

# Hospital Administrators and Technology as Determinants for Successful IT-Usage in Public Sector Hospitals of Developing Countries

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## Abstract

The impact assessment of IT on decision making process has now become a global issue and thereby gaining interest of researchers of both developed and developing societies (see for example Ahlan, 2005; Adebayo, 2007; Bradley, 2006). However, empirical studies have been conducted to evaluate the impacts of IT on health-related decision making by healthcare professionals in Pakistan. To fill the existing gap in the literature the study at hand is undertaken to evaluate the factors affecting the use of IT in public health organizations in KPK, Pakistan. This paper assesses the effects of two key factors (hospital administrators and technology) to see their influence on the adoption and use of IS (information system) development in hospitals of Pakistan especially public sector hospitals. The current research asserts that hospital administrators'/executives' interest and support for implementation and use of IT and available technology are the primary determinants for successful implementation and use of the IT in public hospitals. The healthcare organizations supported by the administrators and effective hardware and software solutions can materialize successful adoption and use of IT in healthcare organizations anywhere including developing states.

**Key words:** Hospital Administrators, Technology, and IT-usage.

## 1. Introduction

IT has revolutionized the organizations and their structure around the globe irrespective of public or private nature. It not only enhances the efficiency and efficacy but also affected the competitors. Hospital administrator and technology both determines the successful usage in public sector hospitals in the developing countries. The impact assessment of IT on decision making process has now become a global phenomena and getting momentum and growing interest of the researchers of both developed and developing societies is evident from the studies of Ahlan (2005), Adebayo (2007) and Bradley (2006). The empirical studies have been conducted to evaluate the impacts of IT on health-related decision making by healthcare professionals in Pakistan. To fill the existing gap in the literature the study at hand is undertaken to evaluate the factors affecting the use of IT in public health organizations in KPK, Pakistan.

### *1.1 Determinants/factors of IT-Usage*

It is well reported that there are several surrounding variables/factors which forcibly intervene in the IT development and use. Hospital administration has to harness these factors in the favor of healthcare organizations. For example, resistance to change by the healthcare professionals (users) can be neutralized by first giving them a genuine participation in the IT-project development and then providing them all possible resources of training and education about how to use new systems in hospitals.

### *1.2 Hospital Administrator*

The first task of the hospital administrator is to design and manage the flow of accurate and timely information because executives always seek out for proper analysis and effective decision-making. Bradley (2006) says that as top and middle order executives want to avoid inadequacies in information storage and retrieval for the

purpose of analysis and decision-making, they must fully support the implementation of IT and must provide required financial support. Hospital executives perceive IT as facilitators in organizational decision making.

The dependence on both the computing and the communication dimensions of information technology in the workplace is gaining intensity thus changing the overall environment of work place. The presence of IT in healthcare organizations has typically taken the form of specific computer application systems. Adesina (1988) corroborated this by elucidating that the amount of information available to doctors and physicians affects their performance. Hence, administrator must facilitate the free flow of information upward, downward and laterally within an organization. To do this successfully, the decisions should be based on accurate information obtainable with an operation of a CBIS (computer based information system). The tasks of designing and managing information flow by the executives of hospitals for effective administrative and healthcare decisions bound the administrators of public and healthcare organizations to support CMC (computer mediated communication e.g. e-mails, computer conferencing etc), which has more positive features than face-to-face communication as Keri (2007) highlighted that more than 85% of administrators claim that e-mail improves organizational communication as it provides textual information and distributes them quickly. The healthcare staff in a hospital must be highly committed and possess the know-how to collect quality information. There are greater success rates for IT in the organization if there is a better coordination between IT- and non-IT staff, and better compensation especially for IT professionals to motivate them to work with devotion and interest. Keri (2007) stressed that administrators of public organizations must support CMC (computer mediated communication). The successful implementation and use of IT in public sector healthcare organizations become a special case as many reports have revealed that government organizations are running at loss than earning profits as they are service providers for public interest as indicated by that in public sector organizations there is always misalignment between the users and the new technological systems because of insufficient training and motivation of the employees therefore implementation of IT is less in public sector organizations (Sajjad et al., 2009). Since administrators' interest and support is sensed as success factors for IT-implementation therefore the lack of interest and support is the major obstacle in the implementation and the use of the IT in public sector healthcare organizations (Ahlan, 2005).

