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**Article**

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European Research on Management and Business Economics (ERMBE)

**Provided in Cooperation with:**

European Academy of Management and Business Economics (AEDEM), Vigo (Pontevedra)

*Suggested Citation:* Jiménez, Nadia; San-Martín, Sonia (2017) : Attitude toward m-advertising and m-repurchase, European Research on Management and Business Economics (ERMBE), ISSN 2444-8834, Elsevier, Amsterdam, Vol. 23, Iss. 2, pp. 96-102, <https://doi.org/10.1016/j.iedeen.2016.12.001>

This Version is available at:

<https://hdl.handle.net/10419/205745>

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## Attitude toward m-advertising and m-repurchase<sup>☆</sup>



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### ARTICLE INFO

#### Article history:

Received 25 February 2016

Accepted 1 December 2016

Available online 20 February 2017

#### JEL classification:

M3

#### Keywords:

Attitude

Mobile

M-repurchase

### ABSTRACT

One of the business models that attracts scholars and professionals' interest is mobile commerce. This paper applies the theory of shopping preference to this field. It analyzes the role of personal factors (perceived control and propensity to use technology), social factors (influence of a social group), and epistemic factors (compatibility) to determine consumers' attitude toward mobile advertising (m-advertising) and mobile repurchase (m-repurchase). The information of 973 mobile shoppers is analyzed in two contexts (Spain as a developed country and Mexico as a developing country). A positive attitude toward m-advertising is confirmed to increase m-repurchase through the mobile phone and the indirect influence of personal, social, and epistemic factors on shoppers m-repurchase (through the attitude toward m-advertising) varies depending on the analyzed market.

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### 1. Introduction

The mobile phone is no longer just a communication tool since it has also become a commercial channel of products and services for many companies aware of its potential as a marketing tool. Thus, smartphones are essential marketing instruments for companies in any country, developed or emerging, given the dramatic growth in mobile phone use (ITU, 2014). As Martín de Bernardo and Priede Bergamini (2007) point out, the development of mobile marketing (m-marketing) is directly related to the evolution of different technologies, such as mobile phones and wireless devices. Following Martín de Bernardo and Priede Bergamini (2007: 80), m-marketing is that activity dedicated to the design, implementation, and execution of marketing actions conducted through mobile devices. Meanwhile, mobile commerce would involve the purchase of goods through these gadgets.

Few studies have explored how mobile shopper behavior comparatively varies across countries (Chung & Holdsworth, 2012; Jayawardhena, Kuckertz, Karjaluoto, & Kautonen, 2009). In this sense, it is compulsory to study the determinants of consumer behavior of different nature to better understand the use of mobile phones as a channel of communication and marketing in different markets. In this perspective, the aim of this paper is twofold.

<sup>☆</sup> This work was supported by the Ministry of Economy and Competitiveness (Spain) through funding (Grant reference: ECO2014-53060-R) for a research project on distribution and technologies.

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First, it aims to determine the role of personal, social, and epistemic factors (i.e. propensity to use technology, perceived control, social influence, and compatibility) in influencing buyer's attitude toward m-advertising and, finally, in their repetition of mobile shopping. To do this, we will apply the theory of shopping preference (Sheth, 1981) to the context of mobile commerce. Second, it seeks to identify whether there are differences in the generation of a positive attitude toward m-advertising and repeat mobile purchase depending on the country analyzed.

Among the most notable contributions of this paper, it should be noted that it is one of the few studies that uses data from real mobile shoppers, and contrasts an innovative theoretical model for two different countries, one emerging and one developed, leading to interesting academic and professional implications for a potentially high growth in the marketing area.

### 2. M-repurchase and attitude toward m-advertising

M-repurchase refers to the subjective probability that mobile shoppers show to buying again from a certain mobile seller in the future (Pihlström & Brush, 2008). M-repurchase involves multiple benefits for the firms, such as a stable demand, a higher sales volume, cost savings in attracting new customers, and increased value of the portfolio. For the consumer, m-repurchase involves a faster process of buying, mainly by avoiding pronounced efforts in searching and comparing alternatives and increasing knowledge of the product and/or service before purchase (Duffy, 2003; Reicheld, 2002).

