

Understanding Continuance Intention to Use Smoking Cessation Online Health Community: A Social Exchange Perspective

Research-in-Progress

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Abstract

This study aims to investigate the factors determining smokers' continuance intention to use smoking cessation online health communities from a social exchange perspective. This study proposes that the benefits of using smoking cessation online health community consists of informational benefit, emotional benefit, and companionship, which have positive effects on users' continuance intention to use smoking cessation online health communities, whereas the cost is composed of time and efforts as well as privacy concern, which exert a negative impact on smokers' continuance intention. In addition, some factors are set as moderators in the proposed research model to explore the different roles of benefits and costs in shaping continuance intention among different user groups.

Keywords: Online health community, smoking cessation, IS continuance, social exchange

Introduction

People are increasingly turning to online channels, such as online health communities (OHCs), as key information resources for personal health management (Pew Research Center 2014). Online interaction appears to be an alternative of the traditional physician-patient communication, and provides even more information and support compared to the latter. People can freely seek for information and peer support, share information and experiences with other members in an OHC. An OHCs is defined as “a collective of individuals who communicate with each other on health-related matters through dedicated sites in the Internet” (Mpinganjira 2018, p. 686). Health related information and peer support obtained through OHCs have been argued to affect the decisions about coping with health problems, such as taking medicines for smoking cessation (Cobb et al. 2013).

More than 12 million smokers in the US seek smoking cessation help online each year (Graham and Amato 2019), and a large number of smokers participate in OHCs for smoking cessation (Zhao et al. 2016b). OHCs have been argued to be as new tools to reach the smoking population as much as possible and to deliver effective smoking cessation treatments to those who want to stop using tobacco products. Smoking cessation OHCs can help users increase nicotine replacement therapy (NRT) use (Kurko et al.

2015; Pearson et al. 2018), reduce relapse (Cheung et al. 2015), and achieve better abstinence (Baskerville et al. 2016; Pechmann et al. 2017). Though smoking cessation OHCs has been suggested to be helpful in smoking cessation, smokers seem to have low retention to use smoking cessation OHCs (Naslund et al. 2017). There is a need to investigate the factors determining smokers' continuance intention to use a smoking cessation OHC.

Some studies have explored IS continuance in the context of OHCs from multiple perspectives, such as commitment-trust theory, social identity theory, social capital theory, and information systems success model. Prior research found that trust, social support, emotional support, information support, social identity, perceived usefulness, and satisfaction were main motivators of continuance towards OHCs (Wu 2018; Zhao et al. 2013; Zhao et al. 2016a; Zhao et al. 2015). OHC users will benefit from OHC use, such as social support (Chung 2014; Goh et al. 2016), whereas they might take the privacy risks in their OHC use (Anderson and Agarwal 2011; Bansal et al. 2010). Previous research mainly focused on investigating the motivators for individuals' continued use of smoking cessation OHCs, and little research has attempted to investigate smoking cessation OHC use from the social exchange perspective. Specifically, how the benefits and costs in smoking cessation OHCs shape individuals' continuance intention to use smoking cessation OHCs.

Previous studies have indicated that user characteristics might moderate user behaviour regarding OHCs (An et al. 2008; Ploderer et al. 2013). Little research has attempted to examine whether user characteristics will moderate their perceptions on the benefits and costs in using smoking cessation OHCs.

In order to address the above research gaps, this study takes the social exchange theory as the basic framework to investigate factors shaping smokers' continuance intention to use smoking cessation OHCs. Specifically, we propose that information benefits, emotional benefits, and companionship are the three dimensions of benefits, whereas time and efforts, and privacy concern as the two factors reflecting costs, which shape smokers' continuance intention. We also set age, gender, education, the stage of smoking cessation, and user behavior pattern in using smoking cessation OHCs as moderators in the proposed research model in order to provide a comprehensive understanding of smokers' continuance intention among different user groups.

The rest of the paper is presented as follows. First, a literature review on IS continuance and social exchange theory is presented. Second, the research model and hypotheses are proposed. Third, the research methods planned to be employed in this study is presented. Finally, the expected outcomes are discussed.

Theoretical background

Research on OHC continuance

IS continuance is a behavioral outcome that manifest post-adoption of an IS, and has received much attention in the past years. Various theories have been used as the theoretical basis to explain and predict IS continuance, such as technology acceptance model (TAM) (Davis 1989), theory of planned behavior (TPB) (Ajzen 1991), IS success model (DeLone and McLean 1992), expectation confirmation theory (ECT) (Bhattacharjee 2001), and unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al. 2003).

