

The Consumer Intention to Adopt Smart Connected-Products: Does the Category Matter?

Catherine Viot, Caroline Bayart, Agnes Lancini

▶ To cite this version:

Catherine Viot, Caroline Bayart, Agnes Lancini. The Consumer Intention to Adopt Smart Connected-Products: Does the Category Matter?. 3rd International Conference for Marketing in the Insurance industry (ICMI), Oct 2017, St Gallen, Switzerland. hal-01991186

HAL Id: hal-01991186

https://hal.science/hal-01991186

Submitted on 23 Jan 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers. L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

The Consumer Intention to Adopt Smart Connected-Products: Does the Category Matter?

3rd International Conference for Marketing in the Insurance industry (ICMI) 2017 October, 19, St. Gallen Switzerland

Catherine Viot
Full Professor
Université Claude Bernard Lyon1 –
Laboratoire de Sciences Actuarielle Financière
France
catherine.viot@univ-lyon1.fr

Caroline Bayart
Associate Professor
Université Claude Bernard Lyon1 –
Laboratoire de Sciences Actuarielle Financière
France
caroline.bayart@univ-lyon1.fr

Agnès Lancini
Associate Professor
Université Claude Bernard Lyon1 –
Laboratoire de Sciences Actuarielle Financière
France
agnes.lancini@univ-lyon1.fr

Abstract

The development of the Internet Of Things (IOT) could be considered as the third period of the digital transformation. More and more Smart Connected-Products (SCPs) are used, whether in the private or public domain. And many different sectors, as automotive, health or insurance develop such products, which can gather, analyze and generate data thanks to sensors and connection. If companies look like interested by this business opportunity, the adoption of SCP is not obvious to consumers.

Drawing on the Theory of Planned Behavior (TPB) and on the concept of Consumer innovativeness, this study proposes a model to better understand the intention to adopt SCP. To test our proposed research model, we used an online survey to collect data from a convenient sample of young people from generation Z.

According to the results, it seems that intention to adopt SCPs depends on feelings about this decision (subjective norms), personal attitudes towards SCPs and cognitive innovativeness (intellectually interesting and challenging products). But as far as the intention to adopt SCPs linked to insurer is concerned, the subjective norms and the cognitive innovativeness are identified as two main variables.

Keywords: Brand Trust, Smart connected products, Theory of planned behavior, Insurance.

Introduction

As underlined by Hoffman and Novak (2015, p. 11), "We are now entering the third phase of the Internet, the Internet of Things phase, where consumers can not only interact directly with the devices themselves, but in addition the devices can interact with each other". The first phase of internet was essentially technological and informational-oriented, while the second one was mainly social-oriented.

Smart-connected products (SCPs), although highly varied¹, generally share the same components: chips, sensors, and software programs connected to the Internet. They are able to collect, analyze, and diffuse data (Rijsdijk and Hultink, 2009).

SCPs incorporate new technologies and thus are innovative products. So, it seems logical to wonder if their adoption by the consumer follows the same model as that brought to light for the adoption of new products. For example, it has been shown that the adoption of new products relies on individual traits such as innovativeness (Roehrich, 2004). According to the Theory of Planed Behavior (TPB) (Fishbein and Ajzen, 1975), the intention to adopt a given behavior – adoption of SCPs – depends on the attitude towards this behavior (am I favorable/unfavorable to the adoption of SCPs), the perceived control towards this behavior (would I be able to operate SCPs) and the subjective norms (what do people think about using SCPs).

This paper aims to examine the following research questions.

- 1) Can the adoption of SCPs be explained by the consumer innovativeness?
- 2) Does the TBP constitute a relevant theoretical framework to explain the adoption of SCPs?
- 3) Does the product category matter: does the adoption of SCPs linked to the insurer differ from the adoption of others SCPs?

The consumer attitude towards SCPs is ambivalent. SCPs can generate resistance (Chouk and Many, 2016). On the one hand, three consumers in four consider that SCPs tend to improve their everyday life. On the other one, two in three consider these products as pointless².

-

¹ Toothbrush, shoes, cars, bathroom scale...

² IFOP, 2014, France.

An undeniable enthusiasm for SCPs can be observed, both among practitioners and researchers. Indeed, a better understanding of factors enabling or inhibiting the adoption of such products is needed. This research makes an important theoretical contribution by revisiting the concept of innovativeness and a well-established theoretical framework: the TPB.

This paper is structured as follow. The conceptual and theoretical frameworks are first presented. Then, an integrative model – including the consumer innovativeness and the TPB - is proposed and tested. The results are then discussed.

