

UNDERSTANDING THE PREDICTORS OF ADOPTION OF IoT HEALTHCARE SERVICES

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THESIS ABSTRACT

IoT is a world-wide network of interconnected objects uniquely addressable, based on standard communication protocols. IoT in healthcare provides timely and increased, nearly instantaneous communication between physicians, hospitals, vendors, insurance companies and other stakeholders via interconnected devices, wireless networks and related IT companies that provide support for data analytics for alleviating and ameliorating the lives of patients in particular and other stakeholders in general. IoT based healthcare services can be instrumental in saving lives in case of accidents as the golden hour requires communicating to the hospitals regarding the location and nature of the emergency and the patient's health statistics. IoT, with its interconnected and possible real-time transmission of the health parameters of the patients, can help the patients in case of accidents and other acute health attacks such as stroke and cardiac arrests.

Healthcare is an information-intensive industry and healthcare professionals rely on access to comprehensive and accurate information, at the point of care, to make the daily decisions about a person's care. IoT applied to the healthcare sector (IoT healthcare) promises to bring marked changes in the quality, safety, accountability, and even the way in which healthcare services are delivered. Although still

in its initial stages of development, the impact of IoT in healthcare has been significant. Recent studies found that IoT healthcare will add about \$117 billion to the global healthcare economy by 2020. IoT devices offer heightened accountability for healthcare providers. They also improve the outcomes and reduce the ballooning costs which are the main aims of health care advocates, policymakers, and insurance companies.

In light of the huge benefits that IoT promises to bring to the healthcare sector and the prediction of a booming market for IoT healthcare, we did a literature review of IoT healthcare services. We found that there is a paucity of research on physician's and patient's adoption of this technology, who are the two main stakeholders of the healthcare ecosystem. Such a technology adoption research is required to understand the factors that support the adoption of new technology and also understand the barriers that inhibit the adoption of the technology. It has been observed that technology innovations often fail to be fully utilized because less attention is given to user acceptance. Borrowing from the adoption literature, we aim to develop and test models of IoT acceptance for physicians and patients from an Indian Context.

The main research problems that we wish to address in our work are as follows:

- What are the antecedents of the physician's adoption of IoT healthcare services?
- What are the factors that lead to the patient's adoption of IoT healthcare services?
- What are the types of IoT services that need to be deployed on a priority basis to accelerate the IoT healthcare service adoption?

We conducted survey research to collect data from the physicians and patients and triangulated our findings using qualitative interviews.

The expected outcomes of the research are as follows:

- The research will help the stakeholders of the IoT Healthcare business to know the critical factors which need to be addressed in order to accomplish increased adoption of the IoT healthcare services.
- The research will provide empirical evidence of the factors that strongly affect the patient's and physician's adoption of IoT healthcare services.
- The research will add to the theory of adoption by contextualizing the adoption model in the context of IoT healthcare services.
- The research provides a roadmap for the deployment of the IoT healthcare services to accelerate their adoption by the stakeholders of healthcare.
- The research will lead to theoretical, managerial and policy implications.