In an introductory phase of growth of mobile commerce, marketing activities through mobile devices can help firms to promote

m-repurchase. However, the activities of m-marketing, such as m-advertising, have been scarcely studied compared with other variables such as the adoption of mobile commerce or attitude toward mobile shopping or attitude toward the products or services that are sold through mobile devices (Achadinha, Jama, & Nel, 2014; Muk & Chung, 2015). We must not forget that the demand for products and services through mobile phones is still in a growth phase and thus improving customer's attitude toward business-to-consumers' communication in this channel is extremely important in order to achieve brand awareness and stimulate demand (Groß, 2015).

M-advertising lets firms take advantage of the particularities of m-marketing and mobile channels to facilitate the process of mutual and instantaneous communication with mobile shoppers (Achadinha et al., 2014; Groß, 2015). This type of communication should be integrated with other communication channels used by the company in a complementary manner (Martín de Bernardo & Priede Bergamini, 2007). Attending Bauer, Barnes, Reichardt, and Neumann (2005), a positive attitude toward m-advertising can be understood as a predisposition to consistently respond favorably toward m-advertising.

Several studies suggest that acceptance of m-marketing (including m-advertising) is a prerequisite for the development of mobile shopping (Jayawardhena et al., 2009). In this regard, Gazley, Hunt, and McLaren (2015) find evidence that the attitude toward advertising can become a determining variable to reinforce the behavior of consumers in the mobile context. When consumers receive advertising through mobile devices, they evaluate information, and based on that assessment; they can develop an intention to repeat purchase or reject the product or service. Thus, only when the consumer attitude toward m-advertising is positive, they will develop an intention to repeat purchase regarding promoted products by mobile devices (Achadinha et al., 2014; Muk & Chung, 2015).

**H1.** Positive attitude toward m-advertising has a positive effect on m-repurchasing.

### 3. Predictors of attitude toward m-advertising and the moderator role of the country

The theory of shopping preference (Sheth, 1981), for an offline purchase context, suggests that among the determinants of motivation of buyer behavior personal, social, and epistemic factors should be considered. Personal factors allude to customer's personality traits; social factors refer to the social influence or normative values imposed by others (i.e. friends, family, or a group of reference); and epistemic factors are related to perception, curiosity, knowledge, and consumer coexistence with the environment. We propose that this theory is valid in technological contexts (Cho & Workman, 2011), such as mobile shopping context. Thus, this study contemplates (in the order above) the propensity to use technology and perceived control as personal factors, social influence as a social factor and compatibility as an epistemic factor in determining the attitude toward m-advertising and final repurchase by mobile.

The propensity to use technology is considered as a personal and individual variable that can lead to a positive attitude toward the use of new information and communication technologies (Wu & Wang, 2005). However, its role in the adoption of mobile technology still requires a thorough analysis, based on the absence of a consensus on its effects on the behavior of electronic customers (Chao, Reid, & Mavondo, 2013). In this sense, Carter and Bélanger (2005) suggest that higher levels of acceptance and propensity to use technology are necessary for increasing customers' use of a new shopping channel, such as mobile. Therefore, an individual whose personality leads to innovate in the field of new technologies might respond positively to the knowledge of new technologies, seeking

to experiment with them as soon as they become aware of their existence. Also, they will usually be the first in their group of reference to test these technologies and will enjoy experimenting with them (Jeong, Yoo, & Heo, 2009). Thus, consumers characterized by high levels of propensity to use technology tend to make more constructive use of the information received through this media to increase their knowledge about it and also are more likely to receive much more information by mobile (Bauer et al., 2005). Therefore, they may have a more positive attitude toward m-advertising. To the best of our knowledge, we have not found any prior work that has tested this relationship, since previous research focuses on the effect of propensity to technology on purchase intention, but not on the attitude toward m-advertising.