Conceptual and theoretical framework

Smart Connected Products (SCP): Definition and Issues

Definition of smart-connected products

Digital technologies know a new transformation since the early 2010s with the emergence of smart-connected products (Barlatier, 2016) and the internet of things. Porter and Heppelmann (2015) speak about a '3rd wave of competition based on the IT' which is characterized by the fact that information technologies are an integral part of products, through the presence of electronic chips, sensors, and software programs connected to the Internet. They so distinguish three components characterizing SCP. "All smart, connected products, from home appliances to industrial equipment, share three core elements: physical components (such as mechanical and electrical parts); smart components (sensors, microprocessors, data storage, controls, software, an embedded operating system, and a digital user interface); and connectivity components (ports, antennae, protocols, and networks that enable communication between the product and the product cloud, which runs on remote servers and contains the product's external operating system)" (Porter and Heppelmann, 2015, p. 98).

Interest of smart-connected products for companies and brands

This new digital era opens a range of possibilities which comes to revolutionize as well the social sphere as the organizational one. According to Gartner, there will be more than 20 billion of SCPs in the world, in 2020. The progress of crossed analysis with Big Data could

leverage their utility for companies. Thanks to their connectivity component, SCPs produce a huge quantity of data relative to uses and behaviors, so allowing a continuous improvement of their features and performance. Smart-connected devices produce an important quantity of data which might be of interest to companies and brands. These data, if analyzed, could potentially constitute a competitive advantage because they allow a better understanding of the consumer behavior, and improve the customer knowledge.

Certain services could know a real revolution thanks to SCPs. This is, for example, the case of the insurance industry. The SCPs will most probably have a radical impact in this sector, because they could question its core business, namely the mutualization of risks.

Theory of Planned Behaviour

The development of integrated models of behavior has received considerable attention in the literature (Armitage and Conner, 2001). The Theory of Planned Behavior (Ajzen, 1985, 1991) is essentially an extension of the previous Theory of Reasoned Action (Fishbein and Ajzen, 1975), commonly known TRA. This theory is based on the premise that individuals consider available information to assess the impact of their choices (expected advantages vs. perceived disadvantages). Behavior is a direct function of behavioral intention. TRA provides a conceptual framework for explaining behavior intention by two major components: attitude towards desirable behavior and subjective norms.

However, the TRA has to address a few limitations. This theory doesn't consider factors which constrain individuals and may have negative impact on their intention to engage in a behavior (skills, abilities, available time) (Kefi, 2010).

Ajzen (1985) has proposed an extension of the theory by including perceptions of behavioral control as an additional predictor of intentions and behavior. He developed the TPB, widely cited in international scientific literature (Eagly and Chaiken, 1993). This theory was successfully used to explain and predict individual decision Pavlou to follow a particular behavior in many different contexts (Sheppard *et al.*, 1988; and Fygenson, 2006). Several academic journals proposed meta analyses which highlight its predictive power on the intention to engage in a particular behavior (Godin and kok, 1996; Notani, 1998; Armitage

and Conner, 2001). According to this social cognitive theory, proximal determinants of behavior are divided in two main categories:

- emotional and affective factors: attitude (or overall evaluation of the behavior), and subjective norms (or individual's beliefs about significant others' evaluation of this behavior);
- <u>cognitive factors</u>: perceived behavioral control or expectancy that performance of the behavior is under control.

Consumer innovativeness

Researchers in marketing are paying attention to consumer innovativeness since the 1960s.

Innovativeness as a concept

Innovativeness is defined as "the degree to which an individual makes innovation decisions independently of the communicated experience of others" (Midgley and Dowling, 1978, p. 235), or as "the degree to which an individual is relatively earlier in adopting new ideas than the average member of his social system" (Rogers and Shoemaker, 1971, p. 27).

For some authors, consumer's innovativeness is domain- or product-specific (Goldsmith and Hofaker, 1991). For others researchers, innovativeness is considered as a personality trait generalizable through several categories of products (Midgley and Dowling, 1978). Shared by all the individuals at different degrees, innovativeness is considered as a personality's trait dominating among pioneers, those consumers who tend to adopt new products in an early way and independently of their circle of acquaintances (Rogers, 1962).

This personality's trait must be considered as a latent construct that can be analyzed and measured through its demonstrations (Le Louarn, 1997).