People's continued use of OHCs comes from their intrinsic desire to fulfill their personal needs for sharing information and peer support, and building relationships with others in OHCs. Previous studies have provided empirical evidence regarding motivators for people to continue using different OHCs, such as OHCs for breast cancer and diabetes (Zhao et al. 2013; Zhao et al. 2015; Zhao et al. 2016b), weight loss (Lehto and Oinas-Kukkonen 2015), and general health concerns (Wu 2018). Zhao et al. (2013) used the commitment-trust theory to examine people's ongoing use of OHCs and found that both cognitive trust and affective trust increased members' continuance intention, and found that empathic concern affected affective trust, and network density contributed to both cognitive and affective trust. Lehto and Oinas-Kukkonen (2015) applied persuasive systems design (PSD) model and found that perceived effort, perceived credibility, and perceived effectiveness were positively

associated with continuance intention. Zhao et al. (2015) applied social identity theory in their study on OHCs. In their study social identity was identified as a dominant factor determining patients' continued intention to use OHCs and mediated the influences of benevolence trust and cognitive resources (i.e., shared language and shared vision) on continuance intention. Based on social identity theory, Zhao et al. (2016a) also found that trust, externalization, and combination of knowledge creation exerted impacts on members' continuance intention to use OHCs. Wu (2018) applied IS success model in OHC use research and found that perceived usefulness, user satisfaction determined continuance usage, whereas perceived usefulness and user satisfaction were both influenced by social support, information quality, and service quality.

Another main research stream in IS research attempted to explain how benefits and the cost/sacrifices in using IS shape users' continuance intention. Lin et al. (2012) integrated value-based adoption and ECT to investigate the continuance intention to use an Internet protocol television and found that perceived sacrifices (i.e., perceived fee, change of viewing habits, technicality, and knowledge of alternatives) affected perceived value negatively, which was a predictor of continuance intention. Zhou (2013) found that switching costs, such as time and effort, affected continuance use of mobile internet services. Zhou and Li (2014) found that privacy concern had significant effects on continuance use of mobile SNS. Breuer and Barker (2015) found that perceived cost of using a depression OHC included fear of negative effects on others and self. Flickinger et al. (2017) summarized that privacy concern and time constraint were costs of using HIV/AIDS OHCs.

As indicated in the literature, motivations and barriers in OHC use will shape individuals' continued use of OHCs.

Social exchange theory

Social exchange theory (SET) (Homans 1958) is one of the research frameworks for understanding human behavior in IS field, such as adoption of an IS (Hsing Wu et al. 2013; Roback and Wakefield 2013), continuance use of an IS (Hu et al. 2015), knowledge sharing behavior (Yan et al. 2016), and active participation in online communities (Gharib et al. 2017).

SET claims that individuals interact to maximize their benefits and minimize their costs (Emerson 1976). People could be motivated to perform a behavior by economic or social benefits, and prevented by costs. For instance, Roback and Wakefield (2013) applied SET to examine intention to use mobile location-based applications and found that benefits, including enjoyment, perceived usefulness, and perceived ease of use, positively associated with use intention, while privacy risk as costs negatively associated with use intention. Hu et al. (2015) integrated SET and social value theory to investigate continued use of social media. In their study, online social value and satisfaction were found to exert a positive impact on continued use. Two dimensions were related to online social value, including utilitarian benefits (i.e., relational benefits and informational benefits), and hedonic benefits (i.e., enjoyment and curiosity fulfillment). Information risks and efforts determined the sacrifices. Yan et al. (2016) employed SET to investigate knowledge sharing behavior in OHCs and found that benefits (i.e., sense of self-worth, face concern, reputation, and social support) were positively associated with both general and specific knowledge sharing, while cognitive costs was negatively associated with specific knowledge sharing, and executional costs was negatively related to general knowledge sharing.

SET has been argued to be a good theoretical base to explain continuance use of OHCs, and it fits to the research context of smoking cessation OHC. Smoking cessation OHC users usually benefit from receiving information support, and emotional support, social interaction with others, and companionship (Huang et al. 2014; Yan and Tan 2014). Meanwhile they sacrifice in time and efforts to use OHCs, and exposure to potential risks, such as privacy (Hu et al. 2015). The perceived benefits and risks in using smoking cessation OHCs might shape users' continuance use of smoking cessation OHCs. Thus, this study attempts to apply the SET to explain smoking cessation OHCs by taking both the benefits and the risks in using smoking cessation OHCs.