**H2.** The propensity to use technology has a positive effect on attitude toward m-advertising.

Perceived control represents a consumer's personal characteristic describing the individual perception about the skills or resources required to assume a behavioral decision that can make individuals feel more capable of purchasing through mobile channels (Chang, Chou, Yeh, & Tseng, 2016; Song, Sawang, Andrews, & Drennan, 2015) and have a positive attitude toward m-advertising. There is still little empirical evidence in the literature about the effect of perceived control on consumer willingness to accept m-advertising (Groß, 2015). Previous literature suggests that when an individual perceives they can control the purchase by mobile (including the reception of information), their willingness to accept advertising improves (Jayawardhena et al., 2009). Such as Hoffman, Novak, and Peralta (1999) analogously suggest, the feeling of loss of control is one of the main barriers to participation in technological marketing activities. According to these arguments, we propose that when mobile shoppers perceive that they have the necessary and sufficient skills and resources to control commercial communication through mobile their readiness to receive information and advertising by this media will improve.

**H3.** Perceived control has a positive effect on attitude toward m-advertising.

Social influence is a key to explain consumer behavior related to the use of technology, especially when the use of mobile phones is considered a social activity. In this sense, the user tends to learn or imitate behaviors of their referent agents (family, co-workers, or friends) for mobile adoption and use (Pedersen, 2005). This variable reflects the importance attached by the customer to others' opinions about whether they should behave in a certain manner (in our case, repurchasing by mobile phone) (Li, Dong, & Chen, 2012). Reference groups' expectations and opinions can influence the mobile purchase (Chang et al., 2016; Nysveen, Pedersen, & Tohorbjornsen, 2005; Schierz, Schilke, & Wirtz, 2010). Thus, if the group members, whom the consumer relates to, support the use of mobile phone to search information, receive advertising, compare products or services, and even purchase, the consumer will try to imitate these opinions and behaviors to be accepted in the group (Carter & Yeo, 2016). This fact would improve their attitude toward the use of mobile devices.

The relevance of social influence in shaping customers' attitude increases when users do not have complete information, as in the case of mobile purchase which is especially important at an early stage of development or dissemination of this new practice (Schierz et al., 2010). The social influence effect on shopping intention has been confirmed in various contexts, including mobile commerce (Song et al., 2015), but its effect on the attitude toward m-advertising has been addressed to a lesser extent (Muk & Chung, 2015). Pihlström and Brush (2008) found that social influence affects the attitude toward consumption activities and marketing through new technologies. Thus, we propose that the influence of a

customer's reference group can generate a positive attitude toward m-advertising.

**H4.** Social influence has a positive effect on attitude toward m-advertising.

Following [Sheth \(1981\)](#) and [Cho and Workman \(2014\)](#), episodic factors are related to the assessment of novelty in the purchasing environment. Undoubtedly, the use of the mobile channel involves curiosity about the new content and about the new ways to deliver and receive products ([Pihlström & Brush, 2008](#)). However, this novelty is not sufficient to purchasing products or services through mobile if the mobile channel is not adapted to the consumers' needs and desires ([Sheth, Newman, & Gross, 1991](#)). Therefore, compatibility is another variable that influences the adoption of marketing through new technologies ([Oh, Ahn, & Kim, 2003](#)).

Considering [Chemingui and Ben lallouna \(2013\)](#), mobile technology is compatible when it is adapted to the needs of the individuals, and it provides a familiar and appropriate media to customers' lifestyle and preferences. Although nowadays mobile phones have become an indispensable tool in the personal, professional, and social life of many users, few studies have been conducted to analyze the compatibility as a key determinant for the adoption of mobile commerce and mobile marketing ([Chemingui & Ben lallouna, 2013](#); [Wu & Wang, 2005](#)). Hence, when customers feel great compatibility with the use of a communication media (a lifestyle that matches the use of mobile phones and the need to transmit and receive information anywhere and anytime), they perceive it to be more useful ([Lin & Lu, 2015](#)), and they develop a positive attitude toward receiving m-advertising ([Lee & Jun, 2007](#)).

