Customers' Continuance Intention Regarding Mobile Service Providers – A *Status Quo Bias* Perspective

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ABSTRACT

Using a *status quo bias* perspective, this paper examines the relation between customers' inertia and continuance intention, identifying the moderating role of contractual subscription on this relationship. Our model is validated using data collected from 457 mobile phone service customers and partial least squares. Results show that customers continue with mobile service providers due to their inertia resulting from habit and switching costs. The effect of customers' inertia on their continuance intention is stronger when they have a contractual subscription with the mobile service provider. Our results show the importance of including inertia when studying customers' continuance intention and taking into account the specific moderating effect of contractual subscription.

Keywords: status quo bias, continuance intention, customers' inertia, contractual subscription, mobile service providers.

INTRODUCTION

The mobile phone service market shows considerable and continued growth in terms of market size, variety of services and intense competition (Fuentelsaz et al., 2012; GSMA, 2015). Although a dynamic market, mobile phone services are ranked below the average in customer satisfaction compared with other information technologies (IT) services (Malhotra & Malhotra, 2013). With such a low ranking, it is not surprising to see high switching behaviors (Shin & Kim, 2008). In Europe, switching behaviors concerning mobile services have significantly increased recently, with rates exceeding 41% in Spain, 37% in the Netherlands, 35% in Germany, 33% in France and 32% in the U.K. (Khedhaouria & Beldi, 2014; Rusby & Sale, 2015). Hence, to discourage switching behavior in mobile service customers, providers must understand what motivates their customers to continue their services (Kim et al., 2013).

The Expectation Confirmation Model, or ECM (Bhattacherjee, 2001), has mostly been used to predict IT continuance intention (Nabavi et al., 2016). The ECM posits that continuance intention is fundamentally a purposeful behavior based on conscious decisions related to expectations of benefits from future usage and satisfaction about prior usage (Bhattacherjee, 2001). Other research indicates that continuance intention might be habitual based on subconscious decisions related to repeated behavioral sequences (Limayem et al., 2007; Limayem & Cheung, 2011).

The ECM is appropriate for predicting continuance intention concerning a mobile technology in which customers interact with the technology without consuming any service but is not appropriate to predict the intention to continue using mobile services provided by an operator (Kim et al., 2013). Users of mobile services are not only mobile technology users but also service consumers (Ng & Kwahk, 2010; Boakye et al., 2014). Therefore, to understand customer continuance intention better it is important to seek alternative theoretical perspectives (Bhattacherjee & Lin, 2015) that consider the service aspect.

Continuance intention refers to a customer's tendency to continue an existing behavior (Bhattacherjee, 2001) and to maintain the so-called *status quo* (Kim & Gupta, 2012; Zhou, 2014a). Understanding why customers maintain the *status quo* can be useful for mobile service providers to retain their customers (Ng & Kwahk, 2010). The *status quo bias* theoretical perspective (Samuelson & Zeckhauser, 1988) offers a useful framework to explain customers' tendency to remain with their current service providers (Kim & Gupta, 2012). The framework highlights the role of inertia in explaining the bias resulting from rational decision making whereby customers consider the costs of switching from the *status quo* to new service providers (Chen & Hitt, 2002; Bawa, 1990). Indeed, inertia reflects a bias toward the *status quo* because a customer systematically favors continuing using the same service provider even when there are better alternatives (Polites & Karahanna, 2012). Inertia is conceptualized as resulting from conscious (*i.e.*, switching costs and satisfaction) and subconscious (*i.e.*, habit) choices leading to continuance intention (*i.e.*, maintaining the *status quo*) (Ng & Kwahk, 2010; Kim & Gupta, 2012; Polites & Karahanna, 2012).

Studies on inertia are well documented in the information system (IS) literature (Chen & Hitt, 2002; Gupta et al., 2007; Kim & Kankanhalli, 2009; Kim, 2009; Kim et al., 2005; Lapointe & Rivard, 2005; Lending & Straub, 1997). However, few empirical studies discuss the effect of

inertia on customer continuance intention for IT services in general (Bhattacherjee & Hikmet, 2007; Kim & Gupta, 2012; Polites & Karahanna, 2012) or for mobile services in particular (Ng & Kwahk, 2010; Zhou, 2014a).

Therefore, based on a *status quo bias* perspective (Samuelson & Zeckhauser, 1988), the objective of our study is to examine the effect of inertia on the intention of customers to continue using their current mobile services. Our model includes conscious (*i.e.*, switching costs and satisfaction) and subconscious (*i.e.*, habit) variables that are hypothesized to lead to continuance intention (*i.e.*, the *status quo*) (Ng & Kwahk, 2010; Kim & Gupta, 2012; Polites & Karahanna, 2012). Furthermore, our model accounts for contractual subscription as a moderator of this relationship because it has been suggested that customers with a contractual subscription are more likely to perceive that they are "locked in" to their service providers, which biases them toward the *status quo* (Valletti & Cave, 1998; Gerpott et al., 2001; Richards, 2015). Our model is validated using data collected from 457 mobile service customers and partial least squares (PLS).

The results demonstrate that customers may continue with mobile service providers (1) due to inertia resulting from habit and perceived switching costs; and (2) due to their habit and satisfaction with services. Results also show that the effect of customer inertia on continuance intention is stronger in the case of a contractual subscription.

Our study is original because it proposes a comprehensive model based on the *status quo bias* perspective to predict customer continuance intention for mobile services. From a theoretical perspective, our study contributes to the IS literature on continuance intention by identifying the mechanisms by which *status quo bias*, through inertia and contractual subscription, influences customer continuance intention and by showing how antecedents such as habit, switching costs and satisfaction are associated with both inertia and continuance intention. From a practical perspective, our research provides useful insights for mobile service providers to understand better how to retain their customers.

THEORY AND HYPOTHESES

Previous research on continuance intention

A review of the IS literature indicates that most studies on mobile continuance intention use the ECM to predict customer continuance intentions as shown in Table 1 (for details see Nabavi et al., 2016).

