acceptance Model (TAM) has been tested in many studies. It has been found that an individual's behaviors to use a system largely explain their intentions. Consequently, previous studies have found that TAM consistently explains a significant amount of the variance in usage intentions and behavior (Mathieson, 1991). The model puts it that behavioral intention to use has a significant impact on a user's ability to actually use a system.

TAM has earlier postulated that two beliefs which known as the PU and the PEOU, determine the attitudes of people toward using a particular system. Such attitudes together with PU would subsequently determine use intention and furthermore, this would lead to the actual use of the system. Both studies indicate that PEU and PU affect behavioral intentions through "direct" and "indirect" forms (Agarwal and Karahanna, 2000; Venkatesh and Davis, 2000).

## RESULTS AND DISCUSSION

**Performance expectancy:** Performance expectancy describes user's opinions of the effectiveness of using a technology (Venkatesh *et al*., 2003).Within the research context where Mobile Health Services (MHS) are the target technology, its effectiveness can be captured by the extent to which it can help users to reduce the health-relevant threat and thus response efficacy in the PMT theory is treated as a proxy of performance expectancy. When users consider that using MHS can enable them to reduce the threats to health, they will be more likely to adopt this technology. This positive relationship can also be supported according to the positive effect of performance expectancy on behavioral intention in UTAUT (Venkatesh *et al*., 2003) and the positive effect of response efficacy on behavioral intention in PMT (Rogers, 1975; Ajzen, 1991).

**Facilitating conditions:** Facilitating conditions describes the potential conditions that constrain or facilitate performing the behavior. This is similar to the concept of perceived behavioral control in TPB. According to TPB, perceived behavioral control is derived from two sources:

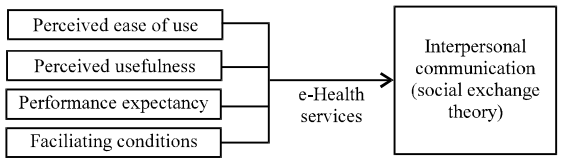


Fig. 1: Conceptual model

external and the internal control (Ajzen, 1991). External control stresses the extent to which individuals have adequate external resources to perform a behavior while internal control focuses on the extent to which individuals have the ability to undertake the behavior (Pavlou and Fygenson, 2006).

**Social exchange theory:** The internet evolves as social exchange theory is supported by technology. Web 2.0 and rich internet applications provide means for users to engage in social exchanges through dynamic web-based interfaces. Persistent connections, end-to-end communications, distributed computing methods, combined with faster and better hardware improve social exchanges on the internet.

Social exchange theory is an important perspective for the study of interpersonal relationship. According to the theory, interpersonal interaction is a process. In the process, various parties conduct activities and exchange valuable resources with each other (Fig. 1).

## CONCLUSION

Basically, this study is important as we can determine the co-existence between human interpersonal communication and the technology usage in e-Health services impact. This topic also will produce a significance understanding on the reliability of e-Health services on the internet to provide tons of information regarding health towards an individual and communities to establish a connection between people in the society and to justify the effects of interpersonal communication.

The core of the theory is the principle of reciprocity to which the interpersonal relationship adheres. Rewards for the exchange not only include material rewards but also psychological rewards such as support, trust, self-esteem and prestige. Social exchange theory grew out of attempts to formalize the study of interpersonal relations and "social processes such as power and the exercise of influence…". A key development in social exchange theory was the incorporation of a network perspective with the view that exchange relations form network structures (Cook *et al*., 2013).

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