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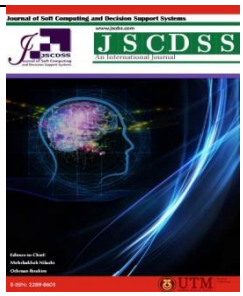

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Examining the Factors for Wearable Healthcare Devices Adoption in the Event of COVID-19: A Classification and Regression Tree Approach

Mehrbakhsh Nilashi [a,*], Motahareh Yousefnejad Lazarjani [b], Eko Supriyanto [a], Fahad Ghabban [c], Shahla Asadi [d], Rabab Ali Abumalloh [e], Sarminah Samad [f]

[a] School of Biomedical Engineering and Health Sciences, Faculty of Engineering, Universiti Teknologi Malaysia, 81310, Skudai, Johor, Malaysia
[b] Department of Architecture, University Campus 2, University of Guilan, Guilan, Iran
[c] Faculty of Computer Science and Engineering, Information System Department, Taibah University, Madinah, 41411, Saudi Arabia
[d] Centre of Software Technology and Management, Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia, 43600, Bangi, Selangor, Malaysia
[e] Computer Department, Community College, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia
[f] Department of Business Administration, College of Business and Administration, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia

*** Corresponding author email address**: nilashidotnet@hotmail.com

Abstract

Wearable devices have attracted a great deal of attention and popularity among academics and decision-makers in the last decade. The potential of wearable technology to improve health efficiency and cut healthcare costs has been demonstrated in several studies. Wearable devices have a great value for detecting, tracking, and controlling the spread of infectious diseases such as COVID-19. Based on the confirmation of expectations and technology acceptance theories, this study has developed a theoretical model to study user perceptions of wearable healthcare devices. The data collected from 163 study samples were examined using the Classification and Regression Tree (CART) technique. The study results showed that the security and privacy factor is important for the adoption of wearable healthcare devices in the event of COVID-19.

Keywords: Consumer continuance intention, Wearable healthcare devices, Security and privacy, Adoption, COVID-19

1. Introduction

IoT is a network of physical objects that are supported by embedded data communication and sensor technologies to interact with the environment of both internal and external objects (Haghi, Thurow, & Stoll, 2017). Wearable health monitoring systems can be considered as the next generation of personal portable devices for telemedical practices. These systems are designed to monitor various kinds of biological signals released by people through saliva, urine, respiration and epidemic skin transpiration. Users can monitor their health conditions (e.g, sleep, burning calories, heart rate, and distance travelling) in real-time by adopting an appropriate fitness wearable device (Asadi, Abdullah, Safaei, & Nazir, 2019). Two major reasons are making wearable trackers more and more popular. First, during the daily workout, people can be encouraged to perform more training while providing smartphone activity measurement information without manual calculation (Manimaraboopathy, Vijayalakshmi, Hemavathy, & Priya, 2017). Second, wearable devices are used to collect and track data, in which specific healthcare applications are used to process data and export them (Weng, 2016). Hence, wearable devices are therefore not just a type of hardware, they present powerful characteristics through utilizing the web and mobile applications and allowing users to interact with data collected by devices.

Progress in the field of sensors and communication technology has allowed the use of wearable health devices to continuously monitor the different physiological conditions. Based on the study by Fotiadis, Glaros, and Likas (2006), wearable medical devices can be defined as self-supporting and non-invasive devices that fulfil a certain medical function like monitoring or assistance. The wearable medical devices can be carried or included in a