

Wearable Technologies: The Motivational Impacts On Individual Well-Being

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Abstract

In recent times, wearable technologies are becoming a social standard. Specifically, wearable fitness devices (WFD) are gaining momentum and popularity with a great number of consumers owning and using some form of a wearable technology daily. With various types of WFDs in the wearable technology market, most are portable and offer considerable promise for helping individuals keep track of their physical activity and adopt healthier lifestyles. Yet, Americans still tend to suffer from obesity and major health illnesses. Thus, one may wonder why is it that WFDs are failing the user and not holding up to its promises? Our research will explore this phenomenon by investigating the use of WFDs. We will collect qualitative data in order to gain a better understanding about WFDs. Our results will have the potential to shed light on the motivational factors of WFD usage and its impact on individual well-being.

Keywords (Required)

Wearable technologies, motivation, well-being, fitness tracking device, health information technology.

Introduction

Recently, wearable technologies inclusive of smartwatches and fitness tracking devices are becoming a social standard. Particularly, wearable technologies are gaining momentum for their potential to improve well-being and health (El-Gayar, Nasrallah, and Noshokaty 2019). It is known that one in six consumers own and use some form of a wearable technology (Piwek et al 2016). With recent technological advances that drive wearable technologies, individuals wish to apply these types of hardware to enhance their personal well-being (Witte and Zarnekow 2019). Thus, wearable technologies are playing a major role in individuals, organizational wellness programs, and collegiate sports programs. Various types of wearable fitness devices (WFD) - iWatch, FitBit, Garmin, and others - represent the most popular type of wearable technologies. Manufacturers of such devices wish to help individuals live healthier lives and promote the various health indicators and sensors embedded into the devices. Although WFDs can be effective in motivating people to be healthier and active, many consumers are abandoning WFDs soon after purchase (Rupp, Michaelis, McConnell, and Smither 2018). Discontinuance of WFDs may vary and include reasons such as loss of interest of the WFD, discomfort with the device, or forgetting to wear the WFD (e.g., Fox, Garland, Keibel, and Saxon 2017). Because sustained health benefits from WFDs is difficult to assess when users decide to abandon WFDs, it is important to understand why users decide to continue to use or abandon WFDs. Most individuals are driven by some internal or external factors that influence their behaviors. Sustainment in developing a healthy habit, such as wearing a WFD to hold oneself accountable to meeting a health goal is reliant on some level of self-motivation.

Thus, motivation becomes an integral part in understanding the use of WFDs. Motivation is the driving force behind the individuals' willingness and desire to engage in a behavior that guides them toward a specific goal (Macinnis, Moorman, and Jaworski 1991). Because people develop an inclination for specific behaviors, it is important to consider the motivational factors that influence people to use wearable technologies. Wearable devices have the potential for improving an individual's health through its real-time data monitoring capabilities (heart rate, nutrition status, motion, sleep patterns, and others) as well as provide individuals with social aspects to boost competition or goal settings with family and friends.

Yet, a large number of individuals do not seem to maintain a level of motivation to guide their behavior to long-term use of WFDs. In spite of recent trends of research streams focusing on wearable technologies in the healthcare industry, little is known about the motivational forces that guide individuals to make significant behavioral changes for healthier lifestyles and continual use of WFDs. We seek to fill this research gap by investigating the following question:

What factors determine an individual's continual use of wearable fitness devices for their well-being?

Given the proliferation of WFDs, research on the motivational factors of these technologies is needed. In order to investigate this research question, we will conduct an exploratory study in 2019 about participants that were provided a Fitbit device as part of this study. In the following sections, we provide some background literature on WFDs and motivation. Then, we describe our research plan. Next, we present specific areas of interest and conclude by discussing implications on research and practice.