**H5.** Compatibility with mobile phone has a positive effect on attitude toward m-advertising.

Following [Chung and Holdsworth's \(2012\)](#) study, mobile commerce can be considered a global phenomenon due to social interactions through mobile phones around the world, and in this sense, it is reasonable to understand it through a cross-national approach. The fact that cultural and national variables can moderate the behavior of consumers is widely accepted in the literature ([Hofstede, Hofstede, & Minkov, 2010](#)). However, there are few studies that have analyzed the phenomenon of mobile commerce from a cross-national perspective ([Choi, Hwang, & McMillan, 2008](#); [Chung & Holdsworth, 2012](#); [Mortimer, Neale, Hasan, & Dunphy, 2015](#)).

In this regard, [Choi et al. \(2008\)](#), and [Chung and Holdsworth \(2012\)](#) suggest that depending on the consumer's country, variables such as attitude toward m-advertising, social influence, or propensity to use technology can affect the behavior of mobile shoppers to a greater or lesser extent. Specifically, [Choi et al. \(2008\)](#) find that different levels of adoption of mobile technology in each country can cause changes in the perception of m-advertising. Thus, differences in the consumers' behavior regarding mobile commerce may be due to variation in the effect of personal, social, and episodic factors on the attitude and behaviors of consumers in each country ([Pihlström & Brush, 2008](#)). In this sense, previous literature proposes that cultural factors may moderate the repurchase via mobile and attitude toward advertising ([Mortimer et al., 2015](#)). Therefore, consumers' perception of their resources, capabilities and skills regarding mobile technology, the influence of their reference group, and their compatibility with mobile phone can be affected by the national contexts under study. In this sense, an exploratory hypothesis is proposed to determine the moderating role of the country in the proposed prior hypotheses.

**H6.** The country of the mobile shopper (Mexico or Spain) moderates the relationships proposed in hypotheses H1–H5.

**Table 1**  
Fact sheet.

Population	Mobile shoppers older than 18 years of age.
Survey method	Personal questionnaires to mobile users that have already purchase via mobile phone.
Geographical field	Spain (developed country) and Mexico (emerging country).
Sample	447 Spanish mobile shoppers and 526 Mexican mobile shoppers.
Response rate	100%.

## 4. Empirical study

### 4.1. Scope of the study and measurement scales

Spain and Mexico were chosen as the countries for collecting information to contrast the proposed hypotheses due to their cross-national differences. The levels of economic, cultural, and technological development are different in these two countries. (1) Regarding economic differences, Spain represents a consolidated market and a developed country. In contrast, Mexico is a developing country and an emerging market. Considering the Human Development Report of the United Nations ([UNDP, 2015](#)), Spain occupies the 26th position, while Mexico occupies position 74. (2) There are significant cultural differences between Spain and Mexico. Some of the most cited studies which help understand the cultural differences between countries ([Hofstede, 1983](#); [Hofstede et al., 2010](#)) indicate that Spanish consumers are characterized by lower scores on the dimensions of power distance and masculinity and have higher scores on the dimensions of individualism and tolerance of uncertainty than Mexican consumers. (3) In the technological context: according to data from the [ITU \(2014\)](#), in both countries, Spain and Mexico, the use of mobile phones (106.9% and 85.8% respectively) has already surpassed the use of the Internet (71.57% and 43.5% respectively), but penetration rates of both technologies are greater in Spain than in Mexico.