Consumer innovativeness measurement

Rogers (1962) initiated a new way in measuring consumer's innovativeness, based on the time of adoption of a new product that is the time elapsed between the product launch and its effective adoption by a given individual. Midgley and Dowling (1978) criticized this measurement method for theoretical and methodological reasons. From a theoretical point of

view, the main criticism concerns the fact that the time of adoption is a temporal construct which really has no relation with the latent construct of innovativeness. From a methodological point of view, measuring consumer's innovativeness by the time of adoption raise problems of validity and reliability: first, it is difficult to make comparisons between studies; second, the time of adoption cannot be used to predict behavior, and third, the measurement is biased, as it depends on the capacity of the consumer to remember the time elapsed between the launch and the adoption of the new product.

In response to these critics, a new kind of measure was proposed: it consists in self-assessment scales describing typical behaviors of innovative consumers. Some of these scales are domain- or product-specific (Godsmith and Hofaker, 1991), while others are more universal, and are either unidimensional (Bruner and Kumar, 2007), or multidimensional (Roehrich, 1994).

More recently, Vandecateele and Geuens (2010) underline some weaknesses of consumers' innovativeness scales: first, they do not take into account the entire motivations to buy novelties, and second, they present a poor predictive power of new products purchase. In order to improve the measure of consumer' innovativeness and its predictive power, they develop the Motivated Consumer Innovativeness Scale (MCI). This 20-item scale includes four motivations: functional innovativeness (product performance), hedonic innovativeness (pleasure), cognitive innovativeness (mental stimulation), and finally, social innovativeness (differentiation) (table 2).

Table 2: Dimensions of the MCI scale and comparisons with other scales

Definitions			Presence in other scales				
(Vandecateele and Geuens, 2010, p. 310)							
"The	self-reported	consumer	Venkatraman	and	Price		
innovativeness motivated by affective and			(1990)				
sensory stimulation and gratification"			Roehrich (1994, 2004)				
			Baumgartner and Steenkamp				
			(1996)				
	"The innovati	(Vandecateele and Geuens, 2 "The self-reported innovativeness motivated by	(Vandecateele and Geuens, 2010, p. 310) "The self-reported consumer innovativeness motivated by affective and	(Vandecateele and Geuens, 2010, p. 310) "The self-reported consumer Venkatraman innovativeness motivated by affective and sensory stimulation and gratification" Roehrich (1994) Baumgartner and self-reported consumer Venkatraman (1990) Roehrich (1994)	(Vandecateele and Geuens, 2010, p. 310) "The self-reported consumer Venkatraman and innovativeness motivated by affective and (1990) sensory stimulation and gratification" Roehrich (1994, 2004) Baumgartner and Steen		

Dimensions	Definitions	Presence in other scales				
	(Vandecateele and Geuens, 2010, p. 310)					
Social	"Self-reported consumer innovativeness	Roehrich (1994)				
Innovativeness	motivated by the self-assertive social					
	need for differentiation"					
Cognitive	"The self-reported consumer	Venkatraman and Price				
Innovativeness	innovativeness motivated by the need for	(1990)				
	mental stimulation"	Baumgartner and Steenkamp				
		(1996)				
Functional	"Self-reported consumer innovativeness	Venkatraman (1991)				
Innovativeness	motivated by the functional performance					
	of innovations"					

Research hypothesis and model

Theory o Planned Behavior and intention to adopt SCPs

Attitude depends on perceived consequences of the behavior. Individuals estimate the likelihood that an outcome probably arises as a result of the behavior and try to evaluate it. The more perceived advantages (or consequences seen as positive) are evident, the more attitude toward behavior will be positive. Attitude refers to stable judgments, which encourage individuals to engage in a particular behavior. According to Gao and Bai (2014) perceived utility and enjoyment impact positively the intention to adopt SCPs (hypothesis H1).

H1: Attitude towards the adoption of SCPs is positively related to the intention to adopt such products.

H1 is declined in two sub-hypothesis depending on considering SCPs in general "generic SCPs" (H1a) or smart products connected with an insurer "SCPs linked to an insurer" (H1b).

Subjective norms represents not only perception of significant others' preferences about the adoption of new behavior by an individual, but also his/her motivation to comply with these expectations. It deals with the evaluation that behavior is approved or not by most people who are important to him/her (Ramayah and Gopi, 2009). If an individual thinks that his/her family

members or close friends expect him/her to engage in a certain behavior, it will be his/her intention to do so. As SCPs are relatively new products and potential users don't have enough feed back regarding their use (Gao and Bai, 2014). That's why significant others' preferences play a major role in SCPs adoption. We can state the following hypothesis (H2):

H2: Subjective norms concerning adoption of SCPs are positively related to the intention to adopt such products.

H2 is declined in two sub-hypothesis depending on considering SCPs in general "generic SCPs" (H2a) or smart products connected with an insurer "SCPs linked to an insurer" (H2b).