Wearable Fitness Devices

In recent years, WFDs have become a part of every day life for many individuals. WFDs are portable and can be worn on wristbands and watches where step counting is the main function. Other main uses of WFDs include the tracking of heart rate, calories burned, distance, and sleep quality. By adopting and using a WFD, individuals are able to monitor their health conditions and be informed about their physical activity on a daily basis. As one of the growing technologies, research has indicated that WFDs promotes longer periods of activity (Walden and Sell 2017), encourages users to make healthier choices, (Etkin 2016), serves as a persuasive and behavioral change support system (Mercer, Giangregorio, Burns, and Grindrod 2016), and has the potential to confirm individual identity (Giddens, Gonzalez, and Leidner 2016). Yet, challenges remain for sustainable and continual use of WFDs (El-Gayar et al 2019).

In 2019, 86.7 million United States adults are using a WFD, which is a 5.67% increase from 2018 (statista.com). According to Gartner, end-user spending on WFDs is forecasted to reach \$42 billion by the end of the 2019, of which \$16.2 billion will be spent on smartwatches (Draper, 2018). Thus, advertising spending from vendors of wearable technologies is expected to reach \$68.7 million by the end of 2019 (Juniper Research 2017). With continual momentum, 167 million units of WFDs are predicted to be shipped globally by 2022 (statista.com).

Because WFDs enable self-tracking and monitoring of one's health, manufacturers of WFDs are putting more effort towards marketing their device as one that can be instrumental in achieving one's health goals. For example, most WFDs are marketed as devices that help individuals lose weight. The enhancements and innovations in today's wearable technology, combined with the availability of self-tracking data, provides an opportunity for WFDs to offer much promise for improving health and fitness behavior to the user. Consequently, some WFDs (e.g., Fitbit and Apple iWatch) have gained a strong presence in the fitness and health market over the last few years (statista.com) that there is a significant emphasis by the wearable industry to continue to promote and grow the market of these devices.

Yet, the proliferation of wearable technologies coincides with a worldwide issue of obesity and poor health. In the United States, 80% of adults do not meet the government's national recommendations for aerobic activity and muscle strengthening (hhs.gov). Thus, one may wonder how does this happen during a time when wearable technology consumption continues to grow and become mainstream? We argue that motivation is the driving force that determines the impact of WFDs on healthy behavioral change.

Motivation of Health-Related Technology Use

Information systems research (e.g., Bhattacharjee et al 2008; Venkatesh et al 2009; Davis et al 1992) have studied the driving forces influencing an individual's decision for continual use of a technology as well as user acceptance of technologies. Because various forms of technologies are emerging for health-related purposes, understanding the motivational factors that influence the use of such technologies becomes critical. Generally, people who experience a level of health-related uncertainty and a desire to maintain themselves in good health develop a need for more understanding of their particular situation (Mishel

1990, Brashers, Goldsmith, and Hsieh 2002; Gonzalez, Mitra, and Turel 2018). Specifically, people begin to leverage various technologies (e.g., conduct online health searches) in order to become more informed about a health condition prior to taking action. With recent wearable technology advances (e.g., self-tracking features and monitoring of physical activity), WFDs enable users to gain new knowledge about their health condition and minimize uncertainty. Technologies that help fill a health-related need provide a sense of empowerment to individuals that desire to take control over their health and improve their lifestyle.

Technology use for achieving better health is slowly growing, but not well understood (Gonzalez et al 2018). Although higher levels of health-related uncertainties may spark a greater motivation for individuals to use technologies (e.g., WFDs or mobile applications), the use of the technology itself does not make the individual healthier. Notably, a number of WFDs offer a variety of features that allow users to set physical activity goals, receive prompts or alerts when inactive, join weekly challenges with others, or receive feedback on daily achievements. However, when individuals use technologies to self-manage their health, it is crucial for them to have a sense of control over their situation. The level of control within the individual may determine the motivation and effort put forth in goal setting and commitment to achieving the goal. Thus, manufacturers of WFDs need to be more responsive to the user's individual needs in order to make a meaningful impact and increase the individual's motivation for the use of the technology.

