

Does Activity Tracking Technology Increase Employee Participation in Their Employer's Wellness Programs?: A Self-Regulation Theory Perspective

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Abstract

These days, many companies operate wellness programs to improve employee health and save health care costs. However, one important challenge for corporate wellness programs is that few employees participate in them in the long term. In this study, we are interested in understanding the effect of activity tracking technology such as Fitbit and Apple Watch on employees' continued participation in their employer's wellness programs such as walking challenges. This study also investigates how prizes for the participants of a wellness program and communications between the wellness program administrators and the participants affect employee participation in corporate wellness programs. We use the self-regulation theory (SRT) to hypothesize how those factors improve employee health, which in turn increases employee participation in future programs. To test our hypotheses, we collected multi-year data from an annual pedometer challenge program implemented by a major U.S. university. We discuss research methods and expected contributions of this research.

Keywords

Corporate wellness programs, self-regulation theory (SRT), activity tracking technology

Introduction

High health care cost has become a great burden to employers as it significantly affects their bottom line (Danna and Griffin 1999). Therefore, organizations strive to contain or reduce their health care cost by helping their employees stay healthy. Healthier employees are not only more productive but also less expensive as their health care cost is lower (Patrick Neumann and Dul 2010). One of the important tools that organizations use to improve their employees' health is internal wellness programs. Many corporate wellness programs are launched because employers want to help employees stay healthy, and they want to spend less on health care and improve employee productivity. Corporate wellness programs are a nearly \$8 billion industry in the U.S. and are expected to grow at about 7.8% through 2021 (Moran 2015). One important challenge for corporate wellness programs is that few employees participate in them in the long term. As a result, corporate wellness programs do not often realize the expected benefits. Therefore, it is important to understand how employers can sustain and increase their employees' participation in their wellness programs over a long period.

In this study, we are interested in understanding the effect of activity tracking technology such as Fitbit and Apple Watch on employees' continued participation in their employer's wellness programs such as walking challenges. Walking challenge is one of the popular corporate wellness programs as walking is the most commonly promoted form of physical activity and the most common type of leisure time activity (Rafferty et al. 2002). This technology can support continuous health monitoring, encourage healthy behaviors, and

provide personalized, localized, and on-demand interventions (Krishna et al. 2009; Patrick et al. 2008). Over 90% of companies use activity tracking technology and similar technology for their wellness programs (Wieczner 2013). Despite the wide adoption of activity tracking technology in corporate wellness programs, little is known about the technology's impact on employee participation in the wellness programs. This research addresses it. In addition to the role of technology, this study also investigates how prizes for the participants of a wellness program and communications between the wellness program administrators and the participants affect employee participation in corporate wellness programs. We use the self-regulation theory (SRT) to hypothesize how those factors improve employee health, which in turn increases employee participation in future programs. To test our hypotheses on the effect of those factors on employee participation in their employer's wellness programs, we collected data from an annual pedometer challenge program implemented by a major U.S. university.

Theoretical Background

Self-Regulation Theory (SRT)

The self-regulation theory (SRT) is a theory that explains the process by which an individual attempt to constrain unwanted urges in order to gain control of the early response (Baumeister and Vohs 2007). Self-regulation is defined as self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals (Zimmerman 2000). According to SRT, an individual goes through two distinct stages when he/she strives to attain a personal goal (Sitzmann et al. 2009; Winne 1996). In the first stage, an individual who is participating in a specific activity clarifies her task, sets goals, and plans to achieve those goals. At this stage, he/she investigates information about related activities, assesses motivation, and identifies obstacles to the goals. The goal and motivation set at this stage allow her to pay more attention to her performance. Motivation is an essential component in self-regulation of one's behavior in which he/she participates in certain activities to achieve his/her goal (Boekaerts and Cascallar 2006). The goal itself can motivate the individual, or other motivational factors may be involved. Both intrinsic motivation and extrinsic motivation affect an individual's behavior. Rewards or incentives that can be received through achievements are representative extrinsic motivation factors (Hagger 2010).