Table 1. Summary of previous IS research on mobile continuance intention (adapted from Nabavi et al., 2016)

Researcher	**Theory**	**IS continuance factors**
(Thong et al., 2006)	ECM	Perceived usefulness, enjoyment, ease of use, and satisfaction
(Hong & Tam, 2006)	ECM, TAM	Perceived usefulness, ease-of-use, enjoyment, monetary value, need for uniqueness, service availability, and social influence
(Hung, et al., 2007)	ECM, Innovation Model	Perceived usefulness, personal innovativeness, and satisfaction
(Kim et al., 2007)	TAM, TRA	Attitude, thinking and feelings
(Lin & Shih, 2008)	ECM, Trust, Needs Theory	Mobile technology trusting expectations and delivery satisfaction
(Kuo et al., 2009)	SERVQUAL	Service quality, perceived value, and customer satisfaction
(Lee et al., 2009)	Hertzberg's Two-Factor Theory	Information quality and motivation to use technology
(Wu et al., 2009)	ECM, Perceived Value	Customers' perceived value and satisfaction
(Deng et al., 2010)	ECM, cognitive absorption	Perceived utilitarian, perceived hedonic, and satisfaction
(Kim, 2010)	ECM, TPB	User satisfaction, perceived usefulness, enjoyment, and fee
(Ng & Kwahk, 2010)	SQBT	Satisfaction, perceived value and familiarity
(Shin et al., 2010)	TAM, TPB	Perceived usefulness, ease-of-use, cost rationality, service quality, and service variety.
(Liang & Yeh, 2011)	TAM, TRA	Playfulness, perceived ease-of-use and contextual factors (task and consumption place)
(Kim & Oh, 2011)	Utilitarian and Hedonic Values	Hedonic values, utilitarian values, and user experience
(Zhou, 2011)	UTAUT, Flow Theory	Perceived enjoyment, attention focus, user satisfaction, performance expectancy, and social influence
(Chen et al., 2012)	ECM	Information quality, system quality, process quality, hedonic value, perceived usefulness, confirmation, and satisfaction
(Chen, 2012)	ECM	Technology readiness, service quality, and satisfaction
(Kang et al., 2012)	Perceived usability, Channel Preference, Perceived Value	Perceived usability, channel preference, and perceived value
(Kim, 2012)	ECM	Habit, user satisfaction, perceived monetary value, and variety of use
(Zhao et al., 2012)	Customer Satisfaction, Service Quality, Justice	Service quality, justice and customer satisfaction

(Akter et al., 2013)	ECM	Perceived usefulness, service quality, trust, and satisfaction
(Chang et al., 2013)	TAM, Self-Determination Theory	Perceived convenience, playfulness, ease-of-use, and usefulness
(Kim et al., 2013)	ECM, VBAM	Technicality, perceived fee, value, usefulness, and attractiveness
(Liang et al., 2013)	TPB, Task-Technology fit	Task-technology fit, social norms, and contextual factors
(Setterstrom et al., 2013)	ECM	Perceived usefulness, enjoyment and fee
(Wang et al., 2013)	ECM	Trial experience and perceived fee
(Zhou, 2013)	Flow theory	Service quality, trust, satisfaction, information quality and flow
(Boakye et al., 2014)	TAM, Service Quality	System-service quality, customer-service quality, and service satisfaction
(Hsiao & Chang, 2014)	ECM, Value and Trust Perspective	Perceived value, perceived usefulness, and satisfaction
(Hong et al., 2014)	Attention-to-Affect Model	Liking, enjoyment, and engagement
(Khedhaouria & Beldi, 2010)	TAM, Utilitarian Hedonic Perspectives	Perceived usefulness, ease-of-use, and enjoyment
(Lu, 2014)	TAM, UTAUT	Personal innovativeness in information technology, perceived usefulness, perceived ease of use, and social influence
(Zhou, 2014a)	Resistance to Change	Trust, switching costs, flow experience, and perceived usefulness
(Zhou, 2014b)	TAM, Flow Experience	System quality, information quality, perceived usefulness, satisfaction, and flow
(Kim et al., 2016)	ECM, TAM, Motivation Theory	Information quality, perceived usefulness, and satisfaction
(Yuan et al., 2016)	ECM, TAM, Task-Technology fit	Satisfaction, perceived usefulness, task-technology fit, and risk

Legend: ECM Expectation Conformation Model; TAM Technology Acceptance Model; TPB Theory of Planned Behavior; TRA Theory of Reasoned Action; SQBT Status Quo Bias Theory; UTAUT Unified Theory of Acceptance and Use of Technology; VBAM Value-Based Adoption Model

According to the ECM, the technology's attributes (e.g., usefulness) and the user's experience with technology (e.g., satisfaction) are the most important factors in predicting a customer's continuance intention. Nevertheless, the use of the ECM is appropriate to predict the intention to continue using a mobile technology but not appropriate to predict the intention with the current mobile service provider (Kim el al., 2013). Users of mobile service are not only mobile technology users but also service consumers (Ng & Kwahk, 2010). Therefore, to understand customer continuance intention better it is important to seek alternative theoretical perspectives (Bhattacherjee & Lin, 2015) that consider the service aspect.

The *status quo bias* perspective (Samuelson & Zeckhauser, 1988) offers a useful framework that accounts for bias resulting from deciding to continue using an existing service, *i.e.*, maintaining the *status quo* (Kim & Gupta, 2012). Few empirical studies used the *status quo bias* perspective to understand customer continuance intention for IT services in general

(Bhattacherjee & Hikmet, 2007; Kim & Gupta, 2012; Polites & Karahanna, 2012) or for mobile services in particular (Ng & Kwahk, 2010; Zhou, 2014a).

The following paragraph presents the *status quo bias* perspective as a foundation of our conceptual model and hypotheses.

Status quo bias perspective

The *status quo bias* perspective posits that customers are biased toward maintaining the *status quo*, *i.e.*, toward "doing nothing or maintaining one's current or previous decision" (Samuelson & Zeckhauser, 1988, p. 7). According to Samuelson and Zeckhauser (1988), three factors contribute to *status quo bias*. First, the bias might be the result of *rational decision making* whereby customers consider the costs of switching from the *status quo* to alternatives based on their assessment. For instance, customers might recognize that other mobile service providers' offers are interesting, but they perceive that switching costs outweigh the potential gains, which biases them toward the *status quo*. Similarly, uncertainty about benefits of alternatives due to limited knowledge might lead customers to maintain their relationship (Kim & Gupta, 2012).

