USING GAMIFICATION IN WEARABLES AND M-HEALTH APPLICATIONS TO MAXIMIZE CUSTOMER ENGAGEMENT

Melek Erdil
Maltepe University
Turkey
melekerdil@gmail.com

ABSTRACT

This paper aims to investigate the relationship between self-determination motives called as autonomy, competency, relatedness and customer engagement, and test whether they are mediated by gamified wearables and mHealth app use. Data of 152 respondents were collected through online questionnaire. The respondents consisted of consumers who have wearable fitness trackers or smart watches and use these wearables' mHealth apps at the same time. Simple linear regression analysis and multiple linear regression analysis were applied following mediation paths to test the hypothesis. The results indicate that there is a significant relationship between self-determination motives and customer engagement. The relationship is partially mediated with gamified wearables and mHealth apps use. The findings offer scholars a recognition of consumer motivations for using gamified wearables and mHealth apps which might possibly lead to customer engagement. For retailers, they provide an understanding to boost customer engagement by providing especially intirinsic motivation related gamification elements in apps. In consumer behavior research field, this paper fills the gap by testing the effects of gamification in users who both use wearable fitness trackers and mHealth apps at the same time.

Keywords: Gamification, wearable fitness tracker, mHealth, customer engagement

JEL Classification: M30, M31, M39

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INTRODUCTION

Gamification is a new concept which consists of using game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems (Kapp, 2012). There are many studies testing the effects of gamification and mHealth apps use in health sector which will possibly lead to an intended positive behavior change in individuals' health behaviors (Cheatham et al., 2017; Renfree et al., 2016; Kumar and Pansari, 2016). Wearable fitness trackers and mHealth apps boost motivation through rewards that will enhance usage, create dependency and finally achieve customer loyalty. The purpose of this research is to understand whether using gamified wearables and their mHealth apps mediates the assumed relationship between self-determination theory and customer engagement. An overview of literature will be provided followed by the methodology and findings of the study.

1. LITERATURE REVIEW

1.1. Self-Determination Theory

Self-determination theory which is developed by Deci and Ryan (2008) consists of autonomy, competence and relatedness.

Autonomy: people have a need to feel that they are the masters of their own destiny and that they have at least some control over their lives; most importantly, people have a need to feel that they are in control of their own behavior.

Competence: another need concerns our achievements, knowledge, and skills; people have a need to build their competence and develop mastery over tasks that are important to them.

Relatedness: people need to have a sense of belonging and connectedness with others; each of us needs other people to some degree.

1.2. Wearable Fitness Tracker

Wearable fitness tracker is a device or application for monitoring and tracking fitness-related metrics such as distance walked or run, calorie consumption, and in some cases heartbeat and quality of sleep (Henriksen et al., 2018).

1.3. Gamification

Gamification involves using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems (Kapp, 2012). Elements of gamification are achievements, avatars, badges, boss fights, collections, combat, content unlocking, gifting, leaderboards, levels, points, quests, social graphs, teams and virtual goods (Bucley and Doyle, 2017)

1.4. mHealth Applications

mHealth is healthcare that, in some form, is supported by mobile means (Liu et al., 2013). mHealth or mobile health as medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices (WHO, 2011).

1.5. Customer Engagement

Customer engagement involves the intensity of an individual's participation and connection with organization's offering and activities initiated by either the customer or the organization (Vivek et al., 2012).

2. METHODOLOGY

Convenience sampling as a type of non-probability sampling was used for the objectives of this study. An online questionnaire was distributed through e-mail based groups, forums and social media. The survey began with brief descriptions of wearable fitness trackers and mHealth applications. Then, the respondents were asked whether they had a wearable fitness tracker and used its mHealth app at least once in their lives. The people, who answered negatively to this question, were eliminated. Only the participants who used these two things were chosen for the study. At the end, 152 completed questionnaires were obtained. Since, all the questions in the survey were compulsory to answer; no questionnaire was excluded. All the data was statistically tested and analyzed on SPSS 22. Simple linear regression analysis and multiple linear regression analysis were used to investigate mediating effect of gamified wearables and their mHealth applications usage on supposed relationship between self-determination theory and customer engagement.

3. FINDINGS

The majority of the respondents were male (64%), aged between 31-40 (46%), married (57%), undergraduate (54%), employed for wages (48%) and have a monthly income between 5001 TRY and above (32%).

The mediating effect was tested through regression analysis. In step 1 customer engagement was regressed on autonomy, competence, relatedness and the relationship was positive and statistically significant (β=0.813, $p<0.01$), the model accounted for 83.4% of the variation. This supported the first condition for testing the effect of mediation. In step 2 gamified wearables and mHealth app use was regressed on autonomy, competence, relatedness and the relationship was positive and statistically significant (β=0.818, $p<0.01$), the model accounted for 85.2% of the variation. The second condition for testing the effect of mediation was fulfilled. In step 3 customer engagement was regressed on gamified wearable and mHealth app use and the relationship was positive and statistically significant (β=0.803, $p<0.01$), the model accounted for 85.5% of the variation. This supported the third condition for testing the effect of mediation. The success of the first three conditions for mediation testing lead to the conduct of the final test. Customer engagement was regressed on autonomy, competence, relatedness while controlling for the effect of gamified wearable and mHealth app to check for the significance of the resultant R^2 change. Statistical insignificance would imply full mediation. If not, it would be partial mediation. Gamified wearable and mHealth app use was loaded into block two in SPSS 22 program to control for its effect. Both the R change (R^2= 0.025) and the coefficients (β=0.566;0.412;0.549;0.698) were statistically significant ($p<0.05$) indicating partial mediation. Results are shown in Figure 1 below.

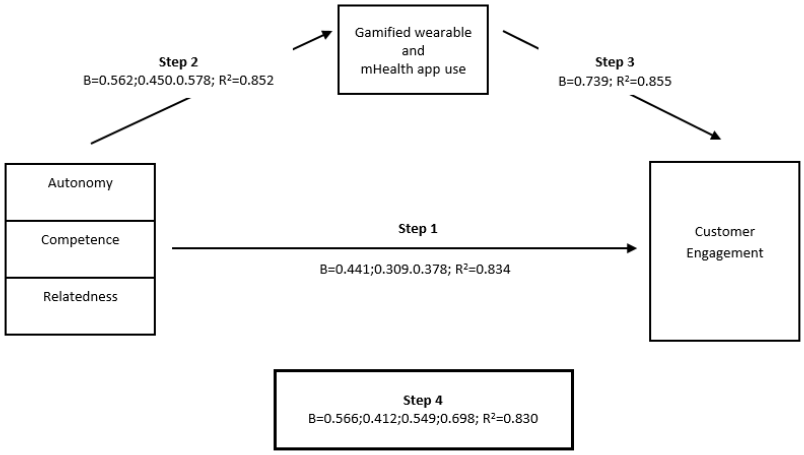

Figure 1. Summary Results of Mediation Testing

4. CONCLUSION

The key result of this study is the finding that using gamified wearables and their mHealth applications partially mediates the relationship between self-determination theory and customer engagement. By conducting study with actual users, it has been found that the bigger beta coefficient relating to autonomy (β= 0.566) compared to that of competence (β= 0.412) in step 4 implies that, other factors constant, consumers probably place slightly more emphasis on autonomy. Unlike studies testing either wearable fitness trackers usage or mHealth applications usage behavior, this study considers the complementary relationship between them and test their mediating effect. According to the results, gamification designers should design wearable fitness trackers and their mHealth applications so that they facilitate intrinsic motivation, specifically autonomy.

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