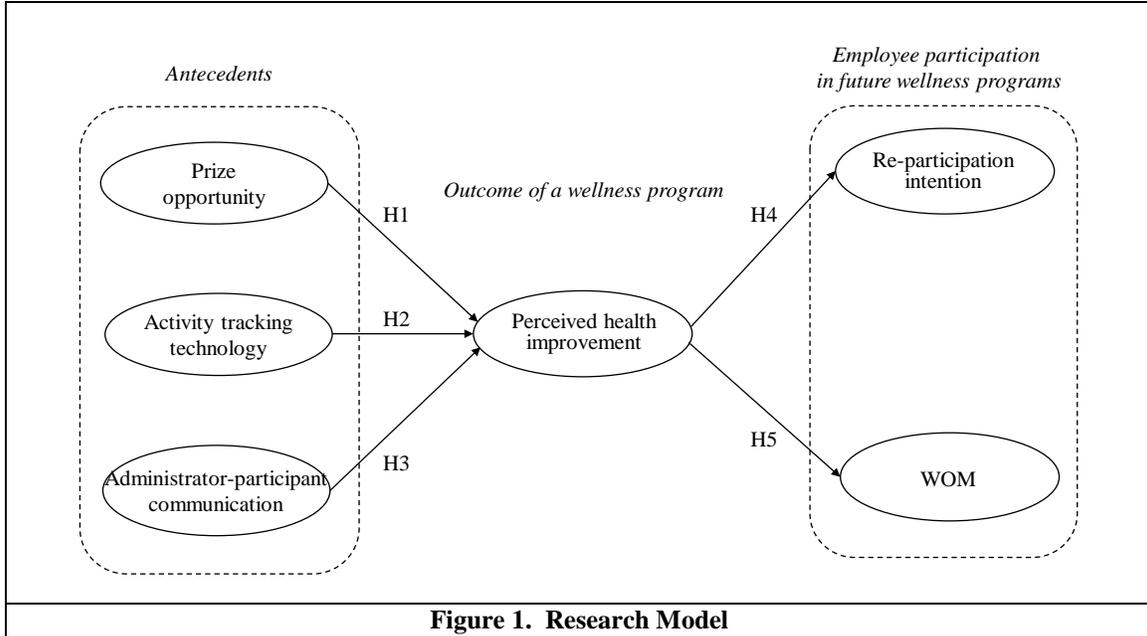
In the second stage, the individual applies specific tactics and strategies to achieve the set goal. At this stage, self-monitoring and self-evaluation are essential for self-regulating one's behavior. Self-monitoring is the allocation of attention to specific aspects of one's behavior. Self-regulation requires monitoring because it is challenging to regulate one's behavior without keeping track of his/her performance (Baumeister and Vohs 2007). Therefore, success in self-regulation depends on the fidelity and consistency of self-monitoring (Bandura 1991). Self-evaluation refers to the comparison of the current performance with one's desired goal (Sitzmann 2009). It evaluates the method or strategy that one uses to accomplish his/her goal by monitoring the current performance status or using feedback from others (Ley and Young 2001). Self-evaluation is closely tied to self-monitoring because one can modify his/her behavior based on the evaluation of his/her performance being monitored. In this study, we focus on three antecedents that are tied to motivation setting, self-monitoring, and self-evaluation and test how they affect perceived health improvement and help sustain and increase employee participation in a corporate wellness program.

The SRT has been applied to studies on health-related behaviors and situations (Bandura 2005; Hagger 2010; Maes and Karoly 2005; Mann et al. 2013). Prior studies focused on verification of change and influence of health behavior through self-regulation (Andrade et al. 2010; Knobloch-Westerwick et al. 2013) and the development of models and programs applying self-regulation (Sirois 2015; Wing et al. 2006). Most of these empirical studies used experiments or student data. In this study, we use the data from an employer's wellness program that has been operational for several years.

Research Model

In this study, we investigate how different factors affect health improvement as perceived by the wellness program participant and how perceived health improvement, in turn, affects the participant's intention to participate in future programs and his/her word-of-mouth (WOM) activities to encourage colleagues to participate in future programs. Drawing upon SRT, we identify prize opportunity, activity tracking technology, and administrator-participant communication as antecedents of perceived health

improvement. Re-participation intention and WOM can be thought of as measures of the success of wellness programs (DeVries III 2010; Goetzel and Ozminkowski 2008). Our research model is shown in Figure 1. We develop the following five hypotheses.