Second, rational decision making alone does not adequately explain *status quo bias*. The bias might be the result of *cognitive misperceptions* due to loss aversion. In other words, a customer tends to evaluate small potential losses as being greater than potential gains in making a decision concerning whether to switch away from the *status quo* (Kim & Kankanhalli, 2009).

Finally, the bias might be the result of *psychological commitment* to a service provider, which results in the intention to continue with it. "This commitment may be due to incorrectly factoring in sunk costs, striving for cognitive consistency in decision making, [..], attempting to avoid regret that might result from making a bad decision, or desiring to maintain a feeling of being in control" (Polites & Karahanna, 2012, p. 23). Customers tend to avoid possibly regrettable actions and prefer the *status quo* when they are generally satisfied with the current service provider (Ng & Kwahk, 2010; Kim & Gupta, 2012).

The *status quo bias* perspective represents a comprehensive theoretical framework. Such a status quo bias manifests as inertia. Inertia reflects a bias toward the *status quo* (Bawa, 1990). According to Polites & Karahanna (2012), although inertia implies a conscious choice by a customer to continue using a mobile service provider even were better alternatives to become available, its antecedents might also include subconscious choices such as habit with a service. Over time, customers develop a knowledge familiarity with their mobile service providers and develop a feeling of being in control, which biases them toward the *status quo* (Ng & Kwahk, 2010).

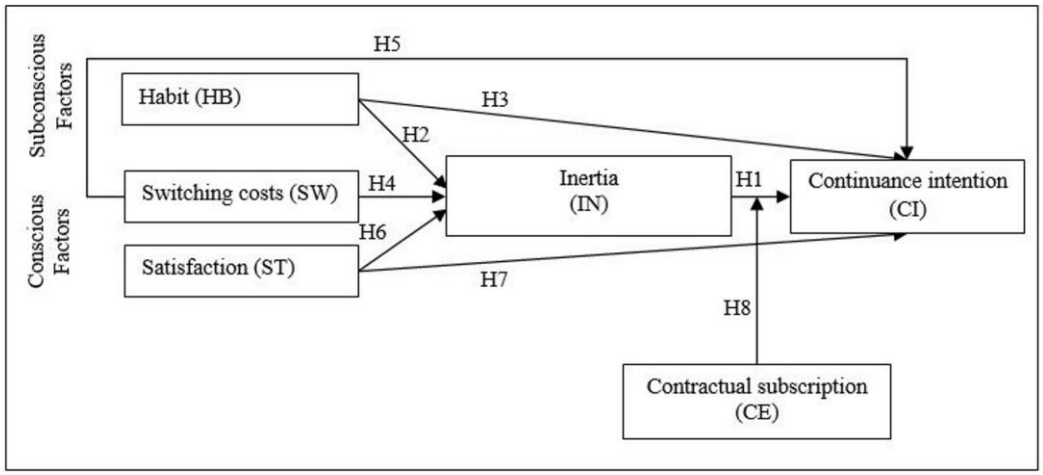
Our study identifies conscious (*i.e.*, switching costs and satisfaction) and subconscious (*i.e.*, habit) choices as causes of inertia (i.e., *status quo bias*) that can lead to continuance intention (*i.e.*, *status quo*). All causes mentioned above are summarized in Table 2.

Table 2. Causes of status quo bias

	Causes of inertia as *status quo bias*	Causes in our model
Rational decision making	Transition costs Uncertainty and risk	Switching costs Switching costs
Cognitive misperceptions	Loss aversion	Switching costs
Psychological commitment	Sunk costs Regret avoidance Illusion of control	Switching costs Satisfaction Habit

Our model (Figure 1) includes conscious and subconscious choices to examine the effect of inertia on customer continuance intention concerning current mobile services. Furthermore, the model accounts for contractual subscription as a moderator of this relationship because it has been suggested that customers with a contractual subscription are more likely to be biased toward the status quo than are those without such a subscription, because they feel "locked in" to their service providers (Valletti & Cave, 1998; Gerpott et al., 2001; Richards, 2015).

Figure 1. Research model based on the status quo bias perspective



We explain our model and its associated hypotheses below.

Inertia

Inertia represents a focal construct in our model and is defined as the "attachment to, and persistence of, existing behavioral patterns, even if there are better alternatives or incentives to change" (Polites and Karahanna, 2012, p. 24). Inertia reflects a bias toward the *status quo* (Bawa, 1990). Polites and Karahanna (2012) conceptualize inertia as a formative psychological construct, including *cognitive*, *behavioral*, and *affective* components. *Cognitive-based inertia* refers to the conscious use of a service, even when a customer is aware that using that service

is not necessarily a better, more efficient or more effective approach to doing things. That awareness reflects the fact that customers consciously continue because they feel "locked in" to the service provider due to switching costs (Chen & Hitt, 2002). *Behavior-based inertia* implies that customers use a service simply because it is what they have always done without much reflection. Finally, *affective-based inertia* occurs when customers continue using a service because changing would be stressful, because they enjoy or feel comfortable with it, or because they have developed a strong emotional attachment to it (Bawa, 1990).

Once inertia has set in, customers are not likely to voice intentions to switch to other service providers, irrespective of their perceptions of potential gains. In mobile customer behavior, this phenomenon has been labeled behavioral lock-in or captivity, which can lead to *status quo* even when customers acknowledge the presence of superior service providers (Ng & Kwahk, 2010; Kim & Gupta, 2012; Zhou, 2014a). In other words, inertia will result in continuance intention, independent of one's beliefs concerning potential gains of the new service. We therefore hypothesize the following:

H1: Customers' inertia is positively related to their continuance intention.

Habit

Customer inertia implies a conscious choice to stay with current service providers, but its antecedents can also include subconscious factors such as habit (Ng & Kwahk, 2010; Polites & Karahanna, 2012). Habit is defined as "learned sequences of acts that have become automatic responses to specific cues, and are functional in obtaining certain goals or end-states" (Verplanken & Aarts, 1999, p. 104). Habit is often confused with inertia despite the fact that the two constructs are clearly distinct (Bawa, 1990). Habit is a learned response automatically triggered by stimulus cues in the environment and can lead to "behavior-based inertia" (Polites & Karahanna, 2012, p. 24), whereas inertia is a conscious choice that reflects *status quo bias*. We hypothesize the following:

H2: The habit of using a mobile service provider is positively related to customer inertia.

