The path to mobile shopping compatibility

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Abstract

The mobile technology involves an unexplored world of doing business and consumer behavioral change that constitutes a revolution in the application of technologies to marketing. A key factor in the adoption of mobile commerce is the compatibility that the consumer perceives with his/her life. Given that the research on compatibility with mobile purchases made so far treats it as an antecedent of adoption, this pioneer research studies the influencing role of two more personal factors (self-efficacy and innovativeness) and two factors more related to the shopping (involvement and perceived entertainment). The model was tested using PLS with information from 583 Mexican mobile buyers. Our results show a positive effect of innovativeness, involvement and perceived entertainment on compatibility. On the contrary, self-efficacy does not seem to influence the perception of compatibility of mobile shopping with consumer life. This work has important implications for the practice of professionals dedicated to mobile commerce.

Keywords: Compatibility, mobile shopping, self-efficacy, innovativeness, implication, entertainment.

1. Introduction

Worldwide rapid penetration of mobile phone is changing consumers' daily life; it has become a reference technology in the Information Society (Tseng and Chiang, 2013). The

latest annual report of "The Networking Society", published by the ONTSI (2017), revealed that landline penetration had shown a downward trend in recent years whereas mobile phones have increased their presence. It is estimated a global mobile phone penetration of 99.7 lines per 100 inhabitants (ONTSI, 2017). According to the Mexican Internet Association's (AMIPCI, 2017) data, mobile devices were a key channel in online sales in Mexico, since 34% of total online sales were made through this mobile channel and 75% of electronic shoppers have bought using a mobile device. This study reveals that Mexicans like to use these devices because they provide easy access to the Internet and save time. In sum, mobile commerce is now one of today's major challenges, which is perhaps why current research is mainly focusing on its adoption.

Research into technology acceptance has for some decades been a recurring theme in the literature and has given rise to a number of different theories and models (Jayasingh and Eze, 2009; Leong et al., 2018; Lim, 2018). In the mobile technology domain, conventional theories have also proven valid, although they do require certain modifications if their explanatory power opt to be increased (Cheng, 2015). In this vein, studies exploring mobile phones, such as the one by Chen et al. (2009), underscore the idea that, personal differences have a major impact on adoption. Therefore, Davis' (1989) Technology Acceptance Model (TAM) must perforce embrace factors such as compatibility (Jayasingh and Eze, 2009), a construct derived from the Diffusion of Innovation Theory, and which might be defined as the extent to which innovation is perceived as consistent with the values, past experiences, and needs of potential adopters (Rogers, 2003). Translated to the mobile phone context, compatibility may be defined as the degree to which conducting electronic transactions via mobile is perceived as consistent with the values, needs and past experiences of potential clients (Chen, 2008; Schierz et al., 2010; Khraim et al., 2011; Chemingui and

Ben Lallouna, 2013). In sum, compatibility reflects the concurrence between the user, technology, the task in hand and the purchase situation (Karahanna et al., 2006).

Researchers such as Wu and Wang (2005), Mallat et al. (2009) and Chung (2014), amongst others, have applied the notion of compatibility directly to specific mobile-commerce. As regards the linkages between compatibility and other constructs, it is most frequently seen as an antecedent of use intention, perceived ease of use and perceived usefulness (Sun et al., 2009; Cheung and Vogel, 2013; Di Russo et al., 2013; Hanafizadeh et al., 2014; Mutahar et al., 2017; Jaklič et al., 2018). Wu et al. (2007) state that the more compatible an innovation is with users, the less effort they will need when learning how to use it and the greater the perceived benefits will be. The compatibility between the features displayed by a mobile phone and users' lifestyle is a key factor in mobile banking (Mohammadi, 2015; Shaikh and Karjaluoto, 2015; Sinha and Mukherjee, 2016; Mutahar et al., 2017; Gumussoy et al., 2018), mobile commerce and mobile marketing (Oh et al., 2003; Wu and Wang, 2005; Lee and Jun, 2007; Lin, 2011; Tanakinjal et al., 2010; Chemingui and Ben Lallouna, 2013; Sun and Chi, 2018), attitude towards mobile advertising (Lee and Jun, 2007; Lin and Lu, 2015) and repurchase intention (Jiménez and San Martín, 2017). The literature highlights the need to gain deeper insights into a said variable when exploring consumer behavior (Chen et al., 2009; Jayasingh and Eze, 2009; Mohammadi, 2015). Given such a context, the question arises as to which factors make consumers perceive said compatibility between mobile purchases and their life.