Perceived behavioral control reflects the ability to act on one's environment and influence what will happen (White, 1959). Control factors could be both internal (personal deficiencies, skills...) and external (opportunities, barriers...). The more individuals believe they have control over their behavior, the more they are likely to engage in it. On the other hand, if individuals anticipate potential difficulties, they will be unwilling to adopt the behavior. By nature, SCPs are ubiquitous (inside and outside households), but also versatile products. So, many consumers are not able to understand how data are generated, shared and gathered. If perceived behavioral control is too weak, there will be sometimes a tendency not to buy these products. On the basis of these findings, we can state the following hypothesis (H3).

H3: Perceived control concerning adoption of SCPs is positively related to the intention to adopt such products.

H3 is declined in two sub-hypothesis depending on considering SCPs in general "generic SCPs" (H1a) or smart products connected with an insurer "SCPs linked to an insurer" (H1b).

Consumer innovativeness and intention to adopt SCPs

The four motivations identified by Vandecateele and Geuens (2010) are proved to be relevant predictors of the adoption of new products.

Hedonic innovativeness, "the self-reported consumer innovativeness motivated by affective and sensory stimulation and gratification", explains the intention to adopt new products" (Baumgartner and Steenkamp, 1996; Roehrich, 1994, 2004; Venkatraman and Price, 1990).

By analogy, it can be stated that hedonic innovativeness is a predictor of intention to adopt SCPs.

H4: Hedonic innovativeness is positively related to the intention to adopt SCPS.

H4a: Hedonic innovativeness is positively related to the intention to adopt generic SCPs.

H4b: Hedonic innovativeness is positively related to the intention to adopt SCPs connected with an insurer.

It has been shown that the cognitive innovation, defined as "the self-reported consumer innovativeness motivated by the need for mental stimulation", is positively linked to the adoption of new products (Venkatraman and Price, 1990; Baumgartner and Steenkamp, 1996). Thus, hypothesis H5 can be stated.

H5: Cognitive innovativeness is positively related to the intention to adopt SCPs.

H5a: Cognitive innovativeness is positively related to the intention to adopt generic SCPs.

H5b: Cognitive innovativeness is positively related to the intention to adopt SCPs connected with an insurer.

Functional innovativeness, the "self-reported consumer innovativeness motivated by the functional performance of innovations", predicts the adoption of new products (Venkatraman, 1991). By analogy, and given that SCPs are new products, hypothesis H6 can be stated.

H6: Functional innovativeness is positively related to the intention to adopt SCPS.

H6a: Functional innovativeness is positively related to the intention to adopt generic SCPs.

H6b: Functional innovativeness is positively related to the intention to adopt SCPs connected with an insurer.

Social innovation, defined as the "self-reported consumer innovativeness motivated by the self-assertive social need for differentiation", predicts the intention to adopt new products

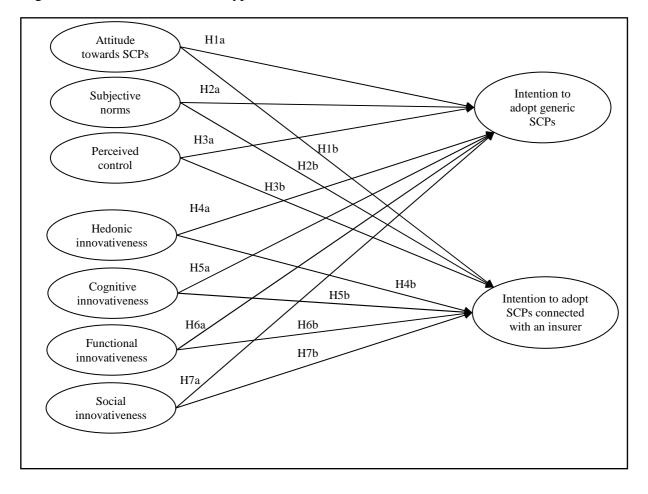
(Roehrich, 1994). Given that SCPs can be considered as new products, hypothesis H7 is postulated as follow.

H7: Social innovativeness is positively related to the intention to adopt SCPs.

H7a: Social innovativeness is positively related to the intention to adopt generic SCPs.

H7b: Social innovativeness is positively related to the intention to adopt SCPs connected with an insurer.

Figure 1 – Model and research Hypothesis



Empirical Study and Findings

Research methodology

The data were collected on a convenient sample of young people from generations Y and Z (N = 266; average age = 18.98 years, standard deviation = 1.197; age between 17 and 25).

Measurements

The TPB and consumer innovativeness concepts were measured with already validated scales.

