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The effects of product involvement and impulse buying on purchase intentions in mobile text advertising

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ABSTRACT

While research in mobile advertising is abundant, limited attention has been paid to date to how consumers respond to mobile advertisements for different product categories and in which way impulsivity affects intentions to purchase. In this paper, we study the dimensionality of the product involvement construct and its effects on consumers' purchase intentions via a simulated field experiment ($N = 736$). We show that the cognitive dimension of product involvement and impulsiveness significantly affect purchase intentions. We also present that the relationship between product involvement and purchase intention is moderated by the consumers' impulse buying personality traits. These findings progress the current state-of-the-art in mobile advertising research, while also having significant practical consequences for the design of effective mobile SMS advertising campaigns.

1. Introduction

Despite the considerable attention paid to mobile text advertising, research on the identification of critical factors that determine its success has been limited (Vatanparast and Butt 2010). This study examines the role of *product involvement*, a construct that has received extensive research attention in the study of traditional marketing media, in the context of SMS advertising. In addition, the study examines the role of *impulse buying tendency* as a potential moderator of the effects of involvement.

Product involvement refers to the perceived personal relevance and importance consumers attach to different product categories (Greenwald and Leavitt 1984, Krugman 1965, Mitchell 1979, Petty and Cacioppo 1981). Mitchell (1979, p. 194) defines product involvement as "an individual level, internal state variable whose motivational properties are evoked by a particular stimulus or situation". As a motivational factor, high involvement enhances information search and processing and promotes elaborate decision-making (e.g. Fazio 1990, Petty and Cacioppo 1986, Zaichkowsky 1985). The effects of involvement have been extensively studied in the context of advertising and consumer research. Several studies demonstrate that involvement significantly affects consumers' responses to advertisements and the formation of their subsequent product attitudes and purchase intentions (e.g. Petty et al. 1983). High levels of involvement lead to deeper and more extensive processing of advertising message content and render a message effective when the arguments contained in it are strong. In the context of e-commerce and internet advertising, findings indicate that highly involved consumers tend to have stronger interaction intentions with websites (Yoo and Stout 2001) and are more likely to click on banner ads (Cho 2003).

Product involvement has also been associated with the cognitive vs. affective properties of the decision making process. The well-established Foote, Cone and Belding (FCB) Grid (Vaughn 1986, Ratchford 1987), describes how consumers approach the buying process for different product categories and distinguishes among four main product groups along two dimensions: involvement (high vs. low) and decision process (cognitive vs. affective). According to this framework, consumers discern products on the basis of their involvement with them and on whether rational or emotional factors play the most prominent role in choice processes and the formation of purchase intentions (for a similar conceptualization, see Rossiter and Percy (1987)).

A number of researchers take this idea a step further and draw a distinction between cognitive and affective involvement. Kim and Lord (1991) have shown that the FCB Grid's think, feel and involvement measures load on two factors, namely the "think" factor (high or low cognitive involvement) and the "feel" factor (high or

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low affective involvement). Park and Young (1986) distinguish between cognitive involvement (induced by utilitarian or cognitive motives) and affective involvement (derived from value-expressive or affective motives). Similarly, Zaichkowsky (1994) defines cognitive involvement as personal relevance based on the functional, utilitarian performance of the products and affective involvement as personal relevance based on feelings, emotions and moods evoked. Thus, cognitive involvement encompasses reasoning and factual information, whereas, affective involvement is associated with emotion and mood. This conceptualization is adopted in the present research.

Buck et al. (2004, p. 647) have put forward the ARI solid, a model depicting the relationship between affect, reason and involvement. This model aims to conceptualize and measure how attitude objects (e.g. products and brands) and messages (advertisements) are cognitively and affectively processed and provide a three-dimensional representation of the depth of consumers' thoughts and feelings. Following Zaichkowsky's (1985) distinction between product, purchase and advertising involvement, this model also refers to either a temporary state affected by the situation (e.g. purchase involvement), an enduring tendency of a person to respond carried across situations (e.g. enduring product involvement) or the tendency of an object or message to generate rational and emotional responses (e.g. advertising message involvement). These authors further argue that "emotional involvement is based upon holistic syncretic cognition, while rational involvement is based upon linear and sequential analytic cognition" (p. 647).