Habit has also been studied in mobile research as a subconscious determinant of continuance intention (Kim, 2012). When individuals acquire a set of habits through routine use over time, they develop automatic behaviors that often serve to maintain the *status quo* (Ng & Kwahk, 2010). This leads us to investigate direct effects of habit on continuance intention. We therefore hypothesize the following:

H3: The habit of using a mobile service provider is positively related to customer continuance intention.

Switching costs

In addition to subconscious factors, customer inertia can result from a conscious bias toward the *status quo*. One explanation given for *status quo bias* is rational decision making based on an assessment of perceived switching costs. Commonly perceived switching costs include *transition costs*, which refer to the time and effort required to familiarize oneself with a service (Ng & Kwahk, 2010), and *sunk costs*, which refer to the reluctance of individuals to cut their losses and a tendency to justify previous commitments (Kim & Gupta, 2012). High switching

costs or the existence of few available alternatives can lead to customer inertia (Chen & Hitt, 2002). As switching costs such as time, money and effort increase, customers are more likely to perceive that they are "locked in" to their service providers, which in turn results in them being more likely to continue with their service providers (Vatanasombut et al., 2008). Similarly, to the extent that alternative service providers are perceived to be attractive, customers are unlikely to voice intentions to switch to another service provider (Kim & Gupta, 2012). We argue that switching costs might be related to both customer inertia and continuance intention. We therefore hypothesize the following:

H4: Perceived switching costs are positively related to customer inertia.

H5: Perceived switching costs are positively related to customer continuance intention.

Satisfaction

Another explanation for *status quo bias* is rational decision making based on satisfaction with an experienced mobile service (Ng & Kwahk, 2010; Kim & Gupta, 2012). Satisfaction is considered "the consumer's fulfillment response. It is a judgment that a product or service provided a pleasurable level of consumption-related fulfillment" (Oliver, 1997, p. 13) in relation to a specific need, desire, or goal (Deng et al., 2010). Satisfaction was usually modeled as a direct antecedent of behavioral intentions in previous research (Hung et al., 2007; Deng et al., 2010), and it was argued that customers who were satisfied with service providers develop an affective commitment, which increases their inertia (Ng & Kwahk, 2010; Kim & Gupta, 2012). Therefore, satisfied customers might be more likely to continue using the same mobile service (Deng et al., 2010). We therefore hypothesize the following:

H6: Satisfaction is positively related to customer inertia.

H7: Satisfaction is positively related to customer continuance intention.

Moderating role of contractual subscription

One of the central concepts in the mobile services market is contractual subscription (Alshurideh, 2010); customers pay a monthly fee to use the mobile communication network and are charged according to the time of use or the type of accessed services (Gerpott et al., 2001). Usually, two types of subscription contracts are applied in the mobile service market (Usero-Sánchez & Asimakopoulos, 2012). The first, so-called 'free contracts' without any engagement, comprise monthly pay for consumed services. The second central concept is the so-called 'long-term contract', in which customers engage in a 24- or 48-month contractual relationship with the service provider. The long-term contractual subscription is also called a 'lock-in contract', given the period of time for which customers are engaged with a specific service provider (Richards, 2015). Moreover, when a subscriber wishes to withdraw from the service during the subscription period, the mobile services provider usually requires the return of the subsidized mobile device as a penalty (Kim et al., 2007). The dichotomy between free and long-term contracts raises questions concerning the effect of these contractual engagements on customer inertia and continuance intention. It has been suggested that customers with contractual subscriptions are more likely to perceive that they are "locked in" to their service

providers, which biases them toward the *status quo* (Valletti & Cave, 1998; Gerpott et al., 2001; Richards, 2015). We therefore hypothesize the following:

H8: Contractual subscription strengthens the relationship between customer inertia and continuance intention.

RESEARCH METHOD

Data collection

A web-based survey was conducted to collect data from French users of mobile services. A link to participate was sent to over 3,500 users. To advertise the survey webpage, we obtained help from a firm that specializes in mobile technology. The manager of this firm agreed to post a description of the project and the link to the survey webpage on the company's website and on its Facebook page. He also sent this information to ten collaborating firms located in various regions of France that also agreed to post it on their websites. To avoid bias, no incentive was offered to respondents. The questionnaire was initially tested on ten mobile service users randomly selected in a shopping mall. After finalizing its format and content, the questionnaire was posted on the survey website. A screening question at the beginning of the survey determined whether the respondent was using the mobile services of an operator at the time of the survey. The survey webpage was designed to allow only current users to proceed.

A total of 457 responses from current mobile service users were received (13% response rate). As indicated in Table 3, 44.64% are men and 55.36% are women. The majority of respondents are between 18 and 24 years of age (53.61%). Of the respondents, 65.42% are subscribers engaged in a contract (12 or 24 months), and 34.57% have no contractual subscription.

Table 3. Sample characteristics

Characteristics	**N=457**
Gender	
Male	204
Female	253
Age (years)	
18 – 24	245
25 – 45	135
46 – 65	69
> 66	8
Contractual subscription	
Yes	299
No	158

Operationalization of constructs

The model presented in Figure 1 includes five constructs that we measured by adapting valid and reliable scales used in IS research. The items are shown in the Appendix.

The respondents indicated their agreement with a set of statements using Likert-type scales that ranged from strongly disagree (1) to strongly agree (7). Continuance intention is measured as a reflective construct using three items adapted from the study of Deng et al. (2010). Inertia is conceptualized as a multidimensional formative construct composed of affective, behavioral, and cognitive sub-dimensions. Each sub-dimension is measured using three items adapted from Polites and Karahanna (2012). Habit was originally conceptualized by Polites and Karahanna (2012) as a multidimensional formative construct composed of awareness, controllability, and mental efficacy sub-dimensions. Awareness, or expressing non-conscious and automatic behaviors, is measured using four items adapted from Limayem and Hirt (2003). Controllability, expressing difficulty with controlling a behavior, is measured using two items adapted from Polites (2009). Drawing on the concept of habit as an automatic and uncontrolled response, a combination of these two behaviors qualifies such thinking as a mental habit (Verplanken et al., 2007). Therefore, in the present study, we do not consider mental efficacy as a separate sub-dimension of habit. Switching costs is conceptualized as a multidimensional formative construct composed of sunk and transition cost sub-dimensions, and each sub-dimension is measured using two items adapted from Moore's (2000) study. Satisfaction is measured as a reflective construct using two items adapted from Deng et al. (2010). Finally, contractual subscription is measured in relation to the existence of a contractual engagement between the investigated customers and their present mobile service providers (Penard, 2002). In the present investigation, we used contractual subscription as a moderator by splitting the sample into two subgroups: customers with and customers without a subscription.

