Action and inaction motivational risk beliefs in the use of ICT support in health promotion

Abstract
This paper proposes and tests empirically a theoretical model that integrates an innovative construct capturing consumers’ inaction risk perception regarding not using an information and communication technology (ICT) service designed to support them in a non-leisure activity. A theoretical model contrasting perceived risk of not using (or inaction risk of) an ICT mobile application supporting health promotion to perceived risk of using this application (or action risk) was developed and tested with a sample of potential health ICT consumers in North America. Results show that inaction risk is a moderately strong antecedent of motivational factors in contrast to action risk that hinders the adoption of the ICT health promotion application.

Keywords
Inaction risk, action risk, user adoption, information and communication technology, healthcare

1. Introduction
Previous research in information systems (IS) has pointed to key information and communication technology (ICT)-related perceptions that would make users more inclined to adopt a new ICT (Venkatesh, Morris, Davis, & Davis, 2003). It showed that users would accept a new ICT or ICT application mainly if they perceived this as being useful for them, easy to use, or enjoyable. Relatively recent research adds to this extrinsic and intrinsic benefit view of ICT adoption the negative angle. After all, the use of new ICT may also harbor many risks for users, which too, are taken into account by individuals for forming acceptance decisions. These negative factors express apprehension in several directions (e.g., fear of wasting money or time, or concern on privacy) and are known in the literature, usually, as perceived risk (Featherman & Pavlou, 2003; Glover & Benbasat, 2010). Therefore, unbiased well-rounded investigation of the perceptions regarding the adoption and use of a new ICT or ICT application, especially in areas where the use (or rejection) of the ICT may present a broad set of dangers (e.g., in the case of healthcare ICT), should take into account both the user favoring factors and the perceived deterrents expressed as risks.
The risk literature has primarily focused on action risk; i.e., the risk of taking an action, which in our case captures risks associated with ICT adoption and use. One relatively new type of risk which is highly relevant to healthcare ICT is the inaction risk; i.e., the risk of not taking action which in our case captures the risk of doing nothing and, therefore, not adopting the healthcare ICT. This factor would contrast the above-mentioned perceived risk of using the technology and act simultaneously to it as a determinant of user perceptions and behaviors. In the current context (since we focus on ICT use), we will call this construct as Perceived Risk of Not Using (PRNU). It is argued that such inaction risk constructs are relevant in sensitive areas such as mobile banking, learning, or health, and would capture user perceptions of, presumably, negative consequences suffered if not using an ICT application that was designed to help them perform a certain activity. For instance, PRNU would capture consumers’ fears of negative effects (e.g., paying abnormally high fees or experiencing service delays) if not using a newer mobile banking application designed to better support them.

In this study, we decided to test the concurrent effects of action and inaction risks on ICT adoption decisions in the specific context of a mobile service on cell phones as an educational support tool in smoking cessation. We did so for three reasons. First, this context is relevant for both action and inaction risk perceptions. Action (i.e., adoption) perceived risks include, for example, risk associated with privacy violation as related to personal health information and financial risk as related to subscribing to a, perhaps, useless service. Inaction risks are associated with feared health deterioration because of continuing to smoke. Second, knowledge regarding ICT adoption in this context can have important practical implications which may help improve peoples’ health and lives. Third, smoking cessation context is growing in importance in modern societies. Yet, it received relatively scant attention in IS research.

The consequences of smoking for individual and public health became a growing concern in recent decades. As a result, there has been a wealth of smoking cessation initiatives worldwide (Shearer & Shanahan, 2006). One relatively recent approach in some parts of the world is to use newer ICT to assist people in their efforts to quit smoking (Chung, 2015; Song, Kim, Kwon, & Jung, 2013). Out of the solutions implemented through mobile ICT devices, applications using wireless text messaging or short message service (SMS) on cell phones were having, reportedly, encouraging results (Free et al., 2011; Møldrup, 2007; Obermayer, Riley, Asif, & Jean-Mary, 2004). In addition to the anytime-anywhere capabilities of cell phones, it seems that the features
of wireless text messaging in terms of popularity, low cost, and low intrusiveness are a good explanation for the preference of this service as an individual support. Moreover, commercial offerings of text reminders, in general, have been gaining popularity various parts of the world (Downer, Meara, & Da Costa, 2005), including for health promotion and management activities (Cole-Lewis, & Kershaw, 2010).

Given the theoretical gap regarding the need to simultaneously consider action and inaction risks in adoption decisions and the practical need to improve the acceptance of smoking cessation supporting ICTs, the current study examines the roles of action and inaction risks in motivating the use of a wireless text messaging support tool for health promotion. For that, an empirical study with 252 potential consumers (smokers) was conducted in North America. This paper reports on that study, as follows: the next two sections present the theoretical background and model development. Following them, study methodology and results are presented. Finally, a discussion section concludes the paper.

2. Theoretical background

Research on user reasons to adopt a new ICT has an established tradition in IS. Various models and theories that focus on the antecedents of ICT adoption have been validated (Venkatesh, Morris, Davis, & Davis, 2003). One of the prominent and parsimonious models used is the motivational model according to which user behavioral intention (BI) to adopt an ICT or ICT application is explained by two key factors: extrinsic motivation (EM) and intrinsic motivation (IM) (Davis, Bagozzi, & Warshaw, 1992; Igbaria, Parasuraman, & Baroudi, 1996; Venkatesh, Speier, & Morris, 2002). While EM captures the external goals users would aim at by using a technology, similar to perceived usefulness of the technology (e.g., performing an activity, learning utilitarian information), IM expresses the intrinsic satisfaction associated with the use of that technology due to the interaction with the technology itself, similar to the enjoyment of using it (Lee, Lee, & Hwang, 2015; Ryan & Deci, 2000).