A number of studies have examined the effects of cognitive and affective product involvement in consumer behavior and advertising. For instance, Putrevu and Lord (1994) compare the effectiveness of comparative and noncomparative advertising for products characterized by different levels of cognitive and affective involvement. They have found that comparative advertisements induce more positive brand attitudes for products which elicit cognitive and affective motivations simultaneously. In the context of online shopping, Smith et al. (2013) demonstrate a direct relationship between cognitive involvement and perceived ease of use and usefulness of online shopping.

Although the cognitive – affective involvement dichotomy is established in traditional advertising, it has never been tested and validated in the context of mobile advertising and, especially, in the case of mobile text (SMS) advertisements, where the inherent limitations and unique characteristics of the advertising channel may render traditional advertising knowledge less relevant or valid. The majority of mobile advertising (m-advertising) studies focus on users' perceptions toward permission-based marketing, content, wireless service provider (WSP) control, trust, ad usefulness and delivery of the message (Carroll et al. 2007, Merisavo et al. 2007, Muk 2007).

In terms of product related effects on consumers' mindsets, Kannan et al. (2001) proposed that mobile advertising is likely to significantly increase the frequency of impulse purchases, especially in low-value or low-involvement product categories, due to the instant gratification and immediate need fulfillment enabled by the medium. Varnali et al. (2012) recently demonstrated that message relevance improves mobile response rates and facilitates the viral impact. However, subsequent research has failed to provide empirical evidence on how product involvement and impulse buying tendency interact to affect purchase intentions in response to mobile advertising.

In this study, we seek to examine the effects of cognitive and affective product involvement on purchase intentions. Our focus here is especially on SMS advertising, excluding other forms and types of mobile advertising, like mobile media services (MMS) or mobile QR codes. Based on Richards and Curran (2002, p. 74), we define mobile text advertising as "*a paid form of location-sensitive personal Short Message Service (SMS) communication from an identifiable source, designed to persuade the receiver to take some action, either in real time or in the future.*" In the next section, we review the literature and arrive at a number of hypotheses. We then present the method for testing our theoretical propositions, before proceeding to the presentation of the results of a large-scale randomized field experiment. The contribution of our work to m-advertising theory and practice are presented next, before concluding with a discussion of future research opportunities.

2. Literature review and research hypotheses

Mobile text advertising has a number of distinctive properties that differentiate its reach and richness from other advertising media. Although it is generally agreed that mobile advertising provides consumers with personalized information based on their location, interests and time of day (Scharl et al. 2005), at the same time there is an inherent limitation of short text messages to convey sufficient amounts of information for advertised products; it might be argued that this limitation might have an adverse impact on purchase intentions, especially for high cognitive involvement products. In a recent study, Bart et al. (2012) found that mobile display advertising campaigns are effective for higher (vs. lower) involvement products, and for products that are seen as more utilitarian (vs. more hedonic). However, their study focused on display advertising which is highly different from text advertising in terms of content, interaction and visual attention. In contrast to display advertising, text advertising has limited capacity to deliver impactful meanings. In support of this argument, Xu et al. (2009) showed that multimedia location-based advertising (LBA) messages lead to more favorable attitudes, increase the intention to use the LBA application, and have more impact on purchase intention than text-based messages. A large body of empirical evidence indicates that message content is crucial in the context of persuasion under high and low involvement conditions.

The elaboration likelihood model (Petty and Cacioppo 1981, 1986) and the conceptually similar heuristic-systematic model (Chaiken 1980) provide the prominent theoretical framework in the study of persuasion and attitude change. In these dual-process models, involvement is assigned a critical role as a factor determining message recipients' processing motivation. The models predict that when the recipients of a persuasive message are motivated (and able) to process its content, they engage in analytical processing and scrutinize its content (central route to persuasion, systematic processing). Under such conditions, post-message attitudes (and subsequent behavioral intentions) depend on the quality of message arguments: messages containing strong arguments induce more attitude change and are more effective compared to messages containing weak arguments. In contrast, when processing motivation (and/or ability) is low, persuasion occurs only through the peripheral route (or through heuristic processing). In such conditions, peripheral message cues (such as the expertise or the status of message source) or heuristics (such as message length) determine attitude change. In an early test of the elaboration likelihood model, Petty et al. (1983) assessed participants' product attitudes after they had them look at a magazine advertisement under conditions of either high or low product involvement. The advertisement contained either strong or weak arguments for the product (argument strength) and featured either prominent sports celebrities or average citizens as endorsers (source status, peripheral cue). The manipulation of argument quality had a greater impact on attitudes under high than low involvement, but the manipulation of product endorser had a greater impact under low than high involvement. Several studies

have since provided robust support for the predictions of these models and substantiate the important role of involvement in persuasion processes (for relevant reviews see Chen and Chaiken 1999, Petty and Wegener 1999).