As there are numerous studies which examine the link between compatibility and purchase intention (Lee and Kim, 2011; Wu and Wang, 2005; Chung, 2014) yet very few which analyze the drivers of compatibility with mobile purchases (Ruíz-Mafé et al., 2010). The present work seeks to gain an understanding, within the context of mobile purchasing. Specifically, this papers study the effect which two variables that are more intrinsic to the

purchaser (self-efficacy and innovativeness) and two variables -that are more extrinsic to the consumer- relating to purchases (involvement with the purchase and perceived entertainment during the purchase), might have on the perceived compatibility between mobile purchases and the purchaser's life.

The present work thus makes an original and innovative contribution to the existing literature in the field of marketing and technologies since: (i) It addresses purchases made using the mobile phone, a new channel which is attracting followers both in the business world and amongst consumers, creating new ways of operating in the marketplace and new forms of purchase behavior. (ii) It pioneering considers, which factors lead consumers to perceive mobile purchases as being compatible with their life, and fitting in with it, and amongst said determinants considers more personal aspects as well as others related to purchase situation. (iii) It uses a large sample of actual mobile purchasers, who are thus able to provide a more trustworthy appraisal of this kind of purchase.

In order to achieve the general goal proposed, the second section reviews the literature, culminating with the hypothesis proposal. After presenting the overall research model, we move on to the third section, which focuses on the details of the empirical study. Finally, the fourth section presents the key findings, professional implications, limitations and future lines of research.

2. Which factors lead consumers to perceive mobile commerce as compatible with their life?

As explained earlier, compatibility has a positive impact on the adoption of mobile devices for transactional purposes (Lin, 2011; Lin and Lu, 2015; Sun and Chin, 2018), such that compatibility with mobile technologies displays a positive link to attitude towards mobile purchases which, in turn, has a direct effect on mobile purchase intention (Lee and

Kim, 2011). In fact, mobile compatibility is a challenge for the service provider to achieve mobile commerce implementation with multi-screen technology (Shin and Biocca, 2017). Given the importance of compatibility in the mobile commerce context, the present research is both original and timely since, unlike previous studies, it does not explore the effect of compatibility on other variables, but the other way round. As can be seen in Table 1, prior literature analyzing the determinants of compatibility remains scarce.

Direction	Antecedent	Consequence	References
Positive	---	Perceived usefulness (+) Perceived ease of use (+) Intention to use (+)	Wu *et al.* (2007); Sun *et al.* (2009); Ojha et al. (2009); Akturan and Tezcan (2012); Cheung and Vogel (2013); Crespo *et al*. (2013); Di Russo et al. (2013); Hanafizadeh *et al.* (2014); Mutahar et al. (2017); Jaklič et al. (2018)
		Perceived benefits (+)	Beatty *et al.* (2001); Vijayasarathy (2004); Wu *et al.* (2007)
	---	Intention to repurchase (+)	Jiménez and San Martín (2017)
	---	Adoption of online technologies (e-commerce, online banking, e-government, online training, online games, e-books) (+)	Verhoef and Langerak (2001); Chen et al. (2002); Carter and Belanger (2004); Kolodinsky et al. (2004); Vijayasarathy (2004); Hernández and Mazzon (2007); Lin (2007); Liao and Lu (2008); Papies and Clement (2008), Ojha et al. (2009); Crespo and del Bosque (2010); Hernández-García et al. (2010); Schierz et al. (2010); Chen (2011); Hussein et al. (2011); Lai and Chang (2011); Lu et al. (2011); Al-Ajam and Nor (2013); Crespo et al. (2013); Hanafizadeh et al. (2014); Cristóvão (2016); Faqih (2016)
	---	Adoption of mobile technologies (mobile information and entertainment services,	Oh et al. (2003); Lee et al. (2003); Meuter et al. (2005); Wu and Wang (2005); Hernández and Mazzon (2007); Lee and Jun (2007); Mallat

		mobile payment services, mobile banking, mobile commerce, mobile marketing, and mobile advertising) (+)	(2007); Tan and