Research model and hypotheses

Proposed research model

In this study, we take the social exchange theory as the basic research framework to explain the impact of perceived benefits and costs on continuance intention in the context of smoking cessation OHCs. Following social support theory, we propose that the perceived benefits in smoking cessation OHCs use include informational benefits, emotional benefits, and companionship, whereas time and effort, and privacy concern reflect the perceived costs in smoking cessation OHCs use. The perceived benefits (informational benefits, emotional benefits, and companionship) and costs (time and effort, privacy concern) shape individuals' continuance intention to use a smoking cessation OHC. Age, gender, education, users' OHC use pattern, and smoking cessation stage are set as moderators in this study. The proposed research model is shown in Figure 1.

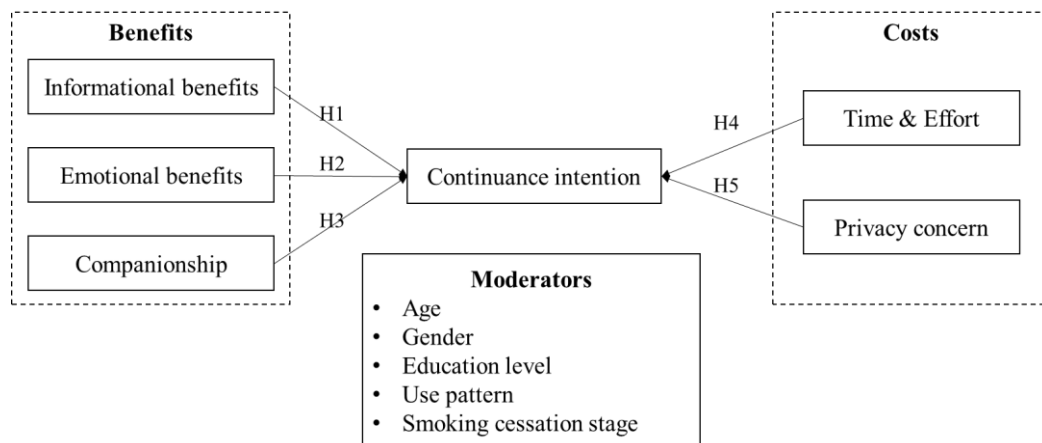


Figure 1. The Research Model

Proposed hypotheses

Informational benefits refer to the benefits from informational support obtained from OHCs, including advice, referrals, and personal experience on health concerns (Cutrona and Suhr 1992; Huang et al. 2014; Yan and Tan 2014). In a smoking cessation OHC, users often seek advice or practical tips on coping with craving and withdrawals symptoms, and medical information on medicine and side effects (Cheung et al. 2017; Rocheleau et al. 2015; Zhang and Yang 2015). Informational benefits have been found positively affect consumers' revisit intention toward online brand community (Jung et al. 2014), and user participation in OHCs (Wang et al. 2017). Based on the literature, we argue that informational benefits will exert positive impacts on user continuance to use a smoking cessation OHC, and the following hypothesis is proposed:

H1: Informational support positively affects users' continuance intention to use a smoking cessation OHC.

Emotional benefits pertain to the emotional support received from OHCs, including emotional comfort, caring, empathy, and love (Cutrona and Suhr 1992; Huang et al. 2014; Yan and Tan 2014). In a smoking cessation OHC, users usually ask for emotional support such as encouragement and empathy (Rocheleau et al. 2015; Zhang and Yang 2015). Emotional benefits have also been found to positively affect user continuance intention to use social network sites (Bao 2016), and user participation in OHCs (Wang et al. 2017). Based on the findings in previous research, we argue that emotional benefits will affect an OHC continuance in a smoking cessation context, and the following hypothesis is suggested:

H2: Emotional support positively affects users' continuance intention to use a smoking cessation OHC.

Companionship refers to engaging in social interaction with others, including chatting, humor, groupness, and friendship (Huang et al. 2014; Yan and Tan 2014). Companionship makes users feel accompanied and less lonely in using OHCs, which has been suggested to be perceived benefits in using

an OHC (Breuer and Barker 2015). Companionship has been found to positively affect user participation in OHCs (Wang et al. 2017). Based on the literature, we assume that the perceived companionship in using smoking cessation OHCs will exert a positive impact on users' continuance intention to use smoking cessation OHCs, and the following hypothesis is proposed:

H3: Companionship positively affects users' continuance intention to use a smoking cessation OHC.