A number of studies have more recently also confirmed and extended the predictions of these models in the context of interactive media (e.g. Park and Kim 2008, Wang et al. 2009, Yang et al. 2006). For instance, Shamdasani et al. (2001) examined the role of the reputation of a website and the role of the relevance between website content and product category in the effectiveness of banner ads. They found that effectiveness for high involvement products is mainly relevance-driven; reputation enhances persuasion only when the website's content is relevant to the advertised product category. In contrast, effectiveness for low involvement products is reputation-driven: when a site's reputation is well established, relevance does not influence persuasion.

Extending the notions of dual-process models of persuasion, cognitive resource allocation studies (Anand and Sternthal 1989, Keller and Block 1997, Meyers-Levy and Peracchio 1995) suggest that the impact of advertisements on brand attitudes may be sensitive to the relationship between the cognitive resources required to process the message and those made available for processing. Hence, messages become more effective when there is balance between required and available cognitive resources. For instance, Keller and Block (1997) have examined the role of color in advertising and have found that when consumers devote few resources to processing (low involvement), ads with some color outperform black-and-white ads. However, when viewers engage in more effortful ad processing, black-and-white ads or those that color highlight aspects highly relevant to ad claims are more persuasive (high involvement). Similarly, Liu and Shrum (2009) manipulated (brand) website interactivity and examined its effects on brand attitudes under different involvement conditions. They found that increased interactivity served as a peripheral cue and led to more positive attitudes under low-involvement conditions. Under high-involvement conditions, however, increased interactivity elicited more positive attitudes for experienced internet users but less positive attitudes for inexperienced users. The explanation for these findings offered by the authors is compatible with both the dual-process and cognitive resource allocation approach to persuasion. Highly involved consumers are motivated to allocate substantial cognitive resources to process a message and to evaluate relevant claims. Under such conditions, interactivity can play two contrasting roles. On the one hand, by allowing consumers to selectively focus on the most important information, a highly interactive website can reduce consumers' search costs and give them the opportunity to find and process product claims. On the other hand, for less experienced internet users, interactivity might become a distracting, or even frustrating factor. As consumers navigate through a highly interactive website, they need to manage the information flow and their attention can be diverted away from product-relevant information. This can impede effective processing of relevant product claims and undermine persuasion. Under such circumstances, the inhibiting effect of interactivity can render a more-interactive website less effective than a less-interactive website.

Although dual-process models of persuasion and cognitive resource allocation studies do not distinguish between cognitive and affective involvement their premises and findings are relevant to our study. Mobile text advertising can offer only limited product related information, due to SMS size limitation (160 characters). This information might be insufficient for effective persuasion for high involvement products resulting in an imbalance between required and available resources; it is possible that the cognitive resources consumers are willing to invest exceed those required by the task. In addition, mobile text advertising for high involvement products lacks interactivity features which might provide a means of enhancing cognitive resource allocation. This reasoning is likely to apply at least in the case of cognitive product involvement. Cognitive product involvement is induced by functional, utilitarian aspects of products and therefore drives consumers to seek relevant types of information when forming product attitudes and intentions. Mobile text advertising might be therefore a less effective medium for high cognitive involvement products.

Affective product involvement, on the other hand, is induced by emotional aspects of products; for high affective involvement products, affective cues and information play a prominent role. However, the ability of mobile text advertising to provide such cues is also limited. The medium does not convey images (e.g. of the product, its usage, its effects on users' feelings etc.), sounds or motion that might provide more appropriate means to communicate emotional information compared to plain text. It is therefore possible that mobile text advertising is also less effective for high affective involvement products. The following hypotheses are therefore tested:

H1a. Purchase intentions in response to mobile text advertising are higher for low cognitive involvement products.

H1b. Purchase intentions in response to mobile text advertising are higher for low affective involvement products.

At the early stages of mobile advertising, Kannan et al. (2001) argued for the positive impact of mobile advertising on the frequency of impulse purchases in low involvement product categories. This reasoning can be supported by two possible explanations: one related to product-specific impulse buying and a second related to location-specific impulse buying. Kollat and Willett (1969) have argued that impulse buying may occur in low-value and low-involvement product categories such as candies and magazines. Empirical evidence on the association of involvement with impulse buying is limited. Jones et al. (2003) have shown that involvement influences consumers' tendency to purchase products of a particular product category on impulse. They mark that "product-specific impulse buying tendency can be viewed as a manifestation of the general impulse buying tendency trait" (p. 507). In addition, Davis and Sajtos (2009) have found that the tendency to use impulsively SMS-services is a positive function of the general impulse buying tendency and, to a lesser degree, of product-involvement.