DATA ANALYSIS AND RESULTS

Data were analyzed using a PLS approach following the general procedures suggested by Chin (1998). PLS is appropriate for our study because it can handle both reflective and formative constructs and test moderating effects (Ringle et al., 2012).

Measurement model

We initially assessed convergent validity, discriminant validity and reliability of the measurement scales for the first-order factors. The results show adequate convergent validity, because all items load onto their corresponding constructs with a value greater than 0.60 and have an average variance extracted (AVE) of greater than 0.50 for the constructs (Hair et al., 2010). The factor loadings are shown in Table 4.

Table 4. Psychometric properties of measurement scales

Scale item	Item mean	Item standard deviation	Item cross-loading	Item standard error	*t*-statistic
			CI		
CI1	4.52	2.06	0.84	0.01	29.63
CI2	4.43	1.90	0.86	0.01	41.26
CI3	4.69	1.84	0.86	0.01	33.44
			CBI		
CBI1	3.14	1.69	0.88	0.01	27.38
CBI2	3.12	1.61	0.90	0.01	25.49
CBI3	3.20	1.76	0.89	0.01	27.52
			BBI		
BBI1	3.53	1.85	0.81	0.01	40.61
BBI2	4.11	1.85	0.75	0.01	33.53
BBI3	3.97	1.92	0.84	0.01	45.26
			ABI		
ABI1	3.63	1.74	0.83	0.02	21.11
ABI2	2.99	1.65	0.82	0.02	26.77
ABI3	3.33	1.67	0.75	0.02	19.24
			HA		
HA1	5.28	1.58	0.91	0.01	25.78
HA2	5.12	1.61	0.88	0.01	22.62
HA3	5.08	1.69	0.78	0.02	16.68
HA4	5.30	1.55	0.92	0.01	32.86
			HC		
HC1	4.48	1.68	0.79	0.02	24.25
HC2	3.56	1.86	0.69	0.03	23.91
			TC		
TC1	3.53	1.60	0.88	0.11	1.43
TC2	2.58	1.37	0.73	0.05	17.20
			SC		
SC1	3.54	1.65	0.87	0.02	26.23
SC2	3.45	1.67	0.86	0.02	30.71
			ST		
ST1	4.58	1.60	0.79	0.02	28.65
ST2	4.51	1.71	0.77	0.02	28.11

Legend: CI = continuance intention, CBI = cognitive-based inertia, BBI = behavior-based inertia, ABI = affective-based inertia, HA = habit awareness, HC = habit controllability, TC = transition costs, SC = sunk costs, ST = satisfaction.

Table 5 shows good evidence of discriminant validity (AVE values on the diagonal are greater than the corresponding off-diagonal inter-construct correlations), and the composite reliability exceeds the recommended threshold of 0.70 (Chin, 1998).

Table 5. Discriminant validity of the constructs

Constructs	Alpha Cronbach	Composite reliability	Correlation of constructs[(a)]								
			CI	CBI	BBI	ABI	HA	HC	TC	SC	ST
CI	0.95	0.97	0.91								
CBI	0.93	0.96	0.07	0.91							
BBI	0.92	0.95	0.19	0.25	0.70						
ABI	0.83	0.90	0.07	0.18	0.23	0.88					
HA	0.97	0.97	0.27	0.06	0.11	0.05	0.87				
HC	0.76	0.89	0.32	0.11	0.22	0.16	0.25	0.75			
TC	0.72	0.82	0.02	0.05	0.10	0.11	0.00	0.05	0.81		
SC	0.90	0.95	0.08	0.09	0.27	0.19	0.05	0.16	0.12	0.85	
ST	0.83	0.92	0.45	0.04	0.13	0.05	0.20	0.29	0.02	0.09	0.86

Legend: (a) Diagonal elements are the square root values of the AVE; CI = continuance intention, CBI = cognitive-based inertia, BBI = behavior-based inertia, ABI = affective-based inertia, HA = habit awareness, HC = habit controllability, TC = transition costs, SC = sunk costs, ST = satisfaction.

Finally, as recommended by Podsakoff and Organ (1986), we checked for common method bias by conducting Harman's (1976) one-factor test on all items in an attempt to isolate the covariance due to artifactual reasons. Our results indicate an explained variance of 35.49 % (less than 50 %), indicating that one factor does not account for most of the variance, which provides support for the validity of our measures.

Structural model

Following the results of the first-order factor analysis, we used PLS to obtain the second-order factor indicators. The resulting latent variable scores were then used as formative measures of inertia, switching costs, and habit constructs (Diamantopoulos et al., 2008).

An important concern associated with formative constructs is the level of multicollinearity across their sub-dimensions (Diamantopoulos et al., 2008). We tested the formative constructs for multicollinearity by calculating the variance inflation factor (VIF) values. All of the values were well below the threshold of 3.30, indicating no serious multicollinearity issues (Diamantopoulos et al., 2008).

Another concern associated with formative constructs is the weight significance of the sub-dimensions (Petter et al., 2007). Removing formative sub-dimensions that are not significant should be theoretically justified rather than merely based on empirical results (Diamantopoulos et al., 2008). Because the cognitive-base inertia and transition cost sub-dimensions are part of inertia and switching costs, respectively, and have significant bivariate correlations (see Table 6), we retained them despite their nonsignificant weights (Diamantopoulos et al., 2008). Rerunning the model without the nonsignificant sub-dimensions yielded similar results to those of the model that included all of the sub-dimensions.