Prize opportunity refers to the extent to which the program provides the participants with opportunities for receiving prizes and rewards. Prize opportunity, which is an extrinsic motivation factor, can help the participants to set their goals and motivate them to regulate their behaviors to achieve the goals (Sitzmann et al. 2009; Winne 1996). Previous studies found that even small rewards such as t-shirts or water bottles can encourage healthy behaviors (DeVries III 2010) and result in health improvement (Chapman 2003). Therefore, we posit:

Hypothesis 1: Prize opportunity has a positive effect on perceived health improvement.

Activity tracking technology refers to the use of wearable activity tracking devices and digital platforms collecting data from the devices. Activity tracking technology allows for the participants to self-monitor and self-evaluate their performance, which in turn leads to self-regulated behaviors. Prior studies also found that technology provides people with more control over their behaviors (Sitzmann et al. 2006; Sitzmann et al. 2009). Therefore, we posit:

Hypothesis 2: Activity tracking technology has a positive effect on perceived health improvement.

Program administrator-participant communication refers to the extent to which the program participants interact with the program administrator and receive information regarding the program and participants' performance. Participants can evaluate their performance by the information received from the program administrator. Interactions with the program administrator can increase social value perceived by the program participants (Goetzel and Ozminkowski 2008) and the feedback from the administrator can motivate the participants to achieve their goals. As a result, administrator-participant communication can help participants regulate their behavior. Therefore, we posit:

Hypothesis 3: Program administrator-participant communication has a positive effect on perceived health improvement.

Perceived health improvement refers to the participant's perception of improvement in his/her health as a result of participating in a wellness program. Re-participation intention refers to the extent to which a participant intends to participate in future wellness programs. If the current participants perceive an improvement in their health by participating in a wellness program, they are more likely to participate in

future programs. Prior research finds that perceived value of participation is positively associated with the re-participation intention (Liao and Huang, 2013). Therefore, we posit:

Hypothesis 4: Perceived health improvement has a positive effect on re-participation intention.

WOM refers to the extent to which an individual communicates with others about their experiences and opinions about the wellness program. Participants who perceive their health to be improved as a result of the wellness program are more likely to share their positive experience with others. For example, in the context of online shopping, satisfied customers are found to engage in positive WOM activities (Lee and Youn 2009). Therefore, we posit:

Hypothesis 5: Perceived health improvement has a positive effect on WOM.

Research Methods and Preliminary Results

We collected data from an annual pedometer challenge program implemented by a major U.S. university in the mid-Atlantic region. The program started in 2009, and its duration is six weeks each year. All employees including faculty and staff are invited to participate in this program either as a member of a team or as an individual participant. Approximately 400 faculty and staff members participated each year from 2009 to 2018. All participants are required to complete an online registration form and provide information such as demographic information, their personal steps goal, and activity tracking devices they will use. The participant's steps data recorded by his/her activating tracking device is automatically fed into the digital platform of the challenge program. This platform provides all participants with their performance and standings on a real-time basis. Shortly after the program is over, the participant is asked to fill out a program evaluation survey voluntarily. The evaluation form includes many questions about the participant's experience and satisfaction with the program. We use the data from 2012 to 2018 for this research.

We check the validity and reliability of the constructs. We then obtain correlations of the constructs. We use Smart PLS to test our hypotheses. The results of testing our hypotheses indicate that the prize opportunity (H1) and the activity tracking technology (H2) have significant effects on the perceived health improvement (H1: path coefficient:0.16, p-value = 0.001, H2: path coefficient:0.06, p-value = 0.05). We also find that the perceived health improvement has a significant effect on the re-participation intention (H4: path coefficient:0.26, p-value = 0.001) and the WOM (H5: path coefficient:0.26, p-value = 0.001). However, we do not find a significant effect of the program administrator-participant communication on the perceived health improvement (H3).

Expected Contributions and Implications

This research contributes to the literature on corporate wellness programs and health information technology. This is a study that derived and verified the key factors, activity tracking technology and prize opportunity, to encourage participation in corporate wellness programs. In particular, it provides empirical evidence of the effect of activity tracking technology on employee's perceived health improvement, which leads to increased employee participation in their employer's wellness programs through re-participation and word-of-mouth. Overall, this study advances the theoretical understanding of what drives employee participation in corporate wellness programs. Moreover, our research informs organizations of effective strategies in terms of use of activity tracking technology, prizes, and communication for increasing employee participation in their programs.

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