Primary information was obtained through personal surveys of mobile phone users randomly chosen and selected from the members of a panel in each country who responded affirmatively to the question of whether they had made a purchase by mobile phone. Encounters in a common public place were agreed to in order to personally apply the questionnaire. A valid sample of 447 mobile shoppers in Spain and 526 mobile shoppers in Mexico were obtained ([Table 1](#)). Shoppers were asked about the last product or service purchased by mobile phone. The socio-demographic profile of Spanish and Mexican samples responds to men (60.2% and 56% respectively), ages 18–34 (85.2% and 79.7% respectively) and more than half with bachelor studies and/or vocational training (55.1% and 61.7% respectively). The socio-demographic profile of both samples is similar to the profile of mobile shoppers described in the studies of 'Our Mobile Planet' by [Google \(2014\)](#). Specifically, Male (58% and 54%), 18–34 years (50% and 68%) and more than half with university education and vocational training (55% and 56%) for Spain and Mexico, respectively ([Google, 2014](#)).

The measurement scales used were adapted from previous literature to ensure content validity. Five-point Likert scales were used. [Goldsmith \(2002\)](#) and [Taylor and Todd's \(1995\)](#) studies were referred to in order to measure the attitude toward m-advertising, and [Harris and Goode \(2004\)](#), and [Zeithaml, Berry, and Parasuraman \(1996\)](#) to measure m-repurchase. The propensity to use technology was measured with [Goldsmith and Hofacker's \(1991\)](#) scale, and perceived control with [Taylor and Todd's \(1995\)](#) scale. In the case of social influence, [Nysveen et al. \(2005\)](#) and [Yang, Lester, and James \(2007\)](#) studies were considered as references, and for compatibility the studies of [Premkumar and Ramamurthy](#)

**Table 2**  
Results of the measurement model and the multigroup model.

Latent variable	Observable variable	Coefficients		R <sup>2</sup>	Composite reliability	Extracted variance
		λ	t			
Attitude toward m-advertising	AMA1	1.000	–	0.755	0.945	0.686
	AMA2	0.857	30.45	0.625		
	AMA3	0.855	30.37	0.623		
	AMA4		Delated			
M-repurchase	MR5	0.947	40.22	0.741	0.928	0.811
	MR6	0.955	44.74	0.816		
	MR7	1.000	–	0.787		
Propensity to use technology	PT8	0.973	36.58	0.742	0.892	0.735
	PT9	0.834	29.55	0.578		
	PT10	1.000	–	0.729		
Perceived control	PC11	1.000	–	0.637	0.799	0.668
	PC12	0.812	24.65	0.538		
Social influence	SI13	1.000	–	0.660	0.907	0.765
	SI14	0.992	38.26	0.740		
	SI15	0.962	36.48	0.706		
Compatibility	CO16	0.902	35.55	0.660	0.909	0.671
	CO17	1.000	–	0.768		
	CO18	0.954	39.20	0.722		
	CO19	0.798	29.25	0.538		
	CO20	0.696	24.04	0.426		
Goodness of fit indexes	χ <sup>2</sup> = 962.04; p = 0.00; RMSEA = 0.05; NFI = 0.94; CFI = 0.96; IFI = 0.96; RFI = 0.94; GFI = 0.90					
Hypothesized path			Spain β(t)			Mexico β(t)
H1: AMA → MR			0.135 (2.417)**			0.191 (3.941)**
H2: PT → AMA			0.059 (0.892)			0.121 (1.968)**
H3: PC → AMA			0.118 (1.570)**			–0.161 (–2.147)**
H4: SI → AMA			0.234 (2.914)**			0.399 (5.342)**
H5: CO → AMA			0.135 (1.722)*			0.167 (2.291)**
Global goodness of fit indexes			Goodness of fit indexes			Goodness of fit indexes
χ <sup>2</sup> = 1395.4; p = 0.00; RMSEA = 0.06; NFI = 0.92; CFI = 0.94; IFI = 0.94; RFI = 0.92			χ <sup>2</sup> = 661.4 (48%); RMR = 0.10; GFI = 0.87			χ <sup>2</sup> = 734.0 (52%); RMR = 0.09; GFI = 0.88

Abbreviations: SI: social influence; PC: perceived control; PT: propensity to use technology; CO: compatibility; AMA: attitude toward m-advertising; MR: m-repurchase; χ<sup>2</sup>: chi-square statistic; RMSEA: Root-Mean-Square-Error of Approximation; NFI: Normed Fit Index; CFI: Comparative Fit Index; IFI: Incremental Fit Index; RFI: Relative Fit Index; RMR: Root Mean Square Residual; GFI: Goodness-of-Fit Index.

