Mobile shopping cart abandonment: The roles of conflicts, ambivalence, and hesitation

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ARTICLE INFO

ABSTRACT

Though several industry reports have suggested that the rate of shopping cart abandonment is high in the mobile channel, the reasons for such abandonment remain relatively unexplored. Drawing on the cognition-affect-behavior (CAB) paradigm, this study aims to provide a conceptual framework explaining why consumers hesitate to use mobile channels for shopping and thus abandon their mobile shopping carts. Results from two studies show that mobile shopping cart abandonment is positively influenced by emotional ambivalence, a result of consumers' conflicting thoughts. More specifically, emotional ambivalence amplifies consumers' hesitation at the checkout stage, leading to cart abandonment. However, if hesitant consumers are satisfied with the choice process during shopping, they are less likely to give up their mobile shopping carts. Based on the findings, this mobile channel study provides practical and theoretical implications for marketers and e-cart abandonment researchers, respectively.

1. Introduction

Mobile shopping, which refers to the purchase of goods or services from mobile devices such as smartphones and tablets via a wireless network (Wu & Hisa, 2004), has become very popular among online shoppers. It currently accounts for one third of the US e-commerce market, and it is estimated to grow up to 300%, faster than traditional e-commerce (Kumar, 2016). Its market importance and financial potential have prompted calls for knowledge and theories that can help us better understand the mobile consumer (e.g., Shankar, Venkatesh, Hofacker, & Naik, 2010). One vital aspect of mobile shopping that interests both marketers and academics is mobile shopping cart abandonment behavior. We define mobile shopping cart abandonment as the behavioral outcome of leaving items in a mobile shopping cart without completing a purchase session. Industry reports have indicated that the shopping cart abandonment rate in the mobile channel is much higher than in the desktop based online channel (Kibo, 2016), resulting in high economic losses. The high abandonment rate also mirrors increased costs for multi-channel shoppers. Putting items in mobile shopping carts without checking out and then switching to desktop-based channels costs extra time and effort. This offsets the advantages of a mobile purchase.

Extant research has identified important factors for shopping cart abandonment in the *online* context ("e-cart abandonment"). Financial and psychological risks (Cho, Kang, & Cheon, 2006; Rajamma, Paswan, & Hossain, 2009), and concerns about privacy intrusion and security breaches (Egeln & Joseph, 2012; Kukar-Kinney & Close, 2010) are some of the risks involved in online shopping cart abandonment. Perceived inconvenience has also been identified as a factor (Rajamma et al., 2009). Some consumers use e-carts as a tool for organization and price comparison without actually intending to purchase (Close & Kukar-Kinney, 2010; Kukar-Kinney & Close, 2010). Although online shopping cart abandonment has been studied (see Table 1 for a summary of past studies), questions regarding why and how mobile shoppers abandon their *mobile shopping carts* remain relatively unexplored. The causes of *mobile* shopping cart abandonment may not be the same as those that apply in the online context because mobile purchasing has unique limitations and merits. For example, the small screen makes the device light and portable, but service providers may limit information search flexibility (Ghose, Goldfarb, & Han, 2012). Although location identifiers provide recommendations based on consumers' locations, they arguably raise security and privacy concerns. The "double-edged sword" features of mobile devices entice prospective buyers to use the channel, but discourage them from completing transactions, resulting in high cart abandonment rates.

Thus, we aim to provide a theoretical framework upon which scholars can build, and offer practical implications to help managers understand mobile shopping cart abandonment. This study has the

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Table 1
Summary of studies about online shopping cart abandonment.

