

# Chapter 49

## Effect of Mobile Phone SMS on M–Health: An Analysis of Consumer Perceptions

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### ABSTRACT

*This chapter is engaged in identifying consumer perceptions regarding short message service (SMS) of the mobile phone as an alternative service delivery channel for Mobile-health (M-health) and studying the cultural impact of this change. In this connection, the Unified Theory of Acceptance and Use of Technology (UTAUT) model was used as the theoretical base to perceive consumer perceptions about M-health. The authors have performed an empirical study of diabetic patients in Bangladesh and Canada. Path analysis was conducted on the results of both samples. Analysis results confirmed that the UTAUT model fits quite nicely in predicting consumer perceptions of M-health-driven mobile technology. It also acknowledged that differences in cultural traits have an impact on consumer behavior.*

### INTRODUCTION

Globalization, economic development, regular monitoring of the human development index, health consciousness, and soaring life expectancy are factors that voluntarily and forcibly push and diffuse the healthcare service system worldwide. Many consumers are now extremely concerned about better service quality of the healthcare system as they are not satisfied with the present health service delivery

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system. In this context, health service providers, including physicians, are very interested in exploring the integration and application of different technological interfaces of information and communication technology in the service delivery system of modern healthcare. One of many possible opportunities to be applied in the service delivery of healthcare, which many practitioners are recently exploring, is the application of a mobile phone-based message system, such as short message service (SMS), as the newest addition to the service delivery system of better quality healthcare. In this present effort to reveal the effectiveness of modern technology on the healthcare system, the current study is engaged in identifying customer perceptions of SMS as a service delivery channel for modern healthcare, which we termed here as Mobile-health or M-health.

Mobile-health or M-health can be defined as providing right healthcare service at right time continuously to any remote patients without hampering their regular lifestyle. In this service system patients' physical presence in hospitals, clinics, and/or doctors chambers is not required. They will be communicated through ICT-driven wireless systems, software, and health monitoring devices. Several wireless communication systems can be used for medical professionals' interaction with patients like, any kind of smartphones, body sensors containing accelerometers, pedometers, electrocardiograms, pulse oximeters, blood-glucose meters, weight scales, etc. Other required technologies may include SMS, multimedia messaging service (MMS); remote communicators and location tracking technology like radio frequency identification (RFID); GPS etc.; data processing tools like personal data assistant (PDA), pocket PC, palm and laptop as well as wireless network like the WiFi Internet network. Through sensor, the patient's health conditions will be monitored, recorded, and analyzed. And then through connected smartphone, essential information will be continuously transferred to medical professionals from a remote place. Medical professionals will receive any data, related to patients' health condition, through their laptop, tablet PC, PDA, or other wireless-based Internet communication. This communication will be a continuous regular pattern; however, if urgent advice is required due to any deteriorating health conditions of the patients, two-way communication will be established through SMS from physicians.

M-health researcher Kahn et al. (2010) illustrated: "Innovative applications of mobile technology to existing healthcare delivery and monitoring systems offer great promise for improving the quality of life." Since the beginning of modern information and communications technology (ICT), wireless communication, electronic health recording, and monitoring devices predominate in a major driving role of the technological and social beliefs of consumer decision-making processes and their complex buying behavior. This is composed of the cognitive, affective, and conative, or behavioral, components of attitude, which play a significantly comprehensive role in accepting an ICT-driven healthcare system. Theorizing this integrated health and technological adoption behavior for consumer complex buying behavior has the potential to help us discover better future designs of a culture and market economy governed by ICT for an innovative and revolutionary M-health system.

Consumers generally are not engaged in buying or pursuing M-health as a regular product. Its purchase frequency, oriented with only a small number of patients, is insignificant to general consumers. In the M-health service system, self-service technology is predominant and this needs extensive self-explanatory skills. From the perspective of a health-concerned matter, M-health-related issues potentially deserve a higher consideration from consumers in the light of usage (Yu et al., 2006). Therefore, the systematic adoption of M-health necessitates a complex buying behavior, and consumers must integrate several different ideas to justify their decision to receive M-health services.

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