The two motivational sides in this adoption model encapsulate broad sets of user reasons for adopting the ICT; hence, the model is parsimonious and has good predictive ability, which made it appealing to and appropriate for our study. However, a more recent trend in information systems research takes into account the opposite type of factors - ones which generally demotivate use. These factors were proposed due to the necessity to capture user concerns about
newer technology that is being perceived by some individuals as being complicated, expensive, or bothersome. Such perceptions are captured by a resistance to adoption factor as developed by Lapointe & Rivard (2005; 2006), by inhibitors to adoption as investigated by Cenfetelli (2004) and Cenfetelli & Schwarz (2011) or, more frequently, by a perceived risk construct adapted from consumer behavior studies (Featherman & Pavlou, 2003; Im, Kim, & Han, 2008; Pavlou, 2003). As the perceived risk concept appears to be popular in IS literature and focuses on action risks, and to clearly distinguish it from the inaction risk introduced by this study, negative risk-related perceptions associated with the use of an ICT or ICT application will be labeled from this point onwards as Perceived Risk of Using (PRU). This factor expresses perceived (hence subjective and not necessarily real) negative consequences that may undermine the chances of success of an ICT application from its users’ viewpoint (Byrne et al., 2016). Further, previous research showed that these perceptions have usually several facets: e.g., doubt about making a right choice, fear about a wrong money investment, discomfort about wasting time, etc. (Lim, 2003). We, therefore too, adopt a multifaceted conceptualization of PRU in this study.

In addition to PRU, theoretical reasoning suggests that inaction risk (e.g., risk of not buckling up in a car), which in our context is risk of not using the technology, is another concept of risk that motivates action, rather than demotivating it like action risk. Inaction risk would capture the potentially negative consequences individuals may perceive if they fail to use as expected an ICT application that was designed specifically to help them. For instance, the risk of not using a seat belt or a condom can motivate the use of these artifacts in rational individuals. In our context, the inaction risk reflects user fears of seeing their health condition deteriorate if not using the application which is meant to support them in maintaining and improving their health.

This inaction risk, labeled as Perceived Risk of Not Using (PRNU) onwards, is expected to manifest in non-leisure ICT services predominantly where users may see a tangible loss if not using an application offered to help them. One example of such services which merits further research are the mobile applications on cell phones (e.g., text messaging) helping smokers to quit smoking by providing educational advice and reminders. Accordingly, this study proposes to address the following question:

What are the influences of Perceived Risk of Not Using (inaction risk) and of Perceived Risk of Using (action risk) on consumer intent to adopt a wireless text messaging application for smoking cessation?
3. Research model and hypotheses

The proposed theoretical model extends the motivational perspective of ICT adoption by including and accounting for action and inaction risks consumers arguably take into account in the examined context, as shown in Figure 1. This follows Davis, Bagozzi, & Warshaw (1992) who posited that influences of external factors are exerted in the motivational model through the motivational constructs, rather than have direct effects on intentions. We next explain the logic behind the proposed effects.

![Research model](image)

**Fig. 1.** Research model.

Previous studies showed that Perceived Risk of Using an ICT application could be an antecedent of both types of motivation. Specifically, consumer concerns about the risks associated with e-services reduce the perception of the utilitarian value of these services (Featherman & Pavlou, 2003; Pavlou, 2003; van Der Heijden, Ogertschnig, & van Der Gaast, 2005): if users perceive a risk when using a technology (e.g., it might risk their financial and
wellbeing), this would negatively affect the usefulness they see in that technology and have lower extrinsic motivation to use it (note that in an utilitarian context such as smoking cessation, usefulness is a key extrinsic motivator). In addition to that, studies capturing consumer behavior in e-shopping found that perceiving a risk related to a purchase has negative consequences for the attitudinal orientation of consumers toward the seller and purchase (Grazioli & Jarvenpaa, 2000; Jarvenpaa, Tractinsky, & Vitale, 2000). Due to the positive association between enjoyment, or intrinsic motivation in general, and attitude (Dabholkar & Bagozzi, 2002) it is expected that risk perceptions that influence negatively consumer attitude regarding an ICT service would also diminish the intrinsic motivation associated with using that technology (note: this is true for utilitarian artifacts; it may not be true for artifacts the purpose of which is to produce thrill, such as rollercoasters). For instance, a consumer has always to fear that if his or her credit card or personal information is stolen from a website he or she will likely enjoy the use of the website to a lesser extent; concerns are unpleasant and reduce the enjoyment potential for most users.

Prior research has suggested that a multifaceted conceptualization of action risk is worthy because in reality people consider many risk facets before they make decisions (Laroche, McDougall, Bergeron, & Yang, 2004; Lim, 2003). Although some scholars captured its multidimensionality through a first-order construct having as antecedents the individual risk sides (Gewald & Dibbern, 2009; Stone & Mason, 1995; Yang, Pang, Liu, Yen, & Tarn, 2015), a popular approach in IS research operationalizes this risk as a second-order construct having as first-order components the risk facets (Featherman & Pavlou, 2003; Pavlou, 2003). This conceptualization implies that an over risk which manifests in risk facets influences peoples’ decisions. Previous research also indicated that risk perception borrowed from consumer behavior into the IS literature has six key facets (Laroche, McDougall, Bergeron, & Yang, 2004; Lim, 2003): financial (fear of wasting money), performance (fear of the product/service not working properly), social (fear of social disapproval), physical (fear of bad consequences for health), psychological (fear of making a wrong choice), and time (fear of wasting time). Virtually, any risk perception can be decomposed in terms of these facets. Furthermore, according to consumer behavior theory, risk perception depends on the context of the activity (Conchar, Zinkhan, Peters, & Olavarrieta, 2004), so the individual facets taken into account would differ from one case to another. However, despite possible differences in the relative
contributions of the risk components, the combined influence of the most significant facets on the overall perceived risk should be relatively constant (Stone & Grønhaug, 1993). Thus, for instance, a generic computer tablet is cheaper (hence, less risky from a financial point of view) but, very likely, less reliable (hence, riskier from a performance point of view) compared to a leading brand tablet.

In our case, since the focus is on user adoption of wireless text messaging for smoking cessation, and in an attempt to build a parsimonious model, only three types of risk perceptions of using out of the above six are considered highly relevant. These facets are deemed to be significant, based on prior consumer behavior and IS research (Featherman & Pavlou, 2003; Lim, 2003; Stone & Grønhaug, 1993):

- financial risk (i.e., fear of uselessly spending too much money to subscribe to the mobile service);
- psychological risk (i.e., apprehension about making a bad choice when subscribing to an unknown mobile service), and
- time risk (i.e., fear of wasting time with a useless service).