Second, impulse buying can be viewed as a function of the proximity to the place where the actual purchase will be made. Consumers are more likely to impulsively form a purchase intention when the implementation of this intention is easy and the gratification is secured and immediate. Perceiving, for instance, a retail store as more or less distant can affect a consumer's intention to buy an advertised product on impulse. In addition, as past online impulse buying research has shown (Wells et al. 2011) environmental cues directly influence the likelihood that a consumer will experience an urge to buy impulsively. Therefore, we argue that mobile location-based advertising can act as an environmental cue and affect the purchase behavior especially of those people who have a higher-than-average tendency to engage in impulse buying behavior. Related studies have shown that the recipients of such advertisements may experience a powerful and persistent urge to buy the product on the spot and do not overly reflect on the consequences of product purchase (Koski 2004). In this study, in order to control the effect of mobile location-based advertising, we treated perceived effort to buy the advertised product as a covariate.

Building on H1, we therefore expect that in the context of mobile text advertising, impulse buying interacts with product involvement and augments its effects on purchase intentions. We therefore expect that in the context of mobile text advertising:

H2a. The effect of cognitive product involvement on purchase intentions in response to mobile text advertising is moderated by consumers' impulse buying tendency.

H2b. The effect of affective product involvement on purchase intentions in response to mobile text advertising is moderated by consumers' impulse buying tendency.

Finally, advertising research has consistently shown the positive effects of *product category familiarity* on purchase intentions and it is likely that these effects hold true in the case of mobile advertising as well. Product category familiarity is defined as the number of product related experiences that have been accumulated by the consumer (Jacoby et al. 1986). In cases where familiarity has been accumulated through prior use, purchase intentions are expected to be higher since the presence of mentally stored information, as a result of experience and learning, possibly decreases information asymmetries and the risk of the buying decision. Research in marketing indicates that as familiarity increases, the time and cognitive effort required to reach a purchase decision decreases while automatic processing increases (Dahl et al. 2001). Mobile users who are less familiar with the advertised product category may not proceed to a direct (let alone impulse) purchase, but may instead choose to seek additional information prior to the actual purchase. The inability of text advertisements to convey rich and deep information about the advertised product may further exacerbate this problem in mobile text advertising. Hence, in this study, consumers' familiarity with the advertised product category is also treated as a covariate.

3. Method

3.1. Design, participants and procedure

A randomized simulated field experiment was conducted to test the research hypotheses. The experiment employed a 2 (cognitive involvement level: high vs. low) × 2 (affective involvement level: high vs. low) between subjects design. The independent variables were manipulated by means of selected product categories (see below). A total of 736 respondents (373 females, mean age = 31 - years) participated in the study. Respondents were contacted while exiting a central metro station in a metropolitan area and randomly assigned to one of the four experimental conditions. Each respondent was presented with an actual mobile phone presenting a text advertisement for one of the four experimental products (each product corresponding to one of the four experimental conditions; for examples, see Fig. 1). Respondents were asked to imagine that they had actually received this permission-based advertisement on their mobile phone upon their exit from the station. Following exposure to the advertisements, they were asked to respond to a number of questions. Computer-assisted personal interviewing (CAPI) was used to collect data. The entire procedure was self-paced and participants completed the task in approximately ten minutes. After completing the session, participants were thanked and debriefed.

3.2. Pre-tests

Two pre-tests with a different, albeit similar (to that of the main study) sample ($N = 120$) were conducted to develop the experimental material and to calibrate the contents of the text advertisements that were used in the main study.