Consumer innovativeness

Unidimensional scales of innovativeness, if they count a limited number of items (six items for the Goldsmith and Hofaker's scale (1991) do not allow the identification of specific motivations which can incite the consumer to adopt a new product. For that reason, the MCI scale (Vandecateele and Geuens, 2010) was chosen to measure consumer innovativeness. This scale was recently reused in recent researches and tends to show a universal character (Li et al., 2015). This scale is composed of 20, seven-point Lickert-type statements (Appendix 1).

Theory of Planned Behavior

The subjective norms concept was measured by a scale composed of six/seven-point Lickert-type statements (Appendix 1). The attitude toward smart connected products (SCP) was measured by a scale composed of three/seven-point Lickert-type statements (Appendix 1). And finally, the perceived control was measured by a scale composed of four/seven-point Lickert-type statements (Appendix 1). These scales are adapted from Shih and Fang (2004) who conduct a survey on the adoption of internet banking. This scale was chosen because of the closeness between internet and the Internet of Things.

Intention to adopt SCPs

The intention to adopt generic SCPs is measured by two items (Appendix 1), while the intention to adopt SCPs in the insurance domain is measured by four items (Appendix 1).

To test the scales reliability, Principal Component Analyses were carried out³. Then, the model and hypothesis were tested using structural equation modeling with AMOS. A bootstrap was performed in order to obtain a P value for each estimated parameter.

Findings

TPB and intention to adopt SCPs

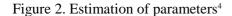
Hypotheses H1a, H2a, H2b, and H3a are validated, while H1b and H3b are rejected (Figure 2). The TPB is relevant in the case of generic SCPs. The adoption of such products depends on attitude, subjective norms, and perceived control. On the contrary, the TPB is not a relevant framework when it comes to explain the adoption of SCPs connected with an insurer.

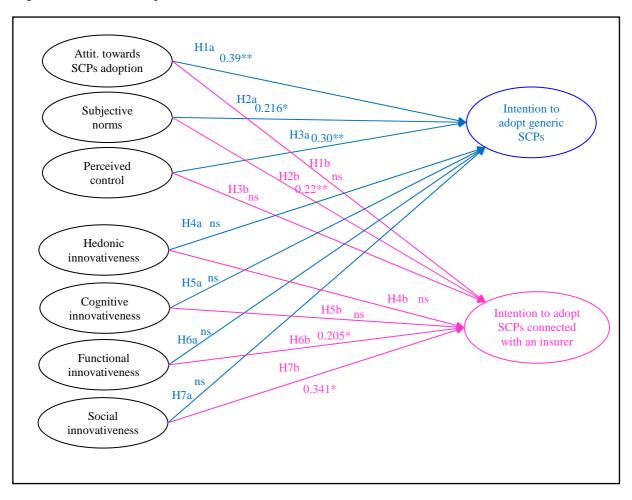
Consumer innovativeness and intention to adopt SCPs

Only hypotheses H6b and H7b are validated, while H4a, H4b, H5a, H5b, H6a, and H5a are rejected (Figure 2). The consumer innovativeness is not relevant when it comes to explain the adoption of generic SCPs. On the contrary, two dimensions of the consumer innovativeness – functional and social innovativeness – are predictors of the intention to adopt SCPs connected with an insurer.

_

³ Results are not presented here.





^{*} p<0,05; **p<0,001: Chi-square = 1176,268, degrees of freedom = 336, P<,001; RMSEA = 0,091

On the one hand, the results show that the intention to adopt generic SCPs is exclusively predicted by the TPB. Consumer innovativeness seems to have no influence on the intention to adopt generic SCPs. On the other hand, subjective norms and two dimensions of the consumer innovativeness predict the intention to adopt SCPs connected with an insurer: namely the functional and the social innovativeness.

⁴ More detailed findings in Appendix 2

Discussion and conclusion

Theoretical Contributions

In our model, the TPB is presented as a relevant theoretical framework, explaining the adoption of SCPs, whether connected or not to an insurance company. In what concerned generic SCP's, the relevance of TPB is confirmed. Yet, the perceived control only explains the adoption of generic SCPs. It does not explain the intention to adopt SCPs linked to insurer. The subjective norms (what significant others think about the adoption of the SCP) and attitude towards the adoption of the SCPs explain generally the intention to adopt generic SCPs.

As far as the intention to adopt SCPs linked to an insurer is concerned, the explanatory power of subjective norms, perceived control and attitude is not significant. The social and functional innovativeness are identified as the two main predictors of the intention to adopt such SCPs. The consumer innovativeness framework seems to be more relevant than the TPB.