\* p < 0.10.  
\*\* p < 0.05.

(1994) and Chemingui and Ben lallouna (2013) were used. The items are presented in the Appendix.

4.2. Analyses and results

A confirmatory factor analysis determined the convergent and discriminant validity of the measurement model and yielded the final scales. The results of the adjusted model and the resulting variables are shown in Table 2. The reliability of the final scales is corroborated by the coefficient values of composite reliability and extracted variance (greater than 0.60 and 0.50 respectively) (Bagozzi & Yi, 1988). The discriminant validity was confirmed by verifying that the extracted variance of each latent variable in all cases was larger than the squared correlations with other constructs (Fornell & Larcker, 1981).

Also, the metric invariance was corroborated by restricting loadings of factors between countries. It was found that the chi-square difference between the restricted and unrestricted models was not statistically significant (χ<sup>2</sup> diff (13): 3.5, p > 0.05) and the goodness of fit indices of the restricted model are adequate. Then, following the methodology of structural equations, the multigroup model and the degree of significance of each of the proposed hypothesis were estimated. The goodness of fit indices of the proposed model are acceptable (Table 2). Once validated the multigroup structural model, the moderation of the country is supported (H6), since there

is a statistically significant difference between the chi-square of the restricted model and unrestricted model (χ<sup>2</sup> diff (5): 13.3, p < 0.05).

The results allow us to accept hypothesis H1 for Spain (β = 0.135; p < 0.05) and Mexico (β = 0.191; p < 0.05). Thus the attitude toward m-advertising positively influences m-repurchase by mobile in both markets, but with a slightly lower coefficient in the case of the Spanish market in contrast to the Mexican market. Hypothesis H2 is partially accepted since the influence of propensity to use technology on attitude toward m-advertising was supported for the case of Mexico (β = 0.121; p < 0.05) but not for the case of Spain (β = 0.059; p > 0.05). Regarding the perceived control, it positively influences the attitude toward m-advertising in Spain (β = 0.118; p < 0.05), but, unexpectedly, it has a negative influence in the case of Mexico (β = –0.161; p < 0.05), which also allows to partially accept proposed hypothesis H3.

The influence of a social group positively affects the attitude toward m-advertising in both markets, with a lower coefficient in the case of Spain (β = 0.234; p < 0.05) than in the case of Mexico (β = 0.399; p < 0.05), supporting hypothesis H4. Lastly, regarding hypothesis H5, which proposed the influence of compatibility on the attitude toward m-advertising, it is accepted for both countries, but with a greater coefficient and significance in the case of Mexico (β = 0.167; p < 0.05) that in the case of Spain (β = 0.135; p < 0.10). To sum up, there are significant differences due to the country of the mobile shoppers, which supports hypothesis H6.

## 5. Discussion

In line with the theory of shopping preference (Sheth, 1981), but pioneering in its application to the study of mobile commerce: our results confirm that regardless of the national context of purchase by mobile, a personal characteristic of the consumer (perceived control), the social influence, and an epistemic factor (compatibility) are determinants of attitude toward m-advertising and, indirectly, of re-purchase. However, the contribution of this study is even greater if we consider that the effect of the variables considered as determinants of the attitude toward m-advertising and m-repurchase varies depending on the analyzed market. Thus, we could say that the theory of shopping preference is useful in explaining the purchase by mobile in different markets, but more in developing markets than in developed ones, according to our study. Perhaps in a country, like Mexico, where mobile commerce is in the earliest stages of development, m-shoppers need more motivational elements to display a positive attitude toward m-advertising and m-repurchase than the required motivators in countries with higher rates of penetration and use of mobile technology, such as Spain.