3.2.1. Pre-test 1: product selection

To decide on four appropriate products representing the four experimental conditions, we first tested thirteen different product categories to select those most clearly fitting the high and low levels of cognitive and affective involvement. Product categories, such as soft drinks, deodorants, cold remedies, chocolate bars, vitamins, and potato chips, were selected from similar studies in the advertising and consumer behavior literature (Ratchford 1987, Danaher and Mullarkey 2003, Lepkowska-White et al. 2003). This pre-test allowed the identification of four appropriate products based on four criteria: (a) each product should represent a distinct combination of low and high levels of cognitive and affective involvement; (b) the products were relevant to the target population; (c) all products were relatively inexpensive to fit the profile of products typically advertised in mobile text messaging campaigns; and (d) all products were frequently purchased consumer non-durable items. Cognitive and affective involvement were assessed in the manner proposed by Putrevu and Lord (1994). Participants were asked to rate their involvement with the thirteen product categories (for the exact items used see Table 2). A soft drink (low in both cognitive and affective involvement), a non-prescription cold remedy (high cognitive involvement, low affective involvement), a chocolate bar (low cognitive involvement, high affective involvement), and an antiperspirant (high in cognitive and affective involvement) were selected as the experimental products (see Table 1).

3.2.2. Pre-test 2: product attributes advertised

The purpose of this pre-test was to control the effects of confounding variables due to information contained in the ads to be shown to subjects in the main experiment. Product attributes were initially picked through analyzing real advertisements in these product classes from several advertising media (for example, magazines and the web). These attributes were tested in terms of importance by means of a seven point semantic differential scale anchored by "not important to me/important to me". The same as in pre-test 1 sample of 120 participants evaluated each test attribute. All means exceeded the scale midpoint (4.08–6.78), confirming the relevance of the attributes to the target population. Finally, two professional advertising copy-writers contributed to the development of the experimental ads in order to increase external validity.

3.3. Measures and manipulations

Table 2 presents the items used for the assessment of participants' cognitive and affective involvement with the experimental product categories as well as those used for the measurement of impulse buying, familiarity with the product category and purchase intention. Respondents' familiarity with a product category was captured with one item ranging from "not at all familiar" to "extremely familiar". This scale was adopted from Darley and Smith (1995). Recent research (e.g. Bergkvist and Rossiter 2007) suggests that single-item scales are adequate when measuring singular constructs.

4. Reliability and manipulation checks

With the exception of affective involvement, the internal reliabilities of the constructs assessed with multiple items were above .70. Despite its low reliability, we have decided to keep the affective involvement measure since it is well established in the literature and the factorial structure of the relevant items followed the predicted pattern (see Table 2).

Fig. 1. The SMS advertisements used for the experiment (translated from the original Greek).

Table 1
Experimental conditions.

		Cognitive involvement	
		High	Low
Affective involvement	High	Antiperspirant	Chocolate bar
	Low	Cold remedy	Soft-drink

As can be seen in Table 3, mean cognitive and affective involvement scores for the four experimental product categories support their correct placement within the four possible combinations of low and high levels of cognitive and affective involvement. All between-product differences were statistically significant at $p < .001$, except from the difference between soda drink and chocolate bar which was significant at the $p < .05$ level. This findings support the effectiveness of the manipulation of the involvement constructs through the selected product categories.

Respondents' scores on the focal variables were submitted to a factors analysis (with varimax rotation). As can be seen in Table 4, factor loadings, were highly consistent with those observed by Kim and Lord (1991), and Putrevu and Lord (1994). That is, the cognitive involvement items all loaded on the first factor, and the affective involvement items loaded on the second. This supports the premise underlying this research that cognitive and affective product involvement are distinct constructs.

5. Hypotheses testing

To examine the hypothesized effect of cognitive (H1a) and affective (H1b) product involvement on purchase intentions, a two-way ANCOVA was conducted with location and product category familiarity as covariates. Cognitive involvement (CI) was found to significantly influence purchase intentions F (1, 730) = 48.12, $p < .001$, $\eta^2_p = .062$. Specifically, respondents were more likely to form the intention to buy the low cognitive involvement products ($M = 4.17$) than the high cognitive involvement products ($M = 3.08$). In contrast, affective product involvement was not found to exert a significant main effect on purchase intentions F (1, 730) = .005, $p = .95$, $\eta^2_p = .00$. Interestingly, however, the variable was found to interact with cognitive involvement to determine purchase intentions F (1,730) = 4.65, $p = .05$, $\eta^2_p = .031$. As can be seen in Fig. 2, in the case of high affective product involvement, purchase intentions did not differ significantly across the affective involvement levels ($M = 3.13$, $SD = 2.12$ vs. $M = 3.03$, $SD = 1.75$, for the low and high affective product involvement, respectively). In the case of low cognitive involvement, however, purchase intentions were significantly stronger in the case of high ($M = 4.40$, $SD = 1.84$) vs. low ($M = 3.95$, $SD = 1.94$) affective involvement, t (1, 366) = 2.25, $p = .025$. It is also true that as cognitive product involvement increases, affective cues play the most prominent role in the formation of purchase intentions and at the same time individuals do not want to think extensively or proceed to a product purchase based on quantifiable product attributes. Individuals bounded by the inherent limitation of the mobile texting service to convey sufficient amounts of information demonstrate a propensity to process information using mainly affect.