Using wireless text messaging for a health promotion activity was not considered to involve performance, social or physical perceived risks for cell phone users. However, privacy risk (i.e., fear of disclosing private data to a service provider) was added as a fourth risk facet since this type of risk, additional to the generic six facets discussed above and specific to IS adoption research, was demonstrated constantly to play a key role in ICT use (Featherman & Pavlou, 2003).

The selected four risk facets above express perceived negative consequences, in different domains, of subscribing to a mobile service offered to help quitting smoking. Since people normally act upon a total risk assessment and based on one risk dimension, and this overall action risk is created through mental weighting of risk components, we propose that it is this overall risk that affects extrinsic and intrinsic benefit assessments rather than the risk facets themselves. Integrating the points in the above discussion, we propose the following hypotheses:

H1a: Perceived Psychological Risk is positively associated with Perceived Risk of Using wireless text messaging for smoking cessation.
H1b: Perceived Time Risk is positively associated with Perceived Risk of Using wireless text messaging for smoking cessation.

H1c: Perceived Privacy Risk is positively associated with Perceived Risk of Using wireless text messaging for smoking cessation.

H1d: Perceived Financial Risk is positively associated with Perceived Risk of Using wireless text messaging for smoking cessation.

H2: Perceived Risk of Using (or action risk) is negatively associated with Extrinsic Motivation of using wireless text messaging for smoking cessation.

H3: Perceived Risk of Using (or action risk) is negatively associated with Intrinsic Motivation of using wireless text messaging for smoking cessation.

It appears obvious that Perceived Risk of Not Using (or inaction risk) is context dependent. For instance, in a sensitive field like healthcare, if people do not use an ICT application designed to help them preserve or improve their health, they may perceive a risk of seeing their condition deteriorate. Therefore, such an ICT application can be broadly seen as having a similar scope to medication. The Beliefs about Medicines Questionnaire (BMQ), which is a widely used method for assessing consumer beliefs about specific and general medication, identified three broad categories of relevant perceptions: General-Harm (i.e., individuals perceive medication as harmful), General-Overuse (i.e., individuals believe that doctors over-prescribe medication), and General-Benefit (i.e., individuals perceive potential benefits of medicines) (Horne et al., 2004; Horne, Weinman, & Hankins, 1999). Theoretical reasoning indicates that Perceived Risk of Not Using an ICT application for health promotion could be similar to the General-Benefit side of the beliefs about medicines – i.e., consumers would not achieve a potential benefit if not using the technology designed to help them.

It is argued that Perceived Risk of Not Using a non-leisure mobile service (i.e., inaction risk) is an antecedent (driver) of extrinsic motivation to use the ICT because the considerations associated with this risk are primarily utilitarian (e.g., what will it do my health?). Thus, PRNU captures, through a double negation, the perceived benefit of using the ICT as an effect of avoiding possibly negative consequences. At the same time, extrinsic motivation is a broader concept as it also encapsulates other aspects such as perceptions of performance improvement, effectiveness, and usefulness (Venkatesh, Morris, Davis, & Davis, 2003; Venkatesh, Thong, &
Xu, 2012). Moreover, extrinsic motivation can be viewed as the avoidance of an unwanted outcome (Bock, Zmud, Kim, & Lee, 2005; Lowry, Gaskin, & Moody, 2015). Therefore, the risk of not using, that is exactly addressing an undesired consequence, is expected to have a positive implication and reinforce the perceived benefit component of the extrinsic motivation to use the ICT and, hence, the entire construct. For instance, if a person perceives the risk of not using seat belts as high, they will have stronger than otherwise extrinsic motivation to wear a seatbelt while driving. Accordingly, we hypothesize that:

**H4: Perceived Risk of Not Using (or inaction risk) is positively associated with Extrinsic Motivation of using wireless text messaging for smoking cessation.**

Risks are normally assessed in a social context; what may be perceived as risky in one social setting (e.g., drinking and driving) may be perceived as less risky in another. In this study we account for the social setting by including social influence as an antecedent of risk assessments. Social influence reflects the influence of family, friends, colleagues or others reinforcing the intent to adopt an ICT application. These aspects are usually captured in IS studies through a Subjective Norm construct (Davis, Bagozzi, & Warshaw, 1989). Subjective Norm captures an individual’s perceptions of the opinions of people important to him or her regarding whether the individual should or should not use the ICT application in question. Social influence factor was considered as an antecedent of the Behavioral Intention to use a technology in UTAUT and UTAUT2 models (Venkatesh, Morris, Davis, & Davis, 2003; Venkatesh, Thong, & Xu, 2012) mostly due to a compliance mechanism – i.e., whenever significant other people are seen as able to reward desired behavior or to punish lack of such behavior (Venkatesh & Davis, 2000; Warshaw, 1980). On the other hand, Subjective Norm was validated as an antecedent of the Perceived Usefulness in the Technology Acceptance Model 2 (Venkatesh & Davis, 2000) and other research (Shibchurn & Yan, 2015) due to an internalization mechanism – i.e., whenever other peoples’ beliefs are assumed into the individual’s own belief composition (Venkatesh, Morris, Davis, & Davis, 2003; Warshaw, 1980).