The results of this study indicate that a positive attitude toward m-advertising can increase m-repurchase intentions in Spain and Mexico, in line with the results of previous studies (Achadinha et al., 2014; Gazley et al., 2015). Following our proposed model, if a positive attitude toward m-advertising generates an m-repurchase intention in both kinds of markets, the difference is determined by how the propensity to use technology, perceived control, social influence, and compatibility affect the attitude toward m-advertising in each country.

In this sense, it is plausible that the propensity to use technology in an emerging market (Mexico) influences the attitude toward m-advertising more than it does in a developed country (Spain). According to our results, customers prone to use of mobile technology are also more willing to experiment with new media for receiving advertising and have a more positive attitude toward it (Muk & Chung, 2015). In contrast, in a country where the mobile commerce is in more advanced stages (due to greater economic and technological development), customers do not need to resort to m-advertising to repeat purchase, as might be the case of Spain. This result can be understood if we keep in mind the still existing digital rift between developing and developed countries, which also determines the use of mobile technology for information and purchase in each country.

A related aspect to a predisposition to adopt and use mobile technology as a shopping channel is the self-perceive ability to use mobile (perceived control). In this line, it is interesting to note that perceived control has a negative influence on the attitude toward m-advertising in the case of Mexico. Thus, in a culture with a greater aversion to uncertainty and a more uncertain institutional framework, as is the case of Mexico, when customers perceived control over mobile technology increases, the need to resort to m-advertising to determine their shopping behavior is reduced and may even develop a negative attitude. By contrast, in a developed country with a more certain institutional framework, as is the case in Spain, dominion over mobile technology makes the user feel more confident to control communication with the company and therefore improves their attitude toward advertising through mobile. Our results agree with the study of Muk and Chung (2015), which suggests that consumers in developed countries tend to rely more on their previous personal experiences to assess the consequences of receiving advertising based on their behavior than consumers in developing countries.

Social influence is key to displaying a positive attitude toward m-advertising that goes beyond national context. Other studies have already highlighted the important role it plays in the attitude

and behaviors related to the use of technology (Chang et al., 2016). However, it is interesting to note that the social group has a greater influence on attitude toward m-advertising in Mexico than in Spain. Given the cultural differences between the analyzed countries. It is arguable that in a country with greater inter-group collectivism, such as Mexico, the influence of the social environment can make customers integrated into a group that regularly use mobile technology have a better attitude toward mobile communication than in a more individualistic country, such as Spain, because of the closeness in the existing personal relationships in collectivist countries. Regarding developed countries, as in previous studies, social acceptance and group's opinions are widely valued in purchasing processes through new technologies (Muk & Chung, 2015). However, compared to other studied determinants (i.e. the propensity to use technology, perceived control or compatibility), social influence (of members of a reference group) is the main predictor of individuals' attitude toward m-advertising in Spain. Thus, in developed countries, if customers feel they have the knowledge and skills needed to use mobile commerce and feel "pressured" by a social group, the fact of having a positive attitude toward m-advertising will impact especially on repurchase through the mobile channel.

Compatibility between the characteristics of the mobile phone and customers' lifestyle, habits, needs and preferences can raise customers' positive attitude toward m-advertising, but again this effect is larger in developing countries than in developed ones. This result confirms the relevance of this variable in the adoption of mobile commerce indicated by prior studies, such as Wu and Wang (2005) and Lee and Jun (2007) for countries in early stages of adoption of mobile commerce. We assume that in more developed countries, such as Spain in comparison to Mexico, modernization of technology is faster and therefore mobile phones are now more compatible with the consumer, so this variable does not have much influence on the attitude that consumers have toward m-advertising. It may be a basic necessary condition considered by the consumer to accept m-advertising in developed markets.