## **2. Technology**

Malik et al. (2008) have examined the doctors and physicians in Pakistan have to evaluate the use of different digital tools/technologies in providing health facilities and services to the patients. They recognized that the availability of the needed computer hardware and software is critical in deciding the doctors' acceptance. Another researcher has reported that the selection of proper technologies is a puzzling decision because of the range available (Khoja et al., 2008). In a literature review (Durrani & Khoja, 2009) it is highlighted that the use of telemedicine in developing countries is stuffed with the problems of selecting the most appropriate technologies for their health requirements.

The challenge is how can healthcare organizations can better communicate and collaborate within their employees, patients and stakeholders. Creating knowledge proposes the need for improved knowledge flow internally within the organization and externally to the patient and stakeholders. Controlling data and information through the connection and collaboration of healthcare providers from all the different levels of a hospital generates success chances for IT usage in healthcare organizations (Chou & Brauer, 2005). Furthermore, the required technology for hospitals facilitates communication and teamwork at health care institutions (Shaqrah, 2010).

### **2.1 Hardware and Software**

Adoption and use of suitable hardware & software are important for successful IT-usage in public sector hospitals of Pakistan. Before introducing IT in healthcare sector, the required hardware and software must be identified and determined in order to evade doctors'-related issues. According to (Kuhn & Giuse, 2001), while on the start of IT-applications, previously available software & hardware must be recognized because physicians and doctors often object that IS and interface designs are not user friendly. Further they explained that IS and the technology-ware, in health care hospitals are deficient in the flexibility and adaptableness which create many healthcare-providers'-related problems. For effective usage and the success IT, the doctors must be given opportunity to work together with IT-staff to spell out their particular requirements that may affect their performance of duties. According to Huges (2003) while scheming and adopting technologies, doctors and physicians must be given chance to take part in IS-development proceedings for having a better and practicable information system which has a positive impact on the work practices of employees.

Doctors in low income countries criticize that the contents and the language of the majority of IT-applications are not according to the local environment. According to (Chetley, 2006) suitable language is recurrently neglected in IS and little content is available in local languages for e-health programs. For success of IT-applications in health sector, doctors and physicians from all different sections of a hospital must be considered while developing a better and quality IS. Furthermore these physicians representing different departments of a healthcare organization are in better position to provide their specific requirements and thus undesired features of an IS are avoided. According to Khoja et al., (2007) all healthcare providers must be involved in planning, development and implementation of new e-health systems.

## **2.2 IT-Professionals**

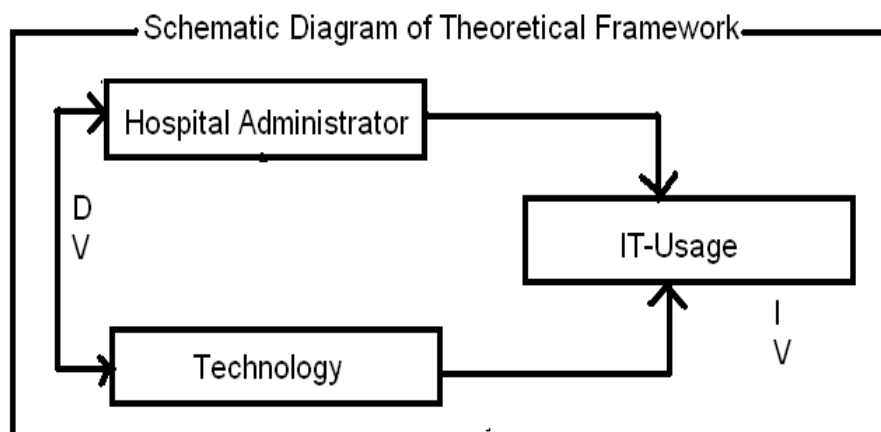
IT has influence on organizational work practices especially when the concerned people have the required abilities to use them. It is very common that IT-workforce in the hospitals of developing nations possess limited computer skills and they also lack interest to learn IT-related skills and use the same to carry out their different tasks. This may be due to unfavorable environments and shortage of training resources and programs. According to Kimaro & Nhampossa (2005) to offset the issue of inappropriate usage of IT in health sector, training of doctors and physicians about the IT-usage is essential for sustainability and prevention regarding failures of IT-applications in healthcare organizations of developing nations. The failure rate of IT-health projects in developing countries is much higher than the developed nations because of insufficient and proper IT-professionals and their information about IT-applications. Another author explains that shortage of training programs and activities make IT-professionals in hospitals to avoid the usage of e-health systems and consequently resources are wasted without any advantages of IT-applications in health sector (Indjikian & Siegel, 2005).