Managerial Contributions

The present study yields some interesting insights for practice. For the manufacturers who target the young consumers with SCP's connected with an insurer, it is crucial to develop useful and practical SCPs, because the intention to adopt them depends partly on the functional innovativeness. As far as marketing business and communication is concerned, managers should underline this argument while considering as well the weight of subjective norms. Messages showing the interaction with other people and the positive reactions of friends or members family regarding the adoption of SCP's should be put forward. Insurers' communication should also put forward the relevance of the SCP, insisting on their power of differentiation (social innovativeness).

The recommendations for generic SCPs should differ. The adoption of generic SCPs is mainly explained by the TPB. None of the four dimensions of the consumer innovativeness is significantly linked to the intention to adopt such products. The attitude towards generic SCPs is the stronger predictor of intention to adopt them, although the perceived control and subjective norms are also significantly and positively related to this intention. Insurers'

communication should put forward the relevance of generic SCP's, insisting on the opinion of the close friends – or relatives – of the consumer (subjective norms). They also have to "educate" the consumer to by-pass restraint for purchase SCPs due to their perceived complexity (perceived control).

Limitations and future research

As far as we know, this research is one of the first exploratory studies in the early stage of understanding the SCPs adoption phenomenon. The results must be confirmed with more representative and broader samples. The model can be refined and completed by the introduction of new mediating and/or moderating variables. For example, it is likely that variable such as familiarity and/or subjective knowledge towards SCPs play an important role in their adoption.

Future studies need more contextualization. They should focus on specifics SCPs and describe their features as well as the nature of the collected and transferred data, and the actors to whom these data can be transferred. It would be also interesting to survey Gen-Xers to highlight possible effects of generation.

Appendix 1 – Measurement scales

Theory of Planned Behavior (TPB) scale (Shih and Fang (2004)

Subjective norms

SUBNORM1 Most people who are important to me would think that using SCP is a foolish/wise idea.

SUBNORM2 Most people who are important to me would think that using SCP is a good idea.

SUBNORM3 Most people who are important to me would think I should use SCP.

SUBNORM4 My family who are important to me would think that using SCP is a foolish/wise idea.

SUBNORM5 My family who are important to me would think that using SCP is a good idea.

SUBNORM6 My family who are important to me would think I should use SCP.

Perceived control

PER_CO1 I would be able to operate SCP.

PER_CO2 I have the resources to use SCP.

PER CO3 I have the knowledge to use SCP.

PER CO4 I have the ability to SCP.

Attitude towards Smart Connected Products (SCP)

ATT-SCP1 I feel using SCP is a foolish/wise idea.

ATT-SCP2 I feel using SCP is a good idea.

ATT-SCP3 I like to use SCP.

Intention to adopt SCP

INTEN1 I plan to use SCP.

INTEN2 I intend to use SCP within the next 3 months.

New items

INTEN3 I intend to use a bracelet or a smart connected-watch which will allow my insurer to obtain information on my physical activity (distance, steps...).

INTEN4 In the medium term, it is likely that I subscribe to a connected insurance which will allow my insurer to obtain information on kilometers traveled with my car (pay how you drive insurance).

INTEN5 In the medium term, it is likely that I subscribe to a connected insurance which will allow my insurer to obtain information on my way of driving (pays as you drive insurance).

Motivated Consumer Innovativeness (MCI) scale (Vandecasteele and Geuens, 2010)

Social innovativeness

SOC1 I love to use innovations that impress others.

SOC2 I like to own a new product that distinguishes me from others who do not own this new product.

SOC3 I prefer to try new products with which I can present myself to my friends and neighbors.

SOC 4 I like to outdo others, and I prefer to do this by buying new products which my friends do not have.

SOC 5 I deliberately buy novelties that are visible to others and which command respect from others.

Functional innovativeness

FUNC1 If a new time-saving product is launched, I will buy it right away.

FUNC2 If a new product gives me more comfort than my current product, I would not hesitate to buy it.

FUNC3 If an innovation is more functional, then I usually buy it.

FUNC4 If I discover a new product in a more convenient size, I am very inclined to buy this.

FUNC5 If a new product makes my work easier, then this new product is a "must" for me.

Hedonic innovativeness

HEDO1 Using novelties gives me a sense of personal enjoyment.

HEDO2 It gives me a good feeling to acquire new products.

HEDO3 Innovations make my life exciting and stimulating.

HEDO4 Acquiring an innovation makes me happier.

HEDO5 The discovery of novelties makes me playful and cheerful.

Cognitive innovativeness

COGN1 I mostly buy those innovations that satisfy my analytical mind.

COGN2 I find innovations that need a lot of thinking intellectually challenging and therefore I buy them instantly.

COGN3 I often buy new products that make me think logically.

