



ELSEVIER

journal homepage: [www.ijmijournal.com](http://www.ijmijournal.com)

# Adoption of clinical decision support systems in a developing country: Antecedents and outcomes of physician's threat to perceived professional autonomy

Pouyan Esmailzadeh<sup>a</sup>, Murali Sambasivan<sup>b,\*</sup>, Naresh Kumar<sup>c</sup>, Hossein Nezakati<sup>d</sup>

<sup>a</sup> College of Business Administration, Florida International University, USA

<sup>b</sup> Taylor's Business school, Taylor's University Lakeside Campus, Subang Jaya, Malaysia

<sup>c</sup> Global Entrepreneurship Research and Innovation Center (GERIC), Universiti Malaysia, Bukit Jalil, Kelantan, Malaysia

<sup>d</sup> Faculty of Economics and Management, Universiti Putra, Serdang, Malaysia

## ARTICLE INFO

### Article history:

Received 24 May 2014

Received in revised form

23 March 2015

Accepted 24 March 2015

### Keywords:

Clinical decision support systems

Professional autonomy

Technology adoption

Attitude toward knowledge sharing

Interactivity perception

Performance expectancy

## ABSTRACT

**Objective:** The basic objective of this research is to study the antecedents and outcomes of professional autonomy which is a central construct that affects physicians' intention to adopt clinical decision support systems (CDSS). The antecedents are physicians' attitude toward knowledge sharing and interactivity perception (about CDSS) and the outcomes are performance expectancy and intention to adopt CDSS. Besides, we include (1) the antecedents of attitude toward knowledge sharing—subjective norms, social factors and OCB (helping behavior) and (2) roles of physicians' involvement in decision making, computer self-efficacy and effort expectancy in our framework.

**Methods:** Data from a stratified sample of 335 Malaysian physicians working in 12 public and private hospitals in Malaysia were collected to test the hypotheses using Structural Equation Modeling (SEM).

**Results:** The important findings of our research are: (1) factors such as perceived threat to professional autonomy, performance expectancy, and physicians' involvement in making decision about CDSS have significant impact on physicians' intention to adopt CDSS; (2) physicians' attitude toward knowledge sharing, interactivity perception and computer self-efficacy of physicians play a crucial role in influencing their perceived threat to professional autonomy; and (3) social network, shared goals and OCB (helping behavior) impact physicians' attitude toward knowledge sharing.

**Conclusions:** The findings provide a comprehensive understanding of the factors that influence physicians' intention to adopt CDSS in a developing country. The results can help hospital managers manage CDSS implementation in an effective manner.

© 2015 Elsevier Ireland Ltd. All rights reserved.

\* Corresponding author. Tel.: +0061 12 9350065.

E-mail addresses: [pouyanes@yahoo.com](mailto:pouyanes@yahoo.com) (P. Esmailzadeh), [sambasivan@hotmail.com](mailto:sambasivan@hotmail.com), [Murali.Sambasivan@taylors.edu.my](mailto:Murali.Sambasivan@taylors.edu.my) (M. Sambasivan), [nareshmy@gmail.com](mailto:nareshmy@gmail.com) (N. Kumar), [hosseini@upm.edu.my](mailto:hosseini@upm.edu.my) (H. Nezakati).

<http://dx.doi.org/10.1016/j.ijmedinf.2015.03.007>

1386-5056/© 2015 Elsevier Ireland Ltd. All rights reserved.

## 1. Introduction

Effective utilization of Information Technology (IT) in the health sector can lead to cost cutting and restructuring [1] which can help citizens avail medical services at an affordable price. The main challenges for any technology are the users' acceptance and regular use of technology in day-to-day operations [2] and successful integration with the entire clinical workspace [3]. The mere provision of technology does not guarantee adoption and usage of clinical IT systems [4]. Investments in clinical IT systems can be beneficial only when the systems are used by the physicians for accurate diagnosis and prescriptions [5]. If the usage rate is low, the technology can no longer be effective for organizations [6]. According to Lowenhaupt [7], physicians' adoption of clinical IT systems is not encouraging. Many studies have corroborated this point [8–12]. What is (are) the factor(s) that contribute to this negative behavior?