Table 6. Weights of formative constructs

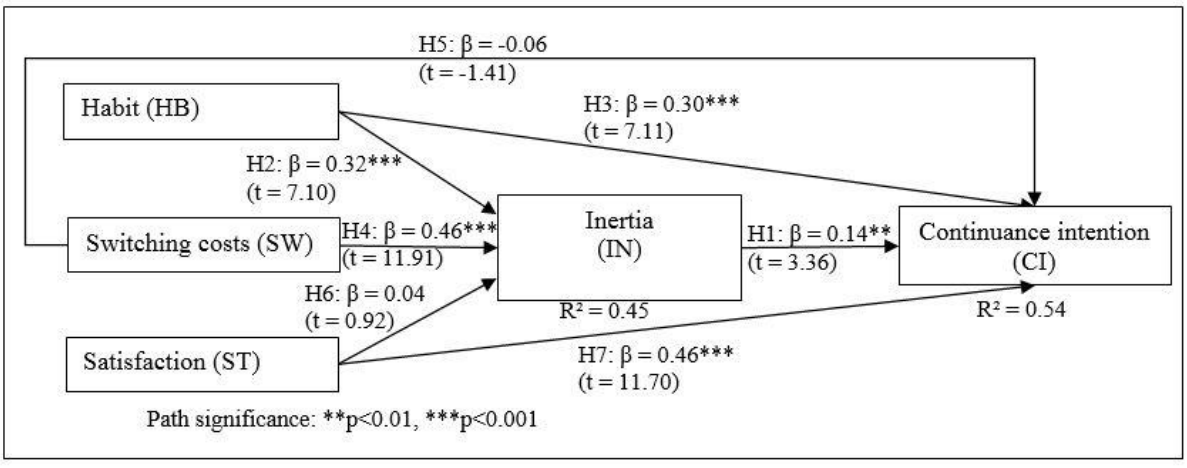
Latent variable (constructs)	**Manifest variables (sub-dimensions)**	**Weights (t-statistic)**	**Bivariate correlations (*t*-statistic)**
Inertia	Cognitive-based inertia	0.06 (0.38)	0.59*** (4.05)
	Behavior-based inertia	0.77*** (6.61)	0.95*** (24.64)
	Affective-based inertia	0.32* (2.22)	0.72*** (7.26)
Habit	Habit awareness	0.38* (2.54)	0.76*** (7.45)
	Habit controllability	0.75*** (6.35)	0.95*** (19.87)
Switching costs	Transition costs	0.33 (1.86)	0.62** (3.80)
	Sunk costs	0.84*** (7.10)	0.95*** (16.5)

Legend: *p<0.05, **p<0.01, ***p<0.001.

The results presented in Table 6 show that customers' inertia is related to their behavior-based (Weight = 0.77, $p < 0.001$) and affective-based (Weight = 0.32, $p < 0.05$) inertia resulting from their awareness (Weight = 0.38, $p < 0.05$) and controllability (Weight = 0.75, $p < 0.001$) habit with service providers and increased sunk costs (Weight = 0.84, $p < 0.001$).

Once all formative sub-dimensions were validated, our first step was to test the significance and strength of each hypothesized effect in our baseline model (without the moderating effect of contractual commitment). Significance testing for each path was performed using the bootstrap resampling procedure with 100 resamples. The results are shown in Figure 2.

Figure 2. Structural baseline model results



Most hypotheses (H1, H2, H3, H4, and H7, but not H5 or H6) are supported. Results suggest that inertia ($\beta = 0.14$, $p < 0.01$), habit ($\beta = 0.30$, $p < 0.001$), and satisfaction ($\beta = 0.46$, $p < 0.001$) have significant effects on continuance intention and jointly explain 54% of its variance (R^2_{CI}), whereas switching costs have no direct effect on behavioral intention of customers. The

mediation test using the bootstrapping approach (Hayes, 2009) reveals that switching costs (β = 0.24, confidence interval range 0.04 to 0.42 and does not contain 0) have indirect effects on continuance intention mediated by inertia, whereas habit and satisfaction are not mediated by inertia (see Table 7).

Table 7. Testing mediation using bootstrapping in PLS

Bootstrap results for indirect effects	**Indirect effect (β)**	**Standard error (SE)**	**LB (95%)**	**UB (95%)**
Habit ➔ Inertia ➔ Continuance intention	0.08	0.07	-0.05	0.21
Switching costs ➔ Inertia ➔ Continuance intention	0.24	0.08	0.04	0.42
Satisfaction ➔ Inertia ➔ Continuance intention	0.08	0.04	-0.02	0.17

Legend: LB = Lower bound of the confidence interval at the 95% level; UB = Upper bound of the confidence interval at the 95% level.

Results also show that satisfaction has no direct effect on inertia. Indeed, the effect of inertia on continuance intention only results from habit ($\beta = 0.32$, $p < 0.001$) and switching costs ($\beta = 0.46$, $p < 0.001$), which jointly explain 45% of its variance (R^2_{IN}). Removing satisfaction from the model reduces the explained variance (R^2_{CI}) from 54% to 40%, which explains the important role of satisfaction in increasing continuance intention.

The goodness of fit of the baseline model (GoF) is 0.56, which exceeds the cut-off value of 0.50 for high effect sizes of R^2, as suggested by Tenenhaus et al. (2005).

To test the robustness of the baseline model, we added gender and age as controls. The results shown in Table 8 (column 1) indicate that the relationships remain intact.

Table 8. Testing for contractual subscription as moderator

Relationships **column**	**Full group (Baseline model)** **1**	**Subgroup without subscription** **2**	**Subgroup with subscription** **3**	**Model difference (3 *vs* 2)** **4**
Inertia to continuance intention	0.11**	-0.12	0.27***	0.39*
Habit to inertia	0.32***	0.19**	0.40***	0.21
Habit to continuance intention	0.30***	0.39***	0.19***	0.20
Switching costs to inertia	0.46***	0.58***	0.38***	0.20
Satisfaction to inertia	0.04	0.17*	0.00	0.17
Satisfaction to continuance intention	0.46***	0.44***	0.47***	0.02
R^2_{IN}	0.45	0.55	0.43	
R^2_{CI}	0.54	0.49	0.56	
With controls				
Gender	-0.05	-0.09	-0.06	0.03
Age	0.04	-0.15*	0.12**	0.27**
R^2_{IN}	0.45	0.55	0.43	
R^2_{CI}	0.55	0.51	0.58	

Legend: R^2_{IN} = explained variance in inertia, R^2_{CI} = explained variance in continuance intention, *p<0.05, **p<0.01, ***p<0.001.