Research Plan

We want to conduct this study as the means to further inform this area of research in a richer sense through qualitative data. We plan to conduct our study in Spring 2019 by sending out an electronic questionnaire to all participants who were provided a Fitbit device as part of the study. The focus of the questionnaire will be to acquire updated information about the participant, their sense of well-being before and after using the Fitbit, changes they have made to their daily routines, their level of activity, and their extent of use of the Fitbit and its features. In addition, the questionnaire will contain some open-ended questions for all participants to further provide details and explanations as to why or why not they have continued to use the FitBit. Our participants vary in age, gender, employment status, and geographic location. Our plan is to have collected the questionnaire data by May 2019. Thus, we will have a sense of the data and initial findings before AMCIS in August 2019.

Focus of the Study

The goal of this study is to investigate and explore both positive and negative impacts of WFDs on individuals over a period of time. It is our goal to have qualitative data that will provide a deeper understanding about WFD usage and its impact on the individual. We are interested in gaining an understanding about WFDs usage and identifying the factors that determine the inclination individuals have developed towards the device. Specifically, we will ask participants about their motivation and individual well-being.

Motivation

In this study, motivational factors influencing WFD usage is of particular interest. Because motivation is an instrumental driver for human behavior, this study will ask participants to discuss the needs being met by the device and issues or concerns with the device. Motivation represents the reasoning as to why individuals choose to partake in specific behaviors (Pardee 1990). Also, motivation relies on the notion that actions may be driven by human needs. According to Maslow's hierarchy of needs, people's needs in one area have to be met in order to be intrinsically motivated to continue to fill other needs (Maslow, 1934). As such, a broad range of needs (e.g. basic, psychological, or physiological) could drive people to use various technologies and partake in certain human behavior (Gonzalez et al 2018). Given that WFDs were developed with the purpose to motivate individuals to be healthier, the motivational lens allows us to better understand WFD usage. In particular, we strive to understand the motivational forces (e.g., needs being met by WFDs) that may influence the individual's actions for better health.

Individual Well-Being

Another area of interest in our study is individual well-being. Contrary to one's belief that well-being is solely dependent on health condition, well-being extends beyond the notion of health and embodies various factors that create a condition or sense of positiveness about one's life. In general, individuals achieve well-being when their needs are met. This can mean something different for each person and may include physical, mental, social, economical, and emotional needs. In other words, individuals will take action and make choices aimed at achieving a sense of accomplishment, personal fulfillment, mental or physical vitality, and social satisfaction (Naci and Ioannidis 2015). When individuals' needs are met or satisfied, their sense of well-being is enhanced. Because WFDs promote a sense of positivity by helping users to achieve physical goals and take control of their health, it is important to consider the factors that lead people to experience such levels of achievement. The notion behind WFDs is to lead individuals to experience their lives in positive versus negative ways, which can be thought of individual well-being or subjective well-being. Yet, the discontinuance of WFDs implies that individuals become dissatisfied and may be experiencing negative outcomes. Research has found that self-quantifying mechanisms could reduce the enjoyment of partaking in health-related activities and decrease their state of well-being (Etkin 2016). Therefore, this topic will help us gain a better understanding of how WFDs might be creating negative sense of well-being rather than the positive outcome which they are intended for.

Conclusion

It is estimated that over 500 million WFDs will be sold to consumers by 2020 (Levy 2015). Considering that WFDs are the leading devices in the wearable technology market, it is important for research on this phenomenon to continue (Giddens et al 2016). Specifically, the relationship between WFD usage and motivational factors driving human behavior are complex and not well understood. Thus, we strive to understand the impacts of WFDs on individuals. We believe this study will have important implications to manufacturers of such devices and organizations wishing to use WFDs for health related initiatives. Our research has the potential to shed light on WFD usage and its impact on individual well-being. Ultimately, this study will provide insights on the motivational drivers that can either increase or decrease the effectiveness of WFDs to promote healthier lifestyles, which can influence individual choices about the value and continual use of such devices.

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