We argue that professional autonomy (or the lack of it) plays a central role in deciding whether clinical IT systems will be adopted or not by the physicians. Professional autonomy is defined as “professionals having control over the conditions, processes, procedures, or content of their work according to their own collective and, ultimately, individual judgment in the application of their profession's body of knowledge and expertise” (: p. 207). The professional autonomy is granted by the State through the necessary legislation and can vary from one country to another country. The professional bodies ensure that this autonomy is not invalidated. In general, professional autonomy addresses the control over the profession's scientific knowledge–production, conveyance, application and evaluation in practice [13]. Walter and Lopez [12] have introduced a new construct called perceived threat to professional autonomy to study the adoption behavior of physicians and we use the same construct in this research. Esmailzadeh et al. [14] have explained some of the challenges and issues regarding adoption of health information technology and have emphasized the importance of perceived threat to professional autonomy in IT adoption in the health care sector.

Clinical IT applications are of two types [15,16]: (1) Electronic Medical Records (EMR) systems–computer systems that allow users to create, store, and retrieve patient charts on a computer and (2) Clinical Decision Support Systems (CDSS)–computer systems that use patient data to generate case-specific advice. The data for CDSSs predominantly come from the EMR systems. In this research, we address issues related to adoption of CDSS by physicians in hospitals in a developing country. More physicians are comfortable in adopting EMR than CDSS. A study among the outpatient physicians in USA indicates that 17% use CDSS and 30% use EMR systems [17]. Why is there a need for a different framework to study the behavior of CDSS adoption by physicians when there are general frameworks available?

Many theories and frameworks have been developed from different perspectives to study user acceptance of IT systems and this single factor is critical to determine if the adoption has been successful or not [18–21]. A unified model called UTAUT [22] and DeLone and McLean model [23] are popular

among researchers to study the adoption and effectiveness of IT systems. We agree with other researchers that these frameworks are for general users and are not completely suitable for studying the adoption behavior of professionals such as physicians. Each profession has special contextual characteristics that may affect IT adoption behavior. The physicians are different because of their specialized training, autonomous practices and professional work arrangements [24].

Our study differs from earlier studies in the following ways. First, we study the antecedents and outcomes of perceived threat to professional autonomy. Previous studies have studied this construct with a few other constructs. For example, Walter and Lopez [12] have studied this construct with perceived ease of use and perceived usefulness on intention to adopt clinical IT systems. Sambasivan et al. [25] have studied this construct with performance expectancy, effort expectancy and physicians' involvement in decision making on intention to adopt CDSS. In this study, we have developed an integrated framework that includes the antecedents and outcomes of physicians' perceived threat to professional autonomy. An integrated framework can help us comprehend the entire mechanism of CDSS adoption. Second, the study has been conducted in a fast developing country of South-east Asia, Malaysia. Developing countries face more challenges than developed countries in implementing IT systems. The usage rate of CDSS in developing countries is very low [26] and some of the pertinent reasons are: (1) problem in implementing and using EMR (EMR provides input to CDSS), (2) poor design of human interface, (3) difficulties in fitting CDSS as a part of routine care process, (4) computer illiteracy of physicians and (5) cost of purchasing and implementing CDSS.

## 2. Some prefatory remarks on perceived threat to professional autonomy

Literature looks at professional autonomy from two perspectives: (1) empirical–sociological and (2) normative. The first perspective deals with the actual power and competences of physicians and argues that professional power is a social reality that cannot be disputed. This enables the professionals to claim that professional autonomy has to serve their own interests. The second perspective considers professional autonomy as a professional ideal and is related to a standard of excellence for each profession such as physicians, nurses, lawyers and accountants and these professions include personal services that are marked by confidentiality [27]. This approach implies that professional autonomy of physicians can be maintained only if they allow their activities and decisions to be peer reviewed by other physicians and by patients. The characteristics of the medical profession (physicians in particular) are: (1) complete control over their work, (2) centered on highly specialized knowledge and skills and (3) a service that is greatly appreciated by the society and that requires secrecy between the physician and the patient [27]. Therefore, professional autonomy is the privilege that is bestowed upon the physicians by the state (through legislation) and the society at large and this privilege is closely guarded by the physicians (through the medical professional bodies) [28].

Download English Version:

<https://daneshyari.com/en/article/516112>

Download Persian Version:

<https://daneshyari.com/article/516112>

[Daneshyari.com](https://daneshyari.com)