An Empirical Study on Patients’ Acceptance and Resistance Towards Electronic Health Record Sharing System: A Case Study of Hong Kong

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ABSTRACT
This article aims at identifying significant factors influencing behavioural intention and resistance of patients toward electronic health record sharing systems by using PLS-SEM. A questionnaire was selected as the major data collection method and 243 responses were collected. Thus, this paper reviewed different theoretical models to illustrate the factors which influence the behavioural intention of patients towards the usage of the system and to identify the most important factors for acceptance and resistance of patients’ respectively. The responses were then divided into two groups, specialist patients and normal patients, which had the common factors including performance expectancy and effort expectancy. For specialist patients, transition costs were identified as the only factor significantly affecting resistance to use. For normal patients, sunk costs and regret avoidance were found to be positively correlated with resistance to using of normal patients.

KEYWORDS
Electronic Health Record Sharing System, Empirical Study, Smart-PLS, Structural Equation Modelling

1. INTRODUCTION
Adopting electronic health record (eHR) has been a global trend due to more advanced technology. In most of the European countries, eHR systems have been widely used in healthcare organisations in order to promote health care delivery and integrated services with high-quality efficiency (Adler-Milstein, Ronchi, Cohen, Winn & Jha, 2014). Some of the countries like Finland have decided to extend the usage of eHR and document patient data in a structured form centralised at one platform. Progress from a local Information System (IS) to a national one is developed (Vuokko et al., 2017).

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An Electronic Health Record Sharing System (eHRSS) provides a platform for healthcare providers in both the public and private sectors, with the record in the electronic format of patients (Food and Health Bureau, 2016). The electronic health record (eHR) includes health-related data that is not confined to medical treatment for illness, as well as the data stored and retrieved by different healthcare providers for health care-related purposes. In Hong Kong, it usually creates and keeps health-related and medical data in paper form. Although there are some healthcare providers may have an electronic medical or patient record system to keep the data, the system can only be used in the corresponding organisation. It is not able to share those data at large scale with other healthcare providers whenever the patients go to other hospitals or clinics.

To provide more accurate medical records for healthcare providers as well as enable efficient clinical practice, the development of eHRSS has been started since 2008. The first stage of eHR Program was implemented from 2009 to 2015 as a sharing pilot called “Electronic Patient Record (PPI-ePR)”. Patients who are interested in joining the program have to submit their application online or in person, which means that they agree to let private healthcare provider registered in this program views the patient’s clinical record online. Each patient who has registered will be given a personal identification number. According to the Hospital Authority (2016), there are more than 485,000 patients and 3,500 private healthcare professionals have been enrolled in the PPI-ePR pilot up to January 2016. In the March of this year, eHRSS is launched and the registration of PPI-ePR is no longer accepted. The patients are required to submit a new application.

Data privacy and security of the eHRSS are of paramount importance, which is given legal protection. “Electronic Health Record Sharing System Ordinance” is effective from December 2, 2015 for the establishment of eHRSS. It provides a legal base to protect the system, data as well as information (Food and Health Bureau, 2016). The system provides a secure and stable platform to allow the registered private healthcare providers are accessing to eHR with the patients’ consent. Besides, the registration of eHRSS is completely voluntary participation. There are two options including indefinite sharing consent and one-year sharing consent for patients when they decide to participate in eHRSS. Indefinite sharing consent is valid without time limit while the valid time of one-year consent is one year from the date of patient’s registration. Consent is valid until revocation by the patient registration withdrawn or cancelled. In addition, only patients’ data which are within the scope of sharable eHR will be uploaded to the system and accessed by the clinicians on the need-to-know basis.

An information infrastructure is provided for the healthcare providers via eHRSS. With the consent of patients and authorisation for access to the system, the eHR of patients can be retrieved by the healthcare professionals in both the public and private healthcare sectors, which may be shared by other healthcare professionals (Food and Health Bureau, 2016). The eHR systems have already been used in healthcare organisations in most European countries (Codagnone & Lupiañez-Villanueva, 2013). In Hong Kong, however, it is still a long way to go to make eHRSS as a territory-wide application.

The healthcare-related system applies to cloud computing to enable a ubiquitous and convenient service to access data resources (Liu et al., 2016). Data access and storage services without limitation of physical location are provided through cloud computing. Management effort is minimised by providing rapid and elastic services, and hence, health cloud increases the business flexibility of hospitals in both public and private sector (Mathew, 2013). Traditionally when people are sick and go to see a doctor, the doctor is required to check their body’s state and previous medical records carefully. This process is time-consuming. It is common for a patient who goes to the public hospital to spend few hours to finish the whole process and collect medicines. Nevertheless, with the health cloud platform, Big Data capture, storage, index and visualisation of data for various stakeholders are facilitated (Mahmud, Iqbal & Doctor, 2016). Also, cost and time are saved by preventing overlapping treatment or body checking process. Health cloud brings lots of benefits to the healthcare industry. However, security and privacy are one of the main reasons to hesitate to widely share sensitive information in the health cloud (Wang, et al., 2016).
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