COGN4 I often buy innovative products that challenge the strengths and weaknesses of my intellectual skills.

COGN5 I am an intellectual thinker who buys new products because they set my brain to work.

Appendix 2 – Detailed findings

Parameter			Estimate	Lower	Upper	P
Intention to adopt GSCP	<	Subjective norms	,216	.075	.343	.025*
Intention to adopt GSCP	<	Att. towards SCP adoption	.389	.210	.593	.004**
Intention to adopt GSCP	<	Perceived control	,301	,159	,431	,010**
Intention to adopt GSCP	<	Functional innovat.	,060	-,142	,233	,705
Intention to adopt GSCP	<	Social innovat.	,097	-,012	,261	,131
Intention to adopt GSCP	<	Hedonist innovat.	-,120	-,277	,051	,229
Intention to adopt GSCP	<	Cognitive innovat.	,208	,023	,381	,067
Intention to adopt ISCP	<	Subjective norms	,222	,078	,366	,009**
Intention to adopt ISCP	<	Att. towards SCP adoption	,014	-,167	,166	,924
Intention to adopt ISCP	<	Functional innovat.	,205	,032	,349	,044*
Intention to adopt ISCP	<	Social innovat.	,341	,195	,487	,011*
Intention to adopt ISCP	<	Innovation_hédoniste	-,032	-,232	,097	,656
Intention to adopt ISCP	<	Innovation_cognitive	-,019	-,211	,155	,855
Intention to adopt ISCP	<	Contrôle perçu	-,006	-,127	,151	,980
SUBNORM6	<	Normes_subjectives	,831	,762	,877	,019*
SUBNORM5	<	Normes_subjectives	,674	,570	,769	,005**
SUBNORM3	<	Normes_subjectives	,789	,684	,828	,039*
SUBNORM2	<	Normes_subjectives	,742	,663	,839	,005**
ATT_SCP3	<	Att. towards SCP adoption	,722	,599	,860	,005**
ATT_SCP2	<	Att. towards SCP adoption	,844	,721	,923	,026*
ATT_SCP1_inv	<	Att. towards SCP adoption	,516	,386	,654	,009**
PER_CO3	<	Perceived control	,845	,775	,935	,003**
PER_CO2	<	Perceived control	,701	,608	,766	,013*
PER_CO1	<	Perceived control	,674	,576	,773	,010**
FUNC5	<	Functional innovat.	,606	,469	,757	,005**
FUNC4	<	Functional innovat.	,710	,589	,849	,006**
FUNC2	<	Functional innovat.	,641	,485	,772	,012*
SOC5	<	Social innovat.	,859	,782	,919	,020*
SOC4	<	Social innovat.	,725	,625	,796	,010**
SOC3	<	Social innovat.	,754	,677	,824	,007**
HEDO4	<	Hedonist innovat.	,704	,621	,790	,009**
HEDO2	<	Hedonist innovat.	,709	,598	,803	,010**
HEDO1	<	Hedonist innovat.	,745	,641	,873	,004**
COGN4	<	Cognitive innovat.	,767	,666	,857	,007**
COGN3	<	Cognitive innovat.	,673	,536	,774	,020*
COGN2	<	Cognitive innovat.	,642	,512	,755	,011**
INTEN1	<	Intention to adopt GSCP	,905	,828	1,006	,004**
INTEN2	<	Intention to adopt GSCP	,765	,690	,829	,021**
INTEN3	<	Intention to adopt ISCP	,898	,834	,945	,025**
INTEN4	<	Intention to adopt ISCP	,872	,807	,913	,032**
INTEN5	<	Intention to adopt ISCP	,466	,366	,585	,012**
INTEN6	<	Intention to adopt ISCP	,492	,384	,596	,014**