Most of the hospitals in developing countries have huge data but lack the ability to process and analyze the same by using IT for rational decisions. Therefore there is a need for a proper training to the users of IT-applications for successful use of the same. According to Chetley (2006) IT can be helpful in healthcare sectors of developing states for effective planning, controlling, and communicating the health-related information across all the different departments and sections of a hospital. Further they speak out for the training of IT-professionals to effectively use all IT-applications for healthcare. Training improves knowledge and skills of IT-professionals working in hospitals therefore different training and learning programs for healthcare providers must be arranged on regular intervals/basis. According to (Qazi & Ali, 2009) training should be a customary feature in hospitals and doctors and physicians must be given training at least once in a year. Furthermore during training programs, the importance of IT must be emphasized because trainees do not possess fuller level awareness about different features of information technologies for healthcare.

Enhanced abilities via proper training and interest of doctors in IT- applications specifically the internet ensures success of IT in healthcare organizations. According to Asangansi et al., (2008) internet training must be given to doctors for more and better communication and relationships with physicians of advanced nations via internet and video conferencing for the conduction of their healthcare practices in an ideal manner. Qaisar & Khan (2010) are of the view that IT-professionals with proper skills, is key aspect for effective use of IT. Therefore training and development side of physicians and doctors cannot be neglected for success and effective usage of IT in healthcare organizations.

## **3. Research Methodology**

In this study literature survey from the existing sources was done. After exhausting the relevant sources of information, in next step a Computer based software ATLAS.ti was used for qualitative data analysis. The main concepts and variables were fed into ATLAS.ti for coding, extraction of quotes and memos creation. Furthermore, like experts of qualitative research, we also examined, categorized, tabulated and recombined the data for analysis. We used hermeneutics (James, 1992), discourse (Max, 1990) and heuristic (Moustakas, 1990) analyses to find the fact. The below figure demonstrates the relationship between the independent variables (Hospital Administrator and Technology) and the dependent variable (IT-usage). This model is the conceptual framework of the questions addressed in the current paper.



#### 4. Discussion

The above mentioned secondary data discloses that the hospital administrators interest and support create the healthcare providers' personal interest and the acceptance of IT-projects in hospitals (Koen & Roger, 2002). For the successful adoption and use of IT, hospital administrators must evaluate and estimate the IT-projects in all the possible dimensions for the success and failure of the same (Kundi et al., 2012; Jeremy & Sylvia, 2003). The concern and satisfactoriness of IT by executives of hospitals has to be there before persuading the doctors and physicians and this is possible only if the administrator is well aware of the benefits that he can get by introducing new technologies (Sajjad et al., 2009). This study also contributes significantly to the identification of technology (hardware and software) as one of the leading factors for IT-usage in public sector healthcare organization. According to Michel & Betty (2003), public sector organizations do not adopt technology in accordance with their existing work patterns and requirements. It is well documented that IT can affect every function within the organization. Unlike other technological breakthroughs such as steam powers or electricity, IT is capable of transforming the production and distribution of entire industries, services and organizational functions, but it also offers a vast range of new products and services of its own. In addition to all these, the internet has itself become a new market place and directly affects what executives do every day, ranging from locating a new supplier at the best price to coordinating a project of the world for collecting and managing customers data (Luthans, 2002: 39; Goel, 2003: 724). However, despite such theoretical assertions this study found limited adoption and use of IT for decision making especially in public health organizations. It is due to financial constraints, lack of proper training and poor monitoring system.

#### 5. Conclusions

IT (Information Technology) in healthcare organizations is a current and modern chance to solve many health-related problems. IT has created such devices which are uniformly usable by both the developed and low income nations. Healthcare information systems are now available all over the world with affordable prices, but computerization of healthcare institutions is more social than technical process where the readiness of hospital administrators/executives along with acceptance and the tolerability of healthcare providers (expected users) are very important. To increase the acceptability of doctors and physicians for IT-applications in public sector hospitals, the favor and interest of hospital administrators is important for the successful IT-usage in government hospitals. As administrators of public sector hospitals, generate and maintain the environment where the healthcare staff is encouraged to adopt their healthcare routine practices according to the healthcare-systems introduced in hospitals.

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