To examine the hypothesized moderating effect of impulse buying on the relationship between purchase intention and the two involvement variables (H2a and H2b), a median-split of impulse buying scores was used and respondents were divided into high

Table 2
Measures and reliabilities of focal constructs.

Constructs	Measurements	Cronbach's alpha
Cognitive involvement	Five 7-point semantic differential scales anchored by "Very important/unimportant decision," "Decision requires a lot of/little thought," "A lot/little to lose if you choose the wrong brand," "Decision is not/is mainly logical or objective," "Decision is/is not based mainly on functional facts" (Putrevu and Lord 1994)	.88
Affective involvement	Three 7-point semantic differential scales anchored by "Decision expresses/does not express one's personality," "Decision is based on a lot of/little feeling," "Decision is/is not based on looks, taste, touch, smell or sounds" (Putrevu and Lord 1994)	.55
Impulse buying	Four 7-point Likert scales (strongly agree/strongly disagree), "I often make unplanned purchases", "I like to purchase things on a whim", "I think twice before committing myself", "I always stick to my shopping list" (Donthu and Gilliland 1996)	.77
Familiarity with product category	One 7-point scale with end points labeled "not at all familiar" to "extremely familiar". In addition, subjects were asked to report how often they had bought the product in the last semester. (Darley and Smith 1995)	(N/A – single item)
Purchase intention	Three 7-point Likert scales (strongly agree/strongly disagree), "It is very likely that I will buy (brand)", "I will purchase (brand) the next time I need a (product)", "I will definitely try (brand)" (Putrevu and Lord 1994)	.93

Table 3
Product involvement means.

Products	Mean cognitive involvement	Mean affective involvement
Antiperspirant (code = 1)	4.27 (High)	4.79 (High)
Cold remedy (code = 2)	5.68 (High)	3.32 (Low)
Chocolate bar (code = 3)	3.04 (Low)	4.68 (High)
Soft drink (code = 4)	2.62 (Low)	4.38 (Low)
	Independent samples test for cognitive involvement (Sig.)	*Mean difference*
Difference between 1 & 3	$p < .001$	1.23
Difference between 2 & 3	$p < .001$	2.64
Difference between 1 & 4	$p < .001$	1.65
Difference between 2 & 4	$p < .001$	3.02
	Independent samples test for affective involvement (Sig.)	*Mean difference*
Difference between 1 & 2	$p < .001$	1.47
Difference between 1 & 4	$p < .05$	0.41
Difference between 2 & 3	$p < .001$	1.36
Difference between 3 & 4	$p < .05$	0.30

Table 4
Factor analysis and descriptive statistics.

Item	Cognitive involvement	Affective involvement	Impulse buying	Familiarity with product category	Purchase intention	*N*	Mean	SD
Importance	**.85**	−.01	.03	.09	−.04	736	3.77	2.37
Thought	**.87**	−.04	.08	−.03	−.09	736	3.39	2.27
Risk	**.84**	−.05	.01	.05	−.10	736	3.58	2.31
Objectivity	**.79**	.02	−.04	−.07	−.01	736	4.21	2.36
Functional Facts	**.72**	.09	−.11	−.08	−.01	736	4.54	2.16
Personality	.40	**.59**	−.04	.11	−.03	736	4.08	2.14
Feeling	.07	**.84**	.08	−.01	.07	736	3.46	2.18
Senses	−.31	**.67**	.01	.24	.19	736	5.33	2.15
I often make unplanned purchases	−.03	.13	**.78**	−.08	.10	736	4.49	2.26
I like to purchase things on a whim	.01	.08	**.82**	−.07	.12	736	3.98	2.30
I think twice before committing myself	.02	−.23	**.68**	.17	−.02	736	3.38	2.04
I always stick to my shopping list	−.05	.04	**.77**	.06	.05	736	4.21	2.12
7-point scale. "not at all familiar" to "extremely familiar"	.01	.18	.04	**.93**	.13	736	4.83	1.99
It is very likely that I will buy (brand)	−.06	.08	.09	.06	**.94**	736	3.57	2.07
I will purchase (brand) the next time I need a (product)	.01	.06	.13	.04	**.93**	736	3.43	2.06
I will definitely try (brand)	−.16	.07	.06	.06	**.91**	736	3.90	2.25
Age						736	31.33	12.08
Male						363		
Female						373		