The second step was to allow for contractual subscription as moderator (H8) by splitting the global sample into two subgroups: customers with subscription and those without subscription. A model difference test was performed using multi-group t-test analysis. The results are shown in Table 8 (columns 2 through 4).

Table 8 also shows that within the subgroup with subscription, inertia, habit and satisfaction exerted significant effects and explained a significant amount of variance in continuance intention (R^2_{CI} = 0.56, F = 125.61, p < 0.001). The incorporation of age as a control variable exerted a significantly positive effect and explained a significant amount of additional variance in continuance intention ($\triangle R^2$ = 0.02, F = 7.50, p < 0.001) (Carte & Russell, 2003). Within the subgroup without subscription, habit and satisfaction but not inertia exerted significant effects and explained a significant amount of variance in continuance intention (R^2_{CI} = 0.49, F = 48.47, p < 0.001). The incorporation of age as a control variable showed a significantly negative effect and explained a significant amount of additional variance in continuance intention ($\triangle R^2$ = 0.02, F = 3.32, p < 0.05). The difference between the two subgroups is significant for inertia (D = 0.39, p < 0.05) and age (D = 0.27, p < 0.01), which provides support for hypothesis H8.

DISCUSSION

In the present section, we discuss some interesting findings of our research; in particular, we compare them with earlier IS research results. *First*, the findings highlight the direct positive effect of inertia on customer continuance intention concerning mobile service providers. As the

level of inertia increases, customers engage in persistent use of current services. This finding supports previous IS research (Kim & Gupta, 2012; Zhou, 2014a) that demonstrates the role of inertia as a manifestation of *status quo bias* by increasing customers' desire to maintain relationships with their service providers. Furthermore, our study shows that high perceptions of switching costs (*i.e.*, sunk and transition costs) in conjunction with the current service habit lead to increased inertia, which confirms previous IS research (Polites and Karahanna, 2012).

Second, habit has a direct positive effect on inertia and continuance intention. Concerning the direct effect of habit on inertia, customers become familiar with their mobile service providers over time, which biases them toward the *status quo*. Our finding is similar to previous research on mobile services (Ng & Kwahk, 2010) that found that the level of familiarity increases with the length of experience with mobile services, which leads customers to continue and maintain the *status quo*. Concerning the direct effect of habit on continuance intention, our study supports previous research on mobile services and provides evidence for the role played by habit in increasing continuance intention (Kim, 2012).

Third, our study highlights that switching costs have an indirect positive effect on continuance intention through inertia only; there is no direct effect. Higher switching costs act to bind customers psychologically to their current services. This finding supports previous research (Kim, Gupta, 2012) that found that switching costs increase bias toward the *status quo* and lead customers to be locked in with their current services. Concerning the effect of switching costs on continuance intention, there are contradictory findings in the literature. Some research (Kim et al., 2013; Setterstrom et al., 2013; Zhou, 2014a) found that switching costs play the role of switching barriers, whereas others (Ng & Kwahk, 2010) found no effect of switching costs on continuance intention. Our study adds to this debate, suggesting that the effect of switching costs on continuance intention is only mediated by inertia.

Fourth, our study shows that satisfaction is not directly related to inertia but has a direct effect on continuance intention. This finding supports previous research (Ng & Kwahk, 2010; Kim & Gupta, 2012). According to Bawa (1990), customers might not develop any "emotional attachment" to service providers, but when they are satisfied with mobile services, they naturally continue using them.

Finally, our findings show that the effect of inertia on continuance intention is moderated by contractual subscription. Customers who are under contractual subscription are more likely to continue with their mobile service providers than are those without such a subscription. This finding supports previous research suggesting that customers with a contractual subscription are more likely to perceive that they are "locked in" to their service providers, which biases them toward the *status quo* (Valletti & Cave, 1998; Gerpott et al., 2001; Richards, 2015).

Theoretical implications

Our study offers interesting implications for theory. *First*, it introduces the role of inertia to understand continuance intention for mobile services better. Most previous research on mobile services used the ECM to predict continuance intentions (Nabavi et al., 2016). However, the ECM is appropriate to predict continuance intention concerning a mobile technology in which

customers interact with the technology without consuming any service but is not appropriate to predict the intention to continue using mobile services provided by an operator (Kim et al., 2013). Few empirical IS studies discuss the effect of inertia on continuance intention concerning mobile services (Ng & Kwahk, 2010; Zhou, 2014a). Our study adds to these studies by highlighting the role of inertia to understand better the behavioral intentions of customers.

S*econd*, the literature lacks theoretical foundations that explain customer continuance intention from a *status quo bias* perspective (Kim & Gupta, 2012). Our study provides a contribution to the literature on continuance attention in general and to the mobile service literature in particular. Compared with other studies on continuance intention that used a *status quo bias* perspective (Ng & Kwahk, 2010; Kim & Gupta, 2012; Zhou, 2014a), our study indicates that customers intend to continue with their mobile service providers because they are biased toward the *status quo* due to inertia related to their habit with mobile services and perceived switching costs. This observation emphasizes the role of inertia to explain the bias resulting from conscious and subconscious choices whereby customers consider habit and the costs of switching from the *status quo* to new mobile service providers. The mediating role of inertia for switching costs also highlights the importance of inertia in increasing continuance intention concerning a mobile service provider. Our study shows a second reason why customers intend to continue: they are satisfied with their mobile services.

Third, our study shows the moderating role of contractual subscription in increasing the effect of customers' inertia on their continuance intention. This elaboration is an important contribution to the mobile service literature because empirical research on contractual subscription has received little intention in the IS literature (Valletti & Cave, 1998; Gerpott et al., 2001; Richards, 2015).

Finally, our study provides an important contribution to mobile service research by proposing a parsimonious model based on the *status quo bias* perspective. The overall fit of the model is very satisfactory, because the goodness-of-fit (GoF) exceeds the cut-off value for high effect sizes of R^2 and the explained variance (R^2) in continuance intention exceeds 50% (Tenenhaus et al, 2005). Our model can easily be extended in future research on mobile services and other markets.