The present research adopts the latter view as this is suitable for a voluntary setting in contrast to the former approach that is characteristic to mandatory contexts (Venkatesh, Morris, Davis, & Davis, 2003). Further, looking at an even more granular level, theoretical thinking indicates that significant other peoples’ opinions incorporated in the own belief structure are
enhancing precisely the perceived benefits component of the perceived usefulness (or extrinsic motivation), hence PRNU (consistent with the discussion preceding hypothesis H4 above). Through the same belief mechanism, favorable opinions on the service should be also alleviating the perceived risks of using an ICT application for health promotion – if users think this is more beneficial for them they are more prone to accept the possible risks. This implies that what other important individuals (family, friends, co-workers) consider as risky and less desirable may influence users' risk perceptions. For instance, if a user's friends consider a website to be problematic, a person is more likely to perceive the risk of this website to be higher than otherwise. Similarly, when a user's family members consider a website to be important for his or her health, the user will likely perceive the inaction risk (i.e., risk of not using) as higher than otherwise. Consequently, we hypothesize that:

**H5: Subjective Norm is negatively associated with Perceived Risk of Using wireless text messaging for smoking cessation.**

**H6: Subjective Norm is positively associated with Perceived Risk of Not Using wireless text messaging for smoking cessation.**

As demonstrated by Davis, Bagozzi, & Warshaw (1992) from the perspective of the motivational model, behavioral intention to use a technology has two main antecedents: extrinsic motivation (EM), that can be associated with perceived usefulness, and intrinsic motivation (IM), that can be associated with enjoyment. EM and IM are strong determinants of the intention to use an ICT and also channel the effect of all other possible factors of influence. Further, these two main antecedents are also linked. Behavioral studies demonstrated a positive correlation between the utilitarian value (or extrinsic motivation) and hedonic value (or intrinsic motivation) associated with the use of a technology (Davis, Bagozzi, & Warshaw, 1992; Deci & Ryan, 1985; van Der Heijden, Ogertschnig, & van Der Gaast, 2005). Venkatesh and collaborators made a step further and suggested that there is, in fact, a positive influence of intrinsic motivation over perceived usefulness associated with a technology use (Venkatesh, 1999; Venkatesh, Speier, & Morris, 2002) because intrinsic motivation increases enjoyment regarding the fulfillment of a task resulting in a higher quality and productivity in a broader sense. Higher intrinsic motivation levels improve cognitive processing and, subsequently, increase the perception of utility (hence,
extrinsic motivation) (Venkatesh, Speier, & Morris, 2002). Consequently, we propose the following hypotheses:

\textit{H7: Intrinsic Motivation is positively associated with Extrinsic Motivation of using wireless text messaging for smoking cessation.}

\textit{H8: Extrinsic Motivation is positively associated with Behavioral Intention of using wireless text messaging for smoking cessation.}

\textit{H9: Intrinsic Motivation is positively associated with Behavioral Intention of using wireless text messaging for smoking cessation.}

4. Methodology

The theoretical model was tested through a cross-sectional study in a North American setting that was part of a larger project. A specialized Web-based surveying company was used to recruit participants from their panels of pre-registered respondents in Canada. Inclusion criteria for participants were that they have to be at least 18 years old, smoke at least occasionally, own cell phones, and use wireless text messaging.

Participants meeting these criteria and consenting to participate in the study were presented a Web scenario on how text messages on their cell phones may be used to help them quit smoking, if they chose to do so. According to the scenario, health providers (physicians and nurses) in a call center supporting people willing to quit smoking would sent participants at random times funny daily text messages with fresh content that reminds and encourages users to abstain from or quit smoking. If having questions or needing help, users would be able to send text messages to the call centre and would be answered the same way as early as possible. The service would be offered for 6 months and users would cover their text messaging expenses if they decided to subscribe to the service. For increased authenticity, participants were presented samples of cell phone screen shots with actual messages. These messages were drawn from field studies on health promotion through text messaging, as reported in the literature (Neville, Greene, McLeod, Tracy, & Surie, 2002; Rodgers et al., 2005).

The Web scenario was followed by an online survey eliciting participant perceptions on the ICT service as described. The survey captured the items corresponding to the constructs in the theoretical model as well as relevant demographic characteristics. All items were captured with 7-point Likert-type scales adapted from previous research in IS (Featherman & Pavlou, 2003;
van der Heijden, 2004; Venkatesh & Davis, 2000) and consumer behavior (Laroche, McDougall, Bergeron, & Yang, 2004; Stone & Grønhaug, 1993; Stone & Mason, 1995).

A measurement scale for Perceived Risk of Not Using (PRNU) or inaction risk was not found in the available literature. As the context of this study is health promotion, the mobile support service was considered to look like a health product from the perspective of the users – i.e., its purpose is to improve health by helping users to quit smoking. Therefore, not using the service as expected may involve some risks for health, over time, hence, possibly, trigger a PRNU factor. Following this rationale, PRNU was considered capturing a beneficial effect and was measured as a four-item construct starting from the BMQ health benefit scale validated in previous health research on medicines (Horne et al., 2004; Horne, Weinman, & Hankins, 1999). Measurement scales for the theoretical model are presented in Appendix A.

In order to not influence respondent perceptions and feelings, neither the Web scenario nor the online survey told participants that smoking would be harmful. Participants were not urged to quit smoking at any point in time. All questions about their acceptance of the ICT service contained a hypothetical condition expressed as “if I decided to quit smoking”.

5. Results

In order to capture a more realistic image over a large country, data were collected through a commercial firm using an Internet panel of over 420,000 pre-recruited Canadian consumers. Invitations to participate in the experiment were sent to all panelists meeting the including conditions (i.e., being at least 18 years old, owning a cell phone, using text messaging, and smoking at least occasionally) across Canada. The experiment stopped when 300 responses were recorded. After eliminating the incomplete and invalid answers (e.g., with more than 5% data missing or with the same rating for all statements), a total of 252 valid responses were recorded. The average age of the participants was 41.2 years and 55.1% of them were female. Participants reported an average of 23.6 years of smoking and an average of 99.8 cigarettes smoked per week. Average experience with cell phone use was 8.8 years and with text messaging use 4.0 years. In terms of text messaging activity, participants reported an average of 47.2 messages received per week and of 57.7 messages sent per week.

Preliminary data analyses commenced with the assessment of non-response bias. This was done by comparing the respondent demographics with relevant statistics of the target population
The analysis revealed that the smoking numbers roughly match those reported by Health Canada in the latest available surveys (Health Canada, 2015). The text messaging usage averages seemed to be slightly below those reported by the Canadian Wireless Telecommunications Association in the latest available study (Canadian Wireless Telecommunications Association, 2015) – however, usage figures are rapidly changing in wireless communications.