References

- Ajzen, I., 1991. The theory of planned behavior, Organizational Behavior and Human Decision Processes, 50, p. 179–211.
- Ajzen, I. 1985. From intentions to actions: A theory of planned behaviour, In J. Kuhl & J. Beckman (Eds.) *Action-control: From cognition to behaviour*. p. 11-39. Heidelberg: Springer.
- Armitage, C.J. and Conner, M. 2001. Efficacy of the Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*. 40, 4, p. 471-499.
- Barlatier, P.J. 2016. Management de l'innovation et nouvelle ère numérique enjeux et perspectives. *Revue Française de Gestion*. 42, 254, p. 55-63.
- Baumgartner H., Steenkamp J.B., 1996. Exploratory consumer buying behavior: Conceptualization and measuremen. *International Journal of Research in Marketing*, 13, 2, p. 121–137.
- Bruner G. C. and Kumar A., 2007. Gadget lovers. *Journal of the Academy of Marketing Science*, 35, p. 329–339.
- Chouk I. and Mani Z. 2016. Les objets peuvent-ils susciter une résistance de la part des consommateurs ? Une étude netnographique, *Décisions Marketing*, N° 84, p.19-42.
- Eagly, A.H. and Chaiken, S. 1993. The psychology of attitudes. Fort Worth. TX: Harcourt, Brace, & Janovich. 794.
- Fishbein, M. and Ajzen, I. 1975. Belief, attitude, intention and behavior: an introduction to theory and research. Adisson-Wesley, Reading, MA.
- Gao L., and Bai, X. 2014. A unified perspective on the factors influencing consumer acceptance of internet of things technology. *Asia Pacific Journal of Marketing and Logistics*. 26, 2, p. 211-231.
- Godin, G. and Kok, G. 1996. The theory of planned behavior: A review of its applications in health-related behaviors. *American Journal of Health Promotion*. 11, p. 87-98.
- Goldsmith R.E. and Hofacker C.F., 1991. Measuring consumer innovativeness. *Journal of the Academy of Marketing Science*, 19, 3, p. 209–221.
- Hoffman, D. L. and Novak, T. 2015. Emergent experience and the connected consumer in the smart home assemblage and the Internet of things. Work in progress, available on Social Science Research Network blog. Retrieved from http://ssrn.com/abstract=2648786. DOI= 10.2139/ssrn.2648786, 2015.
- Kefi, H. 2010. Mesures perceptuelles de l'usage des systèmes d'information : Application de la théorie du comportement planifié. *La revue Humanisme et Entreprise*. 297, p. 41-65.
- Le Louarn P. 1997. La tendance à innover des consommateurs: Analyse conceptuelle et proposition d'une échelle de mesure, *Recherche et Applications en Marketing*, 12, 1, p. 3–20.
- Li, G., Zhang, R. and Wang, C. 2015. The role of product originality, usefulness and motivated consumer innovativeness in new product adoption intentions. *Journal of Product Innovation Management*. 32, 2, p. 214–223.
- Midgley D.F. and Dowling G.R., 1978. Innovativeness: The concept and its measurement", *Journal of Consumer Research*, 4, 4, p. 229–242.
- Notani, A.S. 1998. Moderators of Perceived Behavioral Control's Predictiveness in the Theory of Planned Behavior: A Meta-Analysis. *Journal of Consumer Psychology*. 7, 3, p. 247-271.

- Pavlou, P.A. and Fygenson, M. 2006. Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior, *MIS Quarterly*. 30, p. 115-143.
- Porter, M. and Heppelmann, J. 2014. How smart-connected products are transforming competition", *Harvard Business Review*. (November 2014), 71.
- Porter, M. and Heppelmann, J. 2015. How smart-connected products are transforming companies", *Harvard Business Review*. (October 2015), 10, p. 97-114.
- Ramayah, K. and Gopi, M. 2009. A decomposed theory of reasoned action to explain intention to use Internet stock trading among Malaysian investors. *Computers in Human Behavior*. 25, 6, p. 1222–1230.
- Rijsdijk S.A., Hultink E.J., 2009. How today's consumers perceive tomorrow's smart products, *The Journal of Product Innovation Management*, 26, 1, p. 24-42.
- Roehrich G. 2004. Innovativités hédoniste et sociale: Proposition d'une échelle de mesure, *Recherche et Applications en Marketing*, 9, 2, p. 19–42.
- Rogers E.M., 1962. Diffusion of innovations. The Free Press, New York, 1962.
- Rogers E.M. and Shoemaker, F.F. 1971. *Communications of innovations*. The Free Press, New York.
- Sheppard, B.H. Hartwick, J. and Warshaw, P. 1988. The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. *Journal of Consumer Research*. 15, 3, p. 325-343.
- Singh, Y.Y. and Fang, K. 2004. The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research*. 14, 3, p. 213-223.
- Vandecasteele B. and Geuens M., 2010. Motivated Consumer innovativeness: concept, measurement, and validation, *International Journal of Research in Marketing*, 27, p. 308-318.
- Venkatraman M.P and Price L.L, 1990. Differentiating between cognitive and sensory innovativeness: Concepts, measurement, and implications, *Journal of Business Research*, 20, 4, p. 293–315.
- Venkatraman M.P., 1991. The impact of innovativeness and innovation type on adoption, *Journal of Retailing*, 67, 1, p. 51–67.
- White R.G., 1959. *Motivation reconsidered: The concept of competence. Psychological Review*, 66, p. 297-333.