Practical implications

Our findings offer mobile service providers useful insights concerning the intention of their customers to continue to use their services. Customers might do so for different reasons: because they develop a habit with their services, because they are satisfied with their services, and because they are contractually and psychologically committed (due to inertia). Inertia binds the customers to mobile service providers (due to habit and switching costs), and contractual subscription reinforces the effect of inertia. Mobile service providers can use several strategies to increase the inertia of their customers.

For customers without a contractual subscription, providers might want to increase switching costs by providing customized services based on the analysis of individual requirements (Zhou, 2014a). Because habit plays an important double role in affecting inertia and continuance

intention, providers should enable their customers to become familiar with their services (Ng & Kwahk, 2010). Because social and network influence exerts pressure on customers' habit to maintain current services, service providers should employ social networks to increase the awareness and visibility of their services (Lu et al., 2005). Furthermore, providers can also offer attractive contracts with low prices during a certain period and by grouping mobile services with other associated services (e.g., landlines, DSL and cable modems), which would increase switching costs over time (Khedhaouria & Beldi, 2014).

For customers with a contractual subscription, providers can propose loyalty programs in which frequent customers accumulate benefits that would be lost if customers switched to other service providers (Gerpott et al., 2001). Another example addresses penalties incurred by customers if they attempt to end a service contract prior to its expiration (Fuentelsaz et al., 2012).

In short, mobile service providers can enhance their competitive position by creating a "*win-win*" situation in which their customers take advantage of various promotional actions and in which the provider benefits from a "*locked in*" situation after some time.

Limitations of the study

The *first* limitation of our study is related to the antecedents of continuance intention. Our model might be too parsimonious and should be extended by adding and controlling for motivational factors such as trust (Zhou, 2013), loyalty (Gerpott et al., 2001) and social and network influence (Lu et al., 2005). These factors have also been shown to be related to inertia in the literature (Wu, 2011; Kim & Gupta, 2012).

Second, our focus has been on inertia and contractual commitment. Further research is needed to investigate psychological contracts (Pavlou & Gefen, 2005) to understand the customer's perceptual beliefs about the provider's contractual obligations with respect to payment policy, conditions of sale and conformity of services.

Third, the skewness of the distribution of respondents' age categories can lead to bias. Given that the majority of respondents are between 18 and 24 years of age, our results might not be applicable to other demographic groups. Although studies point to a "*young age effect*" in the French population concerning the usage of mobile services (Khedhaouria & Beldi, 2014), their perceptions might nevertheless be different from those of older customers. Furthermore, the exclusive use of the online channel to access and answer the questionnaire most likely introduced a bias toward younger respondents.

Fourth, the attractiveness of the alternative plays an obvious role in the decision to continue a service. In the present study, we have no measures of how attractive the competitors are. Follow-up studies should add this element to enhance *status quo bias* modeling (Kim & Gupta, 2012).

Fifth, a data collection instrument that uses self-reported measures can lead to bias, particularly when data are collected at the same point in time. To overcome this issue, future research should collate different measures spaced over time or use separate primary and secondary observations (Podsakoff & Organ, 1986).

Finally, the overall fit of the model is very satisfactory, but some constructs were measured with two items, which might diminish their reliability (Hair et al., 2010). Further research is needed to improve our model specification by using multiple items to measure our constructs.

CONCLUSION

By examining the effects of habit, switching costs, and satisfaction on customer inertia, we extend the existing IS literature using a *status quo bias* perspective in which inertia is related to customer continuance intention and contractual subscription moderates this relationship. Habit appears to influence continuance intention both directly and through inertia. Satisfaction does not appear to influence inertia, but it has a direct effect on continuance intention. Our results highlight the importance of including both inertia and contractual subscription when examining customer continuance intention; the link between inertia and continuous intention becomes stronger in the case of an actual contractual subscription. The entire model is derived from various existing IS studies. At the same time, it is parsimonious, and its results are plausible and easy to interpret.

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Table 8. Appendix: List of constructs and items

Constructs	**Items**
Continuance (CI)	CI1. I won't change my current mobile operator.
	CI2. I will continue with my current mobile operator.
	CI3. I intend to continue using the services of my current mobile operator.
Inertia (INERT)	
Cognitive-based inertia (CBI)	CBI1. I persist using my current mobile operator even if I know it is not the best offer of quality and price.
	CBI2. I persist using my current mobile operator even if I know that it is not the operator that offers me more advantages.
	CBI3. I persist using my current mobile operator even if I know that it is not the operator that provides me with more savings.
Behavior-based inertia (BBI)	BBI1. I persist using my current mobile operator simply because it is what I have always used.
	BBI2. I persist using my current mobile operator simply because it is part of my normal routine.
	BBI3. I persist using my current mobile operator simply because I have used it so regularly in the past.
Affective-based inertia (ABI)	ABI1. I persist using my current mobile operator because it would be stressful to change.
	ABI2. I persist using my current mobile operator because I'm afraid to change.
	ABI3. I persist using my current mobile operator because I I'm afraid to loss service advantages.
Habit (HB)	
Habit awareness (HA)	HA1. Using my current mobile operator has become regular to me.
	HA2. Using my current mobile operator has become spontaneous to me.
	HA3. Using my current mobile operator has become necessary to me.
	HA4. Using my current mobile operator has become habitual to me.
Habit controllability (HC)	HC1. I find it difficult to overrule my impulse to use my current mobile operator.
	HC2. I find it difficult to overcome my tendency to use the services of my current mobile operator.
Switching costs (SW)	
Transition costs (TC)	TC1. To develop a relationship of trust with another mobile operator would not take much time. (reverse coded item)
	TC2. To learn how to use the services of a new mobile operator would be easy for me. (reverse coded item)
Sunk costs (SC)	SC1. I have already invested a lot of time for developing a relationship of trust with my current mobile operator.
	SC2. I have already invested a lot of time in learning how to use the services of my current mobile operator.
Satisfaction (ST)	ST1. I'm satisfied with the quality of services that my mobile operator offers to me.
	ST2. Overall I am satisfied with my mobile operator.
Contractual subscription (CE)	My contractual engagement duration with my current mobile provider is (*No engagement, 12 months' engagement, 24 months' engagement*)