Extraction method: principal component analysis; rotation method: varimax with Kaiser normalization. Rotation converged in 3 iterations.

and low impulse buying groups. First, a two-way ANCOVA was used to test the main and interactive effects of cognitive product involvement and impulse buying on purchase intentions, with location and product familiarity as covariates. The results of this analysis revealed that, in addition to the main effect of cognitive involvement (F (1,730) = 54.79, $p < .001$, $\eta_p^2 = .07$), impulse buying significantly affected purchase intentions (F (1,730) = 20.22, $p < .001$, $\eta_p^2 = .027$). Specifically, respondents with a high impulse buying tendency held stronger purchase intentions compared to their low impulse buying tendency counterparts ($M = 3.93$, $SD = 2.02$ vs. $M = 3.35$, $SD = 1.94$). However, no interaction effect emerged ($p > .05$) in this analysis (cognitive product involvement) × (impulse buying) and thus hypothesis H2a was not supported. To test hypothesis H2b, a similar two-way ANCOVA was conducted with affective product involvement and impulse buying as fixed factors, location and product familiarity as covariates and purchase intentions as the dependent variable. The main effect of affective product involvement on purchase intentions was not significant (F (1, 730) = .108, $p > .05$). However, a significant main effect of impulse buying on purchase intentions was found (F (1, 730) = 14.21, $p < .001$, $\eta_p^2 = .019$). Purchase intentions were higher when impulsivity was high ($M = 3.93$) than when it was low ($M = 3.35$). Furthermore, a significant interaction between impulse buying and affective involvement was observed (F (1,730) = 6.96, $p = .008$, $\eta_p^2 = .009$). As can be seen in Fig. 3, impulse buying is more likely in the case of low affective product involvement; as involvement increases, intention to buy on impulse decreases. Therefore, although higher impulse buying tendency generally increased purchase intentions, this effect was more pronounced in the case of the low affective involvement products.

6. Discussion

Our first set of hypotheses maintained that purchase intentions are less favorable when a mobile text advertisement features a high vs. a low involvement product category. The results of our study lend partial support to this hypothesis, as cognitive, but not affective, involvement was found to significantly affect intentions. This effect might be attributed to the nature of the medium and its inherent limitation to convey sufficient amounts of information to support high cognitive involvement decision making. It is possible that because short text ads cannot effectively communicate all the information required for high involvement purchases,

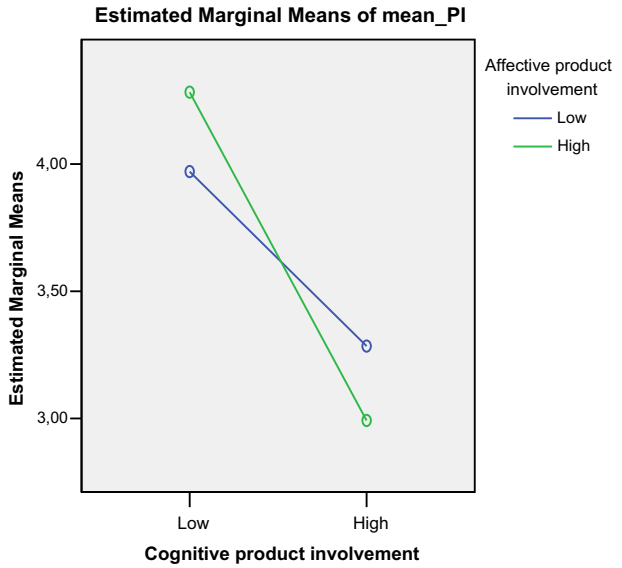

Fig. 2. The interaction effect of cognitive and affective product involvement on purchase intentions.