A second test for non-response bias was to compare the key demographics of early and late responders (Dimoka, Hong, & Pavlou, 2012; Sun, Bhattacherjee, & Ma, 2009). Comparison of means for the age, gender, smoking figures and text messaging usage figures indicated no significant differences between the two respondent groups. Therefore, it was concluded that it was likely that non-response bias was not an issue for the study sample.

The next step in the preliminary assessment of the data collected was to test the potential influence of common method variance (CMV). This risk may appear since all variables (both independent and dependent) are collected from self-reported data in the same survey (Sharma, Yetton, & Crawford, 2009). First, a Harman’s one-factor test was conducted according to guidelines from Podsakoff, Mackenzie, Lee, & Podsakoff (2003). The test method consisted of entering all items of the theoretical model into an exploratory factor analysis. The unrotated solution produced by SPSS 23.0 resulted in seven factors with eigenvalues greater than one, the smallest of these being 1.045. The first factor isolated through this method accounted for only 31.2% of the variance while all seven factors explained 76.1% of the variance. This indicates that the variables unlikely stem from a single factor. Second, the test indicated by Pavlou, Liang, & Xue (2007) to detect possible CMV was applied. A visual inspection of the factor correlation matrix (Table 3) showed low-medium values. Since all correlations were below the threshold of 0.90, it can be concluded there is no evidence of CMV. Third, we ran a modified Lindell & Whitney (2001) test by including in the analysis a theoretically unrelated (called ‘marker’) variable. This variable was a four-item construct measuring attitude toward smoking cessation we captured in the same survey but was not used in the present study’s model. All the correlations of this construct with the model factors were small (absolute values below 0.08) and none of them were significant at the 0.05 level or better. This is another indication that there is no systematic bias in the data and, overall, that CMV should not be a major concern for this study (Pavlou, Liang, & Xue, 2007; Turel & Serenko, 2012).
Partial Least Squares (PLS) modeling technique was used to analyze the theoretical model due to its suitability for complex models having exploratory purposes (Bontis, Crossan, & Hulland, 2002; Chin, 1998). Perceived overall risk of using was evaluated as a second-order construct through a repeated indicators approach (i.e., based on the four primary perceived risk constructs) following examples in literature (Lohmoller, 1989; Turel, Serenko, & Bontis, 2010). PLS is suitable for this approach as it can handle well formative indicators, besides the reflective ones (Thomas, Lu, & Cedzynski, 2005).

5.1. Measurement model evaluation

First step in the PLS analysis was the evaluation of the measurement model (Gefen & Straub, 2005). After running SmartPLS (Ringle, Wende, & Will, 2005), preliminary loadings and cross-loadings tests indicated that only one item, pertaining to Extrinsic Motivation, had poor performance. Consequently, this item was dropped from the model and SmartPLS was re-run.

For the new results a first assessment of Cronbach’s alpha for all first-order constructs of the model was done for comparison purposes (Bontis, 1998; Jarvenpaa, Shaw, & Staples, 2004). All items displayed alpha values greater than 0.7. Next, Average Variance Extracted (AVE) values were assessed for all first-order constructs and appropriate values, greater than 0.5, as recommended (Bontis, 2004), were recorded. Furthermore, high factor loadings and composite reliability values (above 0.7) and low errors were noticed for all constructs. These results (see Table 1) indicated appropriate reliability and convergent validity levels.

Table 1

Test statistics of the measurement model.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Factor loading</th>
<th>Error</th>
<th>Composite reliability (Cronbach’s alpha; AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYR1</td>
<td>3.84</td>
<td>1.57</td>
<td>0.847</td>
<td>0.042</td>
<td>0.914 (0.860; 0.781)</td>
</tr>
<tr>
<td>PSYR2</td>
<td>3.21</td>
<td>1.53</td>
<td>0.904</td>
<td>0.072</td>
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<tr>
<td>PSYR3</td>
<td>3.11</td>
<td>1.57</td>
<td>0.899</td>
<td>0.067</td>
<td></td>
</tr>
<tr>
<td>PTR1</td>
<td>4.08</td>
<td>1.72</td>
<td>0.897</td>
<td>0.029</td>
<td>0.924 (0.877; 0.803)</td>
</tr>
<tr>
<td>PTR2</td>
<td>3.81</td>
<td>1.63</td>
<td>0.924</td>
<td>0.026</td>
<td></td>
</tr>
<tr>
<td>PTR3</td>
<td>3.60</td>
<td>1.79</td>
<td>0.867</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>PPR1</td>
<td>3.67</td>
<td>1.78</td>
<td>0.892</td>
<td>0.026</td>
<td>0.937 (0.899; 0.832)</td>
</tr>
<tr>
<td>PPR2</td>
<td>4.24</td>
<td>1.81</td>
<td>0.939</td>
<td>0.027</td>
<td></td>
</tr>
<tr>
<td>PPR3</td>
<td>3.89</td>
<td>1.84</td>
<td>0.904</td>
<td>0.046</td>
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<tr>
<td>PFR1</td>
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<td>1.75</td>
<td>0.812</td>
<td>0.060</td>
<td>0.870 (0.776; 0.691)</td>
</tr>
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<td>PFR2</td>
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<td>1.48</td>
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</tbody>
</table>
The next analysis was an evaluation of the table of loadings and cross-loadings for first-order constructs produced by SmartPLS. Visual inspection of this table showed that all item loadings were larger on the constructs they were supposed to load on than on other constructs, as indicated by Table 2. Further, a matrix of correlations between first order constructs and having on the diagonal the square root of the AVE measure for each construct showed the diagonal elements were larger than all corresponding off-diagonal elements (Table 3). Both these test results prove an appropriate discriminant validity of the model (Bontis, 2004; Gefen & Straub, 2005). Overall, the measurement model was considered suitable thus allowing the execution of the next step, the structural analysis.

Table 2
Loadings and cross-loadings of first order constructs.
Table 3
First-order construct correlations and square root of average variance extracted.