According to SET, cost refers to negative outcomes of user behavior, which might decrease the user behavior (Yan et al. 2016). Individuals often evaluate the possible costs, such as time, financial, and material resources that they commit when taking an action. Previous studies have shown that users care about the time and efforts of reading posts in OHCs, they do not want to spend too much time on reading posts in order to find the suitable information which can meet their needs (Huh et al. 2016). Thus, it is reasonable to argue that users of smoking cessation OHCs perceive there will be time and efforts in using smoking cessation OHCs, which will be negatively related to their continuance intention to use smoking cessation OHCs. Thus, we propose that:

H4: Time and effort in using a smoking cessation OHC negatively affect users' continuance intention to use the smoking cessation OHC.

Privacy concern refers to users' concerns about potential loss of privacy as a result of information disclosure to an OHC (Xu et al. 2011). Users often worry that others would improperly access to or misuse sensitive information they disclose to OHCs, especially their personal health information. Previous studies have found that privacy concern is a factor influencing user adoption of different online systems. Angst and Agarwal (2009) found that privacy concern negatively affected adoption intention of electronic health records (HERs). Zhou and Li (2014) found that privacy concern exerted a negative impact on mobile SNS continuance usage. Fox and Connolly (2018) found that health information privacy concern was negatively associated with mobile health adoption intention. Based on the findings in the literature, it is reasonable to assume that privacy concern will influence continuance intention to use smoking cessation OHCs. In other words, the higher privacy concern in using a smoking cessation OHC, the lower intention to continue using the smoking cessation OHC, and the following hypothesis is suggested:

H5: Privacy concern in using a smoking cessation OHC negatively affects users' continuance intention to use the smoking cessation OHC.

Prior studies have suggested that user contexts, such as age, gender, and education, moderate users' perceptions on IS use. Some studies in OHCs also argued that use pattern (An et al. 2008) and smoking cessation stage (Ploderer et al. 2013) could moderate user perceptions on OHC use. Thus, in this study five factors (age, gender, education, users' OHC use pattern, and smoking cessation stage) are set as moderators to further understand the benefit-cost perception among different user groups.

Research methods

Data collection

This study will be conducted in collaboration with a non-profit smoking cessation website in Finland, Stumppi.fi, a national Internet portal for smoking cessation. Data will be collected via online surveys. Stumppi.fi helped us to recruit participants by releasing our online survey link on its website as well as its Facebook homepage with an introductory message of this research. An ethical permit has been approved by the ethical committee of the home university of authors before the implementation of data collection. Each participant will get a movie ticket as an incentive.

The official survey was launched on 17th December 2018. Each participant has been informed of the goal of this study, the voluntariness of participation, the anonymity and confidentiality of the research data, and our contact information before the survey. If they agree to participate, they should report on their background, smoking history, as well as their use experience with Stumppi.fi. This survey was presented in both English and Finnish, participants could choose the language with which they are familiar. This survey takes approximately 20 minutes to complete.

Instrument development

All items of the constructs included in the research model were adapted from validated instruments used in prior studies and reworded in order to fit the research context of smoking cessation OHCs. A five-point Likert scale that ranges from “strongly disagree” to “strongly agree” was applied in this study to measure all items.

Specifically, the item measurements of informational benefits and emotional benefits were taken from Liang et al. (2011). The items of companionship were adapted from Lin et al. (2015). The items of time and efforts were taken from Yan et al. (2016). Privacy concern items were from Xu et al. (2011). The items of continuance intention were from Bhattacharjee (2001).

Expected results

This study attempts to apply social exchange theory to investigate continuance intention to use smoking cessation OHCs. This study might provide some contributions to OHC research. First, this study investigates the benefits and costs of using a smoking cessation OHC, which might offer a comprehensive explanation of IS continuance in OHC field from the social exchange perspective. Secondly, in this study privacy concern was considered as costs in using smoking cessation OHCs, which might offer a new insight to understand user continuance from the privacy perspective in the context of OHCs. Finally, this study takes users’ characteristics, such as age, gender, education level, smoking cessation stage, and use experience and pattern, into account in explaining users’ continuance intention in smoking cessation OHCs, which might offer new insight to explain users’ continuance intention to use smoking cessation OHCs.

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