Chapter 4.14
Drivers for Wireless Technology Acceptance in Indian Healthcare

Raj Gururajan
University of Southern Queensland, Australia

ABSTRACT

The outcomes of clinical usefulness as a driver of wireless technology for Indian healthcare are reported here. Using both qualitative and quantitative techniques, 30 physicians were interviewed and 200 health professionals were surveyed. The outcomes established that in addition to technology factors, other factors such as clinical factors, administration factors and communication factors play a crucial role in determining the uptake of wireless technology for healthcare. These factors were further validated using a PLS model.

INTRODUCTION

In the last few years, high expectations, technological developments, and effective and efficient services have been shown to be prerequisites for improvements in the healthcare domain (Rogoski, 2005). Latest trends in the healthcare sector include the design of more flexible and efficient service provider frameworks aimed at providing health services to all stakeholders. In order to implement such frameworks, wireless technology is increasingly being used in the healthcare sector (e.g. data management automation). A decrease in the cost of wireless devices and improved awareness of the benefits that ensue by using related wireless applications are two of the contributing factors towards the increased use of wireless technology in this sector (Gururajan, R., Quaddus, M. et al., 2005). Even though the future of this technology and its usability is promising, its adoption is still in its infancy, which is attributed to the complex and critical nature of the healthcare environment. In the current competitive and complex business environment, technology developments have played a critical role in delivering high quality of

care (Reinecke, 2004). However, there is limited knowledge and empirical research on the effectiveness and adoption of wireless technology in general, and in the Indian healthcare system in particular.

Recent research has established that investment in emerging Information Technology (IT), including Information Systems (IS), can lead to productivity gains only if they are accepted and effectively used by respective stakeholders. Consequently, acceptance and utilization of IT/IS in the healthcare environment have been central themes in the information systems literature. Therefore, the fundamental focus of this research is to investigate and examine the influence of internal and external determinants on the usefulness of wireless technology. Further, this research also assesses how its acceptance contributes to the adoption of wireless technology. It is believed that this research is the first of its kind attempted in the Indian healthcare domain and it employs empirical evidence to explore the impact of wireless technology and its usefulness in the Indian healthcare system. The Indian healthcare domain is at the forefront in adopting the latest medical technologies and applications, as evidenced by media reports and, as such, it constitutes an excellent context for validating existing adoption theories and extending them.

The main contribution of this research includes the identification of a set of drivers and barriers to using wireless technology in a given Indian healthcare setting. In addition to this, for the first time, a set of clinical factors influencing the adoption of wireless technology has been identified and validated using a second order regression model.

LITERATURE REVIEW

The concept of wireless technology in healthcare is discussed in many studies (Dyer, 2003; Hu et al., 2002; Sausser, 2003; Simpson, 2003; Wisnicki, 2002). For example, Wisnicki (2002) provides details of how broadband technology, an essential component of wireless technology, can be used in healthcare. While prior studies agree that wireless applications have the potential to address the endemic problems of healthcare, very limited information can be found about the determinants of such applications (Gururajan, Raj et al., 2005; Gururajan et al., 2004). In general, the majority of the works reviewed are descriptive about the benefits of wireless handheld devices in healthcare in general, and medicine in particular. There is only a small number of studies that provide evidence-based information concerning these devices in healthcare (Fischer et al. 2003; Sax et al. 2005). Furthermore, five major studies in the area of healthcare (evaluated by (Spil & Schuring, 2006) testing the Technology Acceptance Model (TAM) produced findings which were inconsistent with the body of knowledge in non-healthcare settings. With 'Perceived Ease of Use' and 'Perceived Usefulness' as the major TAM attributes, these studies found that in the health environment, 'Perceived Usefulness' is an important attribute in technology adoption, while 'Perceived Ease of Use' was found to have no effect (Spil & Schuring, 2006). This is different to findings reported in non-health IS studies, where both attributes were found to be reliable technology adoption predictors. Therefore, further empirical investigation is required to explain the reasons why this variation exists in healthcare. In addition, there is a need to explore if further attributes exist which may influence the adoption of wireless applications in the healthcare environment.

TAM in Healthcare Context

In healthcare literature, the discussion on wireless technology falls into three periods. For example, studies prior to and including 2000 discussed the status of wireless technology and the possible role the technology can play in healthcare. Studies

14 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/drivers-wireless-technology-acceptance-indian/49925

Related Content

A Software Tool for Reading DICOM Directory Files
Ricardo Villegas, Guillermo Montillaand Hyxia Villegas (2007). *International Journal of Healthcare Information Systems and Informatics (pp. 54-70).*
www.irma-international.org/article/software-tool-reading-dicom-directory/2200

A Pharmaco-Cybernetics Approach to Patient Safety: Identifying Adverse Drug Reactions through Unsupervised Machine Learning
Kevin Yi-Lwern Yap (2014). *Handbook of Research on Patient Safety and Quality Care through Health Informatics (pp. 179-197).*
www.irma-international.org/chapter/a-pharmaco-cybernetics-approach-to-patient-safety/104080

JSON-LD as an Interchange Technology to Facilitate Health Information Exchange
Daniel L. Kaukinen (2019). *International Journal of Extreme Automation and Connectivity in Healthcare (pp. 66-78).*
www.irma-international.org/article/json-ld-as-an-interchange-technology-to-facilitate-health-information-exchange/219215

To Adopt or Not to Adopt: A Perception-Based Model of the EMR Technology Adoption Decision Utilizing the Technology-Organization-Environment Framework
Colleen Schwarzand Andrew Schwarz (2016). *E-Health and Telemedicine: Concepts, Methodologies, Tools, and Applications (pp. 391-414).*
www.irma-international.org/chapter/to-adopt-or-not-to-adopt/138410

Barriers and Facilitators to Using Smart Home Technologies to Support Older Adults: Perspectives of Three Stakeholder Groups
 (2021). *International Journal of Healthcare Information Systems and Informatics (pp. 0-0).*
www.irma-international.org/article//279334