

# E-Health Adoption by Healthcare Organizations in Developing Countries: Case of Morocco

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## INTRODUCTION

Healthcare organizations include medical and administrative units. Medical ones deploy skills and knowledge to promulgate patient care. As for the administrative units, they provide necessary tools to support medical activities. Both of these two units generate divers information. Thus, usage of Information Technology (IT) becomes a crucial strategic challenge for these organizations (Ammenwerth et al, 2004). Some authors noted that IT usage offers opportunities ranging from cost reduction and clinical errors to the care quality improvement (Scott et al., 2007).

Since 1997, Morocco, as a developing country, has undergone several issues related to care access, productivity and quality of healthcare organizations. These issues led the Moroccan government to a process of structural reforms enabling health sectors to improve management processes, quality and performance of these organizations.

In 2001, the government launched an integrated project to support healthcare reforms: the Project Management and Financing of Health Sector (PMFHS). This project aimed to introduce managerial tools to support changes in healthcare system. It gave better support to healthcare professionals and improves the quality and efficiency of the promulgated care services. Implementing the IT in the administrative and healthcare processes was considered as one of the main goals of this project. Despite these efforts to enhance the care system, it is still faced to a major shortcoming: an inadequate hospital management.

In 2005, Moroccan government launched E-health project. This later aimed to provide timely reliable indicators to health decision makers and improve availability and access to information and data related to citizens and health professionals. Moreover, a strategy 2008-2012 was proposed, it aimed to ensure care fairness offer between regions and facilitated access to the rural population. It also aimed to provide citizens confidence toward health system by improving health quality and reducing costs.

Furthermore, the current state of the Moroccan e-health could be illustrated by the 2012-2016 strategy. Improvement of the health system governance was the pillar axe of this strategy. It is focussed on usage of Information Technology and its contribution to improve health quality within healthcare organizations.

As part of this initiative, Provincial Hospital (PH) Hassan I of Tiznit city, located in south of Morocco expected to integrate IT within its units. Many objectives are behind this integration: improve the care quality, ameliorate communication, reduce waiting times for patients, and reduce hospital costs.

However, Integration of these technologies is faced to several difficulties affecting its adoption by health professionals. Majority of these difficulties are related to cultural issues, to deficiency of qualified people able to handle the technology, to ineffective training and to lack of support. Hence, identification of factors predicting E-health adoption by physicians and nurses working in developing countries, especially in Morocco becomes a necessity. It helps to assure the success of e-health integration within

its third world health organizations. To do, we suggest a model based on Unified Theory of Acceptance and Usage of Technology (UTAUT) (Venkatesh et al., 2003) extended by two added constructs “Image” and “Trust”. Since its advancement, UTAUT was applied only in industrial business context (banking, accounting, entertainment and telecommunications services) (Venkatesh et al., 2003). Moreover, it showed relevant power to predict e-health adoption but only in developed countries (Kijasanayotin, Panarunothai and Speedie, 2009). Because of its explanatory power and its robustness, the original UTAUT was retained as the theoretical basis for the research model. The study was conducted in the Provincial Hospital (PH) Hassan I of Tiznit city, located in south of Morocco.

The rest of the chapter is structured as follows. First, it develops a theoretical background including relevant studies predicting IT adoption in healthcare context. Second, it describes the research model and hypotheses. After, authors present the adopted methodology and the results. Before the conclusion, they discuss their findings.

## THEORETICAL BACKGROUND

In 2003, (Venkatesh et al.) reviewed eight theories and models predicting individual IT adoption. The fourth authors noticed the need for a unified view of user’s technology acceptance. Thereby, they developed the Unified Theory of Acceptance and Use of Technology (UTAUT) model to predict individual intention to adopt IT.

UTAUT includes four core constructs of intention and usage of IT: (1) Performance expectancy (PE), (2) Effort expectancy (EE), (3) Social influence (SI), and (4) Facilitating conditions (FC). Gender, Age, Experience and Voluntariness of use were considered as the moderating variables.

Empirically Venkatesh et al (2003) validated the UTAUT model throughout longitudinal studies conducted in six different organizations. They found that it predict roughly 70% of the variance in intention to adopt IT. Moreover, they concluded that Performance Expectancy, Effort Expectancy and Social influence are direct determinants of Behavioural intention (BI) while this latter and Facilitating Conditions influence Use behaviour (UB). Also, they added that the moderating variables influence the impact of the four key constructs (PE, EE, SI and FC) on BI and UB.

The UTAUT model has been tested in many areas such as mobile services among consumers (Carlsson et al (2006), industry Pai and Tu (2011) and banking (AbuShanab et al 2010). However Holtz and Krein (2011) noted the limited applications of this model to investigate IT acceptance in healthcare context especially in developing countries (Kijasanayotin et al., 2009 ; Bennani and Oumlil, 2013, 2014). The following section reviews some applications of UTAUT in this context for the last three years.

In 2011, Holtz and Krein attempted to understand the manner in which nurses perceived the new electronic medical record (EMR) implementation. They utilized UTAUT model as a framework to explain this perception. Results indicated that Performance Expectancy and Social Influence influenced significantly nurses’ intention to adopt EMR. However, Effort Expectancy did not have a significant influence on the intention. Venkatesh et al (2011) attempted to predict EMR adoption by physicians. For this objective, they mobilised UTAUT model with minor modification and tested it on 141 doctors from a Canadian private hospital. Authors pointed out that the original UTAUT did not perform well in predicting doctors’ intention to adopt EMR. Moreover, Jeng and Tzeng (2011) studied factors predicting medical professionals’ behavioural intention to adopt CDSS. They adopted fuzzy Decision-Making Trial and Evaluation Laboratory (DEMATEL) method to test relationships between the UTAUT constructs. Results indicated the significant influence of Performance expectancy on intention to adopt CDSS. However, Social Influence showed no influence on this intention.

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