As managerial implications, we should note that this study enables firms to recognize the factors which managers can employ to generate a positive attitude toward m-advertising and to encourage m-repurchase through this channel. Thus, in Spain, there are variables (such as compatibility or propensity to use technology) that do not affect the attitude toward m-advertising the customer has. Therefore, companies in the Spanish market may appeal to the customer's reference group in their marketing and communication strategies to improve the attitude toward m-advertising and indirectly strengthen the repurchase by mobile phone. By contrast, in the case of Mexican mobile shoppers, the greater the influence of the group, the lower the perceived control; and the greater propensity to use technology and mobile compatibility with their lifestyle, the better the attitude toward m-advertising, and indirectly greater their m-repurchases. Furthermore, firms should try to understand the perception of control their clients have when using mobiles, since this differently influences their attitude and indirectly their shopping behavior in each market (e.g. by detecting those customers who perceive a greater complexity in purchasing through mobile via a free mobile customer attention service). Thus, in the case of Spain, the consumer perception of their knowledge of the environment improves their attitude toward m-advertising. In this market there should be effective promotion and communication strategies aimed at prescribers of customers (e.g. discounts for purchases of family and friends or mobile gift coupons for purchases of third parties) because social influence improves attitude toward m-advertising. Meanwhile, in developing countries like Mexico, different strategies of communication can be employed for the market segment with less knowledge and skills with mobile, while increasing m-advertising might be less effective or even intrusive in a market segment with higher perceived control.

According to our study, firms operating in international markets and targeting their products and services to customers from countries with different levels of technological, economic, and cultural development should note that there are different determinants of the attitude toward m-advertising and m-repurchase. Therefore, in emerging countries, firms must consider customer's propensity to use technology as a more important factor than in countries where mobile commerce shows greater penetration and development. Also, firms operating in developing markets will more effectively apply a direct advertising strategy if they add compatible elements in their webs and mobile apps. In other words, they must be compatible with the customers' lifestyle and habits, because it will improve the consumers' attitude toward m-advertising (e.g. customizing m-advertising by letting customers pick what products and services they would like to receive information about).

Finally, we must recognize the limitations of this work, which in turn, are ways to open new lines of research for future studies. First, this study is restricted by being cross-sectional and a comparison of m-shoppers of two specific countries. So, the results might not apply to other countries. Second, there are other variables of interest that have not been taken into account in this study. Accordingly, as a future line of research, we propose the inclusion of other variables that help to deepen comprehension of the cross-national differences that affect the mobile shopping behavior, such as collectivism, uncertainty, risk, product category, and advertising style.

## Appendix. Items description

Code	Item
AMA1	Receiving advertising by mobile/cell phone is nice.
AMA2	Mobile/cell phone advertising gives me useful information.
AMA3	I like to receive advertising via mobile/cell phone.
AMA4	Receiving mobile/cell phone advertising irritates me. <sup>a</sup>
MR5	I will purchase by mobile/cellular phone, even if the price is higher than in other channels.
MR6	I plan to purchase by mobile/cell phone, instead of buying in other channels.
MR7	I desire to repeat mobile/cellular purchases when the opportunity arises.
PT8	If I hear about a new information technology, I will look for experiencing it.
PT9	Among my friends and family, I am usually the first to try new technologies.
PT10	I like to experience the new information and communications technologies.
PC11	I have the resources, knowledge and skills to use the mobile/cell phone to buy something.
PC12	It is easier for me to receive and/or to search for information and/or to buy with my mobile/cell phone than with other devices, given my resources, opportunities and knowledge.
SI13	The people whose opinions I value approve that I use the mobile/cell phone when I purchase and/or search for information about products and/or services.
SI14	Most of the people I am aware of think that I should use the mobile/cell phone to buy some product and/or service.
SI15	It is expected that I use my mobile/cell phone to buy or search for and receive information about products and/or services.
CO16	My mobile/cell phone fits in my lifestyle.
CO17	My mobile/cell phone fits in the way I like to find/buy products and/or services.
CO18	My mobile/cell phone is compatible with many aspects related to my behaviour.
CO19	The mobile/cell phone is better than other means of communication and purchase.
CO20	The mobile/cell phone is a must in today's life.

Note: The most common denomination in each country was used for the mobile phone (mobile in Spain and cell phone in Mexico).

<sup>a</sup> Reverse code.

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