International Journal of Technology and Human Interaction
Volume 17 • Issue 1 • January-March 2021

Which Is More Important in Fitness Apps, Continuance, Satisfaction, or Attitude Loyalty?

A Multiple Mediation Model Based on S-O-R

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ABSTRACT

The purpose of this study is to investigate the influencing mechanism of perceived usefulness (PU) on continuance usage of fitness Apps (CUFA) and moderating role of fitness mobility in the CUFA. This study advances a multiple mediation model with a moderator based on stimulus-organic-response (S-O-R). Three hundred fifty-four respondents from China were used to examine the research hypotheses in PLS method. The results verify that PU plays an important role in the mobile fitness. In addition, PU fully influences CUFA through attitude loyalty and satisfaction-attitude loyalty, respectively. However, satisfaction does not mediate PU on CUFA. The results suggest that only satisfying fitness Apps is not enough for maintaining the mobile fitness and users' attitude loyalty is more important. Moreover, fitness mobility negatively moderates the relationship between attitude loyalty and CUFA, revealing the boundary condition in the CUFA behavior.

KEYWORDS

Attitude Loyalty, Continuance Usage of Fitness Apps, Fitness Mobility, Multiple Mediation Effects, Perceived Usefulness, Satisfaction

INTRODUCTION

With the rapid development of mobile applications worldwide in recent years, using mobile applications has become popular in users' daily life (Hajiheydari & Ashkani, 2018; Sun et al., 2017). However, the numbers of monthly active users of mobile fitness apps is lower than that of other apps (e.g., instant message apps-Wechat). For example, the numbers of users of Yuedongquan and Keep, the top two fitness apps in China, were 10.475 million and 10.213 million in March, 2018, respectively, compared with WeChat, which had 905.925 million users (Askci, 2018). In fact, like the other mobile applications used by large-scale users, fitness apps provide enough functions for users' health and fitness (e.g., body shaping and muscle building). Moreover, mobile fitness is a better way for users

DOI: 10.4018/IJTHI.2021010107

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to work out at suitable locations and times without needing to go to fitness centers. Therefore, this phenomenon attracts the authors' attention.

Sufficient research in CU supports the point that CU is important for the long-term development of information systems (Bhattacherjee, 2001; Hsiao, Chang, & Tang, 2016). Some studies showed that perceived usefulness (PU) regarding information system is an important determinant of CU (Bhattacherjee, 2001; Dehghani, 2018). In addition, stimulus-organic-response (S-O-R) theory explains how stimuli act on an organism, which in turn causes a particular behavior (Donovan & Rossiter, 1982). Studies on S-O-R clearly reveal the impact process of a stimulus on an individual's behavior (Eroglu, Machleit, & Davis, 2001; Eroglu, Machleit, & Davis, 2003). However, studies seldom focus on how PU influences CU based on the S-O-R model in CU. In the mobile fitness context, fitness apps provide numerous functions that can be regarded as potential stimulus sources, and only the functions that users have perceived usefulness can be the real stimulus for fitness apps users (Lin & Hu, 2006). Therefore, the authors will consider PU as the stimulus for fitness apps users and the behavior of continuance usage of fitness apps (CUFA) as the response based on the S-O-R model to explore the influence mechanism of PU on CUFA. In this study, PU refers to the prospective user's subjective probability that using fitness apps will increase his or her health and fitness benefit (Davis, Bagozzii, & Warshaw, 1989). CUFA refers to the users' continued use of fitness apps for a period after adoption (Limayem & Cheung, 2008; Limayem, Hirt, & Cheung, 2007).

To conduct this study, the authors introduce satisfaction and attitude-based loyalty as organic to depict the users' internal states after they are stimulated based on the S-O-R model. "Satisfaction is viewed as the key to building and retaining a loyal base of long-term consumers," which underscores a psychological or affective state in CU (Bhattacherjee, 2001). Attitude-based loyalty can be used to depict the psychological meaning of loyalty, such as preference or intention of repurchasing (McMullan & Gilmore, 2008; Oliver, 1999). Some studies closely link user satisfaction and loyalty (Chiua, Linb, Sunc, & Hsuc, 2009; Hew, Lee, Ooi, & Lin, 2016). In this study, satisfaction is operationally defined as the degree of user affect with (feelings about) fitness apps use (Bhattacherjee, 2001). Attitude-based loyalty is operationally defined as user intention or preference regarding fitness apps use (Ozturk, Bilgihan, Nusair, & Okumus, 2016).

In addition, in the mobile fitness context, although mobility is ubiquitous in an increasingly mobile society, and fitness apps services can be used anytime and anywhere, there is still a significant difference in the mobility of fitness for different users (Chaouali, 2016; Schierz, Schilke, & Wirtz, 2010). Different levels of mobility can form different mobile fitness environments. According to the environment–behavior relationship theory (E-BRT), in different environments, user' internal cognitions and behaviors differ (Bell, Greene, Fisher, & Baum, 2009). Hence, the authors introduce fitness mobility into the research model as a moderator to explore the boundary condition in CUFA behavior. In this study, fitness mobility refers to the degree to which fitness apps for health and fitness regardless of time and place (Kim, Mirusmonov, & Lee, 2010).

The purpose of the current study is to investigate the influencing process of PU on CUFA and the moderating effect of fitness mobility on CUFA behavior. This study advances a multiple mediating model of CUFA based on the S-O-R model to explore how the stimulus influences CUFA behavior, thus enriching the CU literature. In addition, this study introduces satisfaction and attitude loyalty as mediators from affect and cognition dimensions to reflect different user psychological states toward CUFA, providing insight into the understanding of CUFA behavior. Moreover, this study considers fitness mobility as a moderator based on E-BRT to explore the boundary condition in CUFA behavior, thus enriching the knowledge of mobility.

The paper structure is as follows. After exploring the theoretical background, the authors propose the research hypotheses and advance a research model of CUMT based on S-O-R model. In methods section, the authors describe how to design and survey the questionnaire and analyze the collected data. In results section, after analyzing the reliability and validity of the sample, the authors test the multiple mediating effects on the basic model and the moderator effect of fitness mobility in the full

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