<table>
<thead>
<tr>
<th></th>
<th>BI</th>
<th>EM</th>
<th>PFR</th>
<th>IM</th>
<th>PRNU</th>
<th>PPR</th>
<th>PSYR</th>
<th>SN</th>
<th>PTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI</td>
<td>0.982</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>0.776</td>
<td>0.886</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PFR</td>
<td>-0.245</td>
<td>-0.290</td>
<td>0.831</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IM</td>
<td>0.699</td>
<td>0.763</td>
<td>-0.269</td>
<td>0.905</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRNU</td>
<td>0.533</td>
<td>0.530</td>
<td>-0.301</td>
<td>0.477</td>
<td>0.856</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPR</td>
<td>0.136</td>
<td>0.050</td>
<td>0.313</td>
<td>0.058</td>
<td>0.165</td>
<td>0.912</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYR</td>
<td>-0.027</td>
<td>-0.082</td>
<td>0.208</td>
<td>-0.157</td>
<td>0.076</td>
<td>0.320</td>
<td>0.884</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN</td>
<td>0.470</td>
<td>0.437</td>
<td>-0.213</td>
<td>0.340</td>
<td>0.431</td>
<td>-0.004</td>
<td>0.096</td>
<td>0.932</td>
<td></td>
</tr>
<tr>
<td>PTR</td>
<td>-0.192</td>
<td>-0.253</td>
<td>0.438</td>
<td>-0.345</td>
<td>-0.076</td>
<td>0.484</td>
<td>0.466</td>
<td>-0.128</td>
<td>0.896</td>
</tr>
</tbody>
</table>

5.2. Structural model evaluation

Figure 2 captures path coefficients, their significance levels and the coefficients of determination ($R^2$) obtained by running SmartPLS with a bootstrap with 200 re-samples. Table 4 summarizes the results of hypotheses testing for the research model.
Fig. 2. Results of structural evaluation. Significance levels:  * = 0.05; ** = 0.01; *** = 0.001.

Table 4
Results of hypotheses testing.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Hypothesis Path</th>
<th>Coefficient</th>
<th>t-Value</th>
<th>p-Value</th>
<th>Test Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>Perceived Psycho</td>
<td>0.305</td>
<td>4.7651</td>
<td>p&lt;0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H1b</td>
<td>Perceived Time</td>
<td>0.446</td>
<td>11.4614</td>
<td>p&lt;0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H1c</td>
<td>Perceived Privac</td>
<td>0.302</td>
<td>3.8587</td>
<td>p&lt;0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H1d</td>
<td>Perceived Finan</td>
<td>0.297</td>
<td>4.932</td>
<td>p&lt;0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>Perceived Risk</td>
<td>-0.053</td>
<td>0.7299</td>
<td>n.s.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3</td>
<td>Perceived Risk</td>
<td>-0.429</td>
<td>3.15</td>
<td>p&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>Perceived Risk</td>
<td>0.211</td>
<td>2.6194</td>
<td>p&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>Subjective Norm</td>
<td>-0.222</td>
<td>1.6956</td>
<td>n.s.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H6</td>
<td>Subjective Norm</td>
<td>0.430</td>
<td>5.1885</td>
<td>p&lt;0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H7</td>
<td>Intrinsic Motiv</td>
<td>0.639</td>
<td>7.3025</td>
<td>p&lt;0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H8</td>
<td>Extrinsic Motiv</td>
<td>0.579</td>
<td>6.1783</td>
<td>p&lt;0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H9</td>
<td>Intrinsic Motiv</td>
<td>0.258</td>
<td>2.2903</td>
<td>p&lt;0.05</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Figure 2 and Table 4 show that of the 12 hypotheses proposed, 10 were supported. As hypothesized, Behavioral Intention to use text messaging for smoking cessation was driven by Extrinsic Motivation (EM) and Intrinsic Motivation (IM). These two constructs have as
antecedents the two opposite types of perceived risk but in a different manner: while Perceived Risk of Not Using (PRNU) is an antecedent of EM, Perceived Risk of Using is a significant antecedent for IM only. Subjective Norm was found to be a significant antecedent of Perceived Risk of Not Using only. As hypothesized, all first-order action risk constructs had a strong and significant influence on the second-order Perceived Risk of Using construct.

Total effects on the Behavioral Intention to adopt the ICT service were also extracted from SmartPLS output. As Table 5 shows, and as expected, EM and IM had the strongest total effect (larger for the latter construct due to both its direct effect and the indirect effect through EM). While Perceived Risk of Using had a negative but slightly not significant effect, Perceived Risk of Using and Subjective Norm had a positive effect, significant at the 0.05 statistical level.

Table 5
Total effects on behavioral intention to adopt the service.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Coefficient</th>
<th>t-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extrinsic Motivation</td>
<td>0.579</td>
<td>6.1558</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Intrinsic Motivation</td>
<td>0.628</td>
<td>7.7066</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Perceived Risk of Using</td>
<td>-0.300</td>
<td>1.8776</td>
<td>0.061</td>
</tr>
<tr>
<td>Perceived Risk of Not Using</td>
<td>0.122</td>
<td>2.0295</td>
<td>p&lt;0.05</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>0.119</td>
<td>2.1507</td>
<td>p&lt;0.05</td>
</tr>
</tbody>
</table>

The theoretical model demonstrated relatively high explanatory power. The variance explained for Behavioral Intention was 62.9% and that for Extrinsic Motivation 62%. Values for IM and PRNU explained variances were comparatively smaller ($R^2$=0.184 and $R^2$=0.185, respectively) but such values are not uncommon in IS studies (Moon & Kim, 2001). The value for the risk of using was very small but this is understandable as its only antecedent hypothesized in the research model did not have a significant influence on it.

Path coefficient values in Figure 2 and Table 4 suggest a possible mediation of PRNU between Subjective Norm and Extrinsic Motivation. To investigate this, we conducted a mediation test by applying the Baron & Kenny procedure (Baron & Kenny, 1986) together with the Sobel test (Sobel, 1982). We obtained a test statistic of 1.772 and a $p$-Value of 0.076 that indicates that the mediation effect was approaching significance.