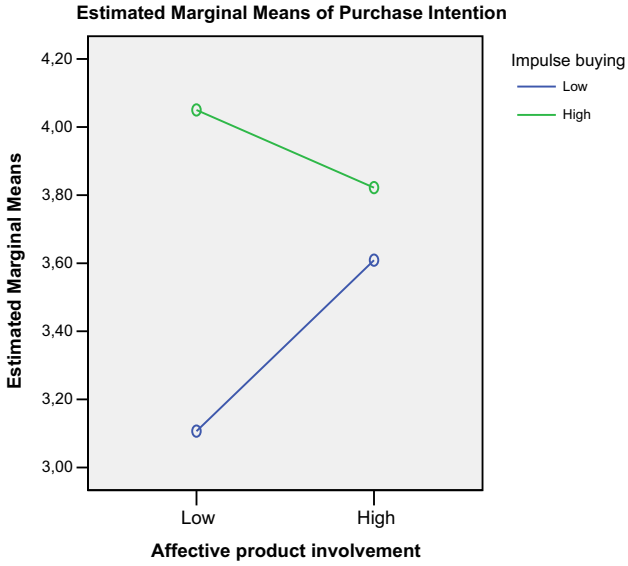

Fig. 3. The effect of impulse buying and affective product involvement on purchase intentions.

consumers generate more counterarguments in response to message claims. Park and Salvendy (2012) also suggest that advertising messages that need to convey large amounts of information to back argument quality may not fit to the mobile medium due to the limited content capacity of handheld devices.

In addition, affective product involvement was found to interact with cognitive involvement to determine purchase intentions. Rather than supporting a view of affect and cognition as independent constructs, these findings might point to an interdependent relationship between affect and cognition. If, in fact, affect and cognition operate simultaneous at different levels in different situations, in the case of mobile text advertising, consumers demonstrate a propensity to process mobile text ads based mainly on their affective systems. As already mentioned in the results section, affective cues probably play the most prominent role in the formation of purchase intentions. However, since high cognitive product involvement is associated with greater perceived risk, the recipient of a mobile ad is likely to seek more information in an attempt to better cope with the risk. This need for more information as input to decision making may, in turn, lead to purchase postponement, as SMS ads can only convey limited information.

In contrast, the second part of our first hypothesis, concerning the relationship between affective product involvement and purchase intentions, was not supported. In this experimental condition, specific product-related information is less important than attitudes; a single exposure to an advertising message via SMS could be inadequate to elicit a strong tendency to buy the product. In addition, a low involvement/affective product will mainly satisfy personal tastes. As a result, a text advertisement that fails to provide the relevant, expected type of appeal that combines text and rich-content would create expectancy disconfirmation, which may be observable in the form of negative or moderate purchase intentions.

Moving to hypothesis two, our findings show that the impulse buying tendency of individuals influences the degree to which a mobile user engages in a product purchase for low involvement products. Low involvement is associated with routine, habitual or impulsive behavior without extensive information processing. This is why products like candy bars and chewing gums are prominently displayed at the supermarket checkout aisles to trigger impulse buyers to buy what they might not have otherwise considered. Therefore, consumers with strong impulsive buying tendencies are more prone to buying low involvement, and especially hedonic/affective products. The findings of Dittmar et al. (1995) are in line with this notion. In their study, impulse buying was examined in relation to several product categories. They found that certain products, such as clothing, were stronger candidates for impulse buying compared to highly functional goods, such as furniture and car equipment, which were associated with low impulse buying tendency.

7. Contribution, limitations and further research

The results of the present study contribute to our understanding of mobile text advertising. The nature of SMS advertising entails certain restrictions for marketers. Our findings indicate that SMS advertising is not appropriate for all types of products, especially those that are associated with high levels of involvement. However, in the case of low involvement products, especially when targeted to high impulse buying consumers, SMS advertising can effectively increase purchase intentions.

Marketers can therefore better plan their advertising campaigns by selecting appropriate types of products, most suitable for this advertising channel (low involvement/affective product categories) and targeting appropriate segments of consumers, those most affected by such ads (consumers high in impulse buying tendencies).

Of course, our findings are weakened by a number of limitations and leave many questions open to further investigation. The use of the particular sample is an obvious limitation, as in all culturally sensitive marketing research. This study was conducted with Greek consumers and, hence, the results may or may not reflect the behavior of consumers in other cultural settings. Further, although text messaging still represents the most basic form of addressing consumers via mobile devices, future studies should examine whether our results hold true across other types of multimedia content that can be presented on mobile devices. Finally, the use of a single product to represent each quadrant of the cognitive-affective involvement grid limits the extent to which the results can be generalized to other product categories, especially those that cannot be readily classified as falling into any or only one quadrant.

Further empirical investigation, particularly in field settings and with other products and forms of mobile advertising, would broaden our understanding of the factors that determine effectiveness in these channels and inform advertising strategy and planning.

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