Authors (year)	Data source	Method	Antecedents	Outcome variable
Cho et al. (2006)	220 US based college students	Online survey	(a) Consumer characteristics, (b) contextual factors, (c) perceived uncertainty factors, (d) medium/channel innovation factors	(a) Online shopping hesitation, (b) shopping cart abandonment, (c) hesitation at the final payment stage
Close and Kukar-Kinney (2010)	–	–	(a) Concern over cost (+), (b) entertainment use of e-cart (+), (c) organizational use of e-cart (+),	Online shopping cart abandonment
Egeln and Joseph (2012)	133 US based university students	Survey	(d) e-Tailing perceived risk (+): financial and psychological risk	Online shopping cart abandonment
Kukar-Kinney and Close (2010)	255 respondents from a US based consumer panel	Online survey	(a) Entertainment value (+), (b) use of cart as research and organizational tool (+), (c) concern about costs (+), (d) privacy/security concerns (+), (e) wait for sales (+)	Online shopping cart abandonment
Moore and Mathews (2008)	Not provided	Qualitative: "third person" approach, questionnaire, interview,	Perceived performance risk (+)	Online shopping cart abandonment syndrome
Oliver and Shor (2003)	206 participants from online consumer panel	Online experiment	Perceived inequality	Hypothetical purchase (non)completion question as the proxy of online shopping cart abandonment
Rajamma et al. (2009)	707 US based undergraduate students	Survey	(a) Perceived transaction inconvenience (+), (b) perceived risk (+), (c) perceived waiting time (+)	Online shopping cart abandonment
Xu and Huang (2015)	210 online shoppers in China	Online survey	(a) Organization and research of products within the cart (+), (b) comparisons with external websites (+), (c) payment intention (−)	Online shopping cart abandonment

following objectives. First, drawing from the cognition-affect-behavior (CAB) paradigm, this study proposes a framework that incorporates the concepts of cognitive conflicts and emotional ambivalence to elaborate the mental flow underlying mobile shopping cart abandonment. Second, this study extends Cho et al. (2006) by distinguishing online shopping hesitation and cart abandonment, and examines the role of hesitation at checkout in the ambivalence-abandonment relationship. Third, in consideration of Swant's (2016) contention that consumers seem to be dissatisfied with the process of product selection on the mobile channel, we propose that choice-process satisfaction acts as a moderator within the framework.

2. Theoretical background

The cognition-affect-behavior paradigm describes the behavior formation process in which beliefs or thoughts determine affective responses as either favorable or unfavorable, thus forming behavioral intentions. The framework is effective in explaining consumer behavior, particularly in regard to individuals with high involvement. In this study, this paradigm is used as a basis to delineate mobile shopping cart abandonment since we aim to focus on mobile shopping abandonment behaviors of buyers, not browsers who have no intention of completing a purchase.

Priester and Petty (2001) postulated that objective assessment occurs prior to affect-oriented ambivalence and subcategorized it into *intrapersonal* and *interpersonal* conflicts. Intrapersonal conflicts refer to the extent of one's own positive and negative reactions to an object, while interpersonal conflicts describe the extent of disagreement between oneself and significant others. Based on this, we propose two *intrapersonal* conflicts: attribute conflicts regarding mobile shopping, and self-efficacy. Mobile shoppers may possess both positive and negative thoughts about mobile channels (attribute conflicts). Some consumers see themselves as incapable of handling the process, but have to go through it for a certain purpose such as transferring money via a mobile device (self-efficacy). *Interpersonal* conflicts are proposed as a third cognitive conflict because mobile shoppers may perceive conflicts between their own attitudes toward mobile shopping and those of reference groups.

Some researchers (e.g., Jonas, Broemer, & Diehl, 2000; Priester & Petty, 2001; Thompson, Zanna, & Griffin, 1995) have argued that the concept of attitudes is complex and vague, and thus a univalent evaluation cannot explain its full complexity or reflect the true mental state of individuals. As such, they have proposed the concept of ambivalence which describes the occurrence of incompatible emotions or cognitions. The concept of ambivalence has been applied in important research topics such as recall and cognition (Ursavas & Hesapci-Sanaktekin, 2013), and green marketing (Chang, 2011). As this study adopts the CAB paradigm to explain the mental process of mobile shopping cart abandonment, we use the term "*emotional ambivalence*" to describe the mixed feelings toward mobile shopping induced by cognitive conflicts.

Fig. 1 illustrates the proposed framework in which the three cognitive conflicts explain why emotional ambivalence emerges and, in turn, affects mobile shopping behavior. In addition, hesitation at checkout is included as a mediator between emotional ambivalence and mobile shopping cart abandonment. Finally, choice-process satisfaction is proposed to negatively moderate the relationship between hesitation at checkout and abandonment.

3. Hypothesis development

3.1. Cognitive conflicts and emotional ambivalence

There are many reasons why consumers engage in mobile shopping. Convenience and accessibility are the main determinants of mobile shopping satisfaction (Holmes, Byrne, & Rowley, 2014), and mobility, efficiency and enjoyment also encourage consumers to make purchases