Demographic and descriptive measures, including age, gender, years of smoking and number of cigarettes smoked as well as all data on cell phone and text messaging experience and use
were tested as possible control variables. No changes in the measurement model were detected and only small increases in \( R^2 \) values for the endogenous constructs were recorded with these controls. None of the control variables tested had a significant influence on the model as none of their paths to the endogenous constructs were statistically significant.

6. Discussion and conclusions

This study sought to integrate an original inaction risk construct expressing Perceived Risk of Not Using a non-leisure ICT application into a motivational theory of ICT use which also accounts for action risks. For that, a theoretical model combining factors favorable to adoption with factors against adoption and contrasting Perceived Risk of Using an ICT application to Perceived Risk of Not Using it was developed and tested empirically in the context of using wireless text messaging on cell phones as a support tool in smoking cessation programs.

The research question of this study was: What are the influences of Perceived Risk of Not Using (inaction risk) and of Perceived Risk of Using (action risk) on consumer intent to adopt a wireless text messaging application for smoking cessation? As shown in Figure 2 and Table 4, Perceived Risk of Using was found to be a significant obstacle to adoption by exerting its negative influence through the Intrinsic Motivation, similar to findings in other IS studies (Cocosila, Archer, & Yuan, 2009). This is consistent with consumer behavior research where risk perception is an obstacle to completing a purchase (Laroche, McDougall, Bergeron, & Yang, 2004). We also found that all four risk facets taken into account in this research had a strong and significant influence on the overall risk perception of using the technology. Therefore, to mitigate risk, developers of a text messaging-based applications for smoking cessation should take into account user concerns about possibly wasting time and money, losing control over private data, and, generally, about making a right decision if subscribing for such a service.

The negative influence of the Perceived Risk of Using on Extrinsic Motivation (i.e., perceived usefulness) found by previous studies (Featherman & Pavlou, 2003) could not be supported here since the path between these constructs was not significant, as shown in Figure 2 and Table 4. A possible explanation is that smoking cessation is by its very nature a health promotion intervention, hence without immediate and apparent usefulness, and previous research in healthcare showed that it may be difficult to ensure people compliance in such cases (Anna et al., 2004). This is similar to preventive flu vaccination, for instance, that may have a positive
effect but this does not manifest immediately like when taking a prescribed medicine to lower flu fever.

As hypothesized, Perceived Risk of Not Using had a moderately strong positive influence on Extrinsic Motivation (path coefficient of 0.211, significant at the 0.01 statistical level). Thus, if people perceive their health state as likely to deteriorate if not using the ICT application designed to help them, they tend to see the utilitarian value of that application as higher. This is consistent with previous research showing that system self-preservation (e.g., by avoiding threat or injury) is an aspect of negative extrinsic motivation (Lowry, Gaskin, & Moody, 2015). Social influence exerted by other individuals (e.g., family and friends) proved to have a major influence on Perceived Risk of Not Using, as Subjective Norm was a strong significant antecedent of this inaction risk (Figure 2 and Table 4). Hence, people tend to perceive the negative consequences of not using the application if the opinions of significant other individuals, assumed into the own belief structure (Venkatesh, Morris, Davis, & Davis, 2003; Warshaw, 1980), are favorable to the use.

As expected, Intrinsic Motivation and, especially, Extrinsic Motivation are significant and strong antecedents of Behavioral Intention to use text messaging for smoking cessation. This confirms previous findings of IS studies showing the key role of extrinsic motivators (Davis, Bagozzi, & Warshaw, 1992; Venkatesh, Morris, Davis, & Davis, 2003) but, also, the important role of intrinsic ones, such as enjoyment with using the ICT (Childers, Carr, Peck, & Carson, 2001; Igbaria, Iivari, & Maragahh, 1995; Lee, Lee, & Hwang, 2015) in ICT use decisions. Therefore, to be successful, such an ICT application must be seen by users as being both useful and enjoyable and provide them with both utilitarian and hedonic gains. Results also show that Perceived Risk of Not Using is a motivator, unlike other risk perceptions, which are demotivators. The total effect of the Perceived Risk of Not Using on the intention to adopt the ICT appears to be larger than that of the Perceived Risk of Using (Table 5). Therefore, in the use of an ICT for non-leisure purposes, even if the targeted activity has no immediate outcome, the risk of suffering negative consequences if not using the service designed to help that specific activity is an important factor that is reinforcing the motivation to use the ICT.

A derived question would regard the appropriateness of the proposed theoretical model to explaining consumer intent to adopt a wireless text messaging application for smoking cessation. All four items of the PRNU construct proposed here were significant and with high loading
values (between 0.76 and 0.91) on the latent variable. This construct manifests appropriate reliability values in terms of composite reliability, Cronbach’s alpha and AVE. All these lead to the conclusion that PRNU is a valid extension of the health-related construct it builds on. All facets of the Perceived Risk of Using considered relevant in this research had a strong and significant influence (at a statistical level better than 0.001) on the overall risk perception. This means the second-order perceived risk construct is capturing appropriately the effects of the first-order risk facets (Turel, Serenko, & Bontis, 2007). Furthermore, results in Figure 2 and Table 4 show that the majority of the hypotheses proposed were supported (i.e., 10 out of 12). Values of the path coefficients and of the variance explained ($R^2$) in the theoretical model were moderately high. A large proportion of significant paths between constructs and high $R^2$ values for the majority of the endogenous constructs are indicators of a good theoretical model (Bontis, Keow, & Richardson, 2000). All of the above lead to the conclusion that the theoretical model was reasonably appropriate to explain consumer intent to adopt the wireless text messaging application under scrutiny.

This study had some limitations that should be acknowledged and may point to future research directions. First, the sample was recruited through a specialized Web-based surveying company from its already pre-registered panelists in Canada, reported on cross-sectional perceptions, and used system descriptions rather than actual systems. This process had the advantage of dealing with a realistic sample of users of various demographics all across an entire country but the disadvantage of using a convenience self-selected sample. The use of a scenario was also deemed appropriate; such approaches are well-established in IS and behavioral research (Hertzum, 2003; Jarke, 1999) due to the advantages of higher cost effectiveness and lower risk. Future research may use a longitudinal design with a broader representation of other countries and populations, as well as consider using an actual ICT after its implementation. Another potential extension is considering whether the ‘intensity’ of the activity targeted by the ICT (e.g., smoking habits and experience of the respondents in this case) is affecting the influence of PRNU in the adoption model. This can be addressed in future research by accounting for smoking pattern and health status effects on the ICT use decision and its antecedents. Lastly, it must be stressed here that PRNU proved to have a significant role for the case of an ICT used in health promotion. Healthcare is, very likely, the most sensitive social sector, so negative consequences of not using a support technology are, understandably, an additional motivation for
adopting it. Future research should attempt to test this new concept in other, less socially sensitive, contexts of technology use for non-leisure purposes (e.g., mobile banking or mobile learning) to extend our understanding of its role in the information and communication technology use decisions.

Overall, this study presents first strides toward understanding the roles of complex action and inaction risk considerations in driving the adoption of health promoting ICTs. The main theoretical contributions of this research were (1) the inclusion of a new construct of risk of inaction (i.e., Perceived Risk of Not Using) in a framework explaining ICT adoption and use, and (2) showing that risk is a socially-situated construct that can be manipulated through social influences. These extensions are important as they not only extend our understanding of consumer decision processes in the health promoting ICT context, but also because they point to potential interventions which we discuss below. This study also shows that in contrast to perceived risk that expresses de-motivating views on the use of a new technology (Featherman & Pavlou, 2003; Lim, 2003; Pavlou, 2003), PRNU captures, through a double negation perception, consumer additional reasons for use which are motivated by the avoidance of possibly negative consequences of not utilizing an ICT designed to support them in a healthy activity. PRNU was integrated in a theoretical model investigating the adoption of wireless text messaging on cell phones as a support tool in smoking cessation and its influence was contrasted to that of the Perceived Risk of Using. Results demonstrated that Perceived Risk of Not Using reinforces the motivation of using an ICT mobile service for health promotion and could be, thus, termed as a motivational risk belief.

This study has also managerial implications related to risk perceptions and subjective norms. Making potential users clearly see the possible negative consequences of not using an ICT designed to support them in a non-leisure activity increases their motivation and, subsequently, intention to use. Therefore, educational efforts directed toward making consumers see the risks of not using that technology application appear as justified. Similarly, risk perception regarding the use of such technologies should be reduced. Even though we did not test the technical features that contribute to this, it is reasonable to assume that higher security, quality assurance seals, transparent pricing schemas and quality delivery of the promised services should help service providers with minimizing the risk perceptions of users. Even simple services such as qualified and efficient customer support may help in this regard. Similarly, our findings show
that risk perceptions are influenced by subjective norms. Hence, socially-oriented campaigns, such as through the use of social media, can prove to be efficacious means for increasing inaction risk perceptions. The capacity of such proposed mechanisms to promote the use of smoking cessation related ICT, and perhaps other ICTs, should be examined in future research.

References


Appendices

**Appendix A** - Measurement items for the theoretical model

*Perceived psychological risk* (adapted from (Stone & Grønhaug, 1993) and (Stone & Mason, 1995))

The thought of signing up for the quit-smoking SMS service makes me feel uncomfortable.

The thought of signing up for the quit-smoking SMS service gives me an unwanted feeling of anxiety.
The thought of signing up for the quit-smoking SMS service causes me to experience unnecessary tension.

*Perceived time risk* (adapted from (Stone & Grønhaug, 1993) and (Stone & Mason, 1995))
Using the quit-smoking SMS service could lead to an inefficient use of my time.
Using the quit-smoking SMS service could involve important time losses.
The demands on my schedule are such that using the quit-smoking SMS service concerns me because it could create even more time pressures on me that I don’t need.

*Perceived privacy risk* (adapted from (Featherman & Pavlou, 2003))
My use of the quit-smoking SMS service would cause me to lose control over the privacy of my information.
Signing up for and using the quit-smoking SMS service would lead to a loss of privacy for me because my personal information could be used without my knowledge.
Internet hackers (criminals) might take control of my information if I used the quit-smoking SMS service.

*Perceived financial risk* (adapted from (Stone & Grønhaug, 1993) and (Stone & Mason, 1995))
Signing up for the quit-smoking SMS service would be a poor way to spend my money.
I would be concerned about how much I would pay if I subscribed to the quit-smoking SMS service.
If I subscribed to the quit-smoking SMS service, I would be concerned that I would not get my money's worth.

*Perceived risk of not using* (adapted from (Horne et al., 2004) and (Horne, Weinman, & Hankins, 1999))
Without the help of the quit-smoking SMS service smokers who decide to quit smoking would be less able to do it.
If not using the help of the quit-smoking SMS service smokers who decide to quit smoking might see their health diminished.
Without the help of the quit-smoking SMS service smokers who decide to quit smoking might live poorer quality lives.
In most cases, if not using the help of the quit-smoking SMS service the negative consequences would be more significant than the positive consequences for smokers who decide to quit smoking.

*Subjective norm* (adapted from (Venkatesh & Davis, 2000))
People who influence my behavior would think I should use the quit-smoking SMS service.
People who are important to me would think I should use the quit-smoking SMS service.

*Extrinsic motivation* (adapted from (Venkatesh, Speier, & Morris, 2002))
Using the quit-smoking SMS service would help me to refrain from smoking every day, if I decided to quit smoking.
Using the quit-smoking SMS service would help me not to forget about smoking cessation, if I decided to quit smoking.
Using the quit-smoking SMS service would help me to stop smoking, if I decided to quit smoking.
I expect to find the quit-smoking SMS service useful in supporting me to quit smoking, if I decided to quit smoking.

*Intrinsic motivation* (adapted from (Venkatesh, Speier, & Morris, 2002))
I expect to find the quit-smoking SMS service enjoyable.
The actual process of using the quit-smoking SMS service would be pleasant.
I would have fun using the quit-smoking SMS service.

*Behavioral intention* (adapted from (Venkatesh & Davis, 2000))
Assuming I had access to the quit-smoking SMS service, I would intend to use it, if I decided to quit smoking.
Given that I had access to the quit-smoking SMS service, I predict that I would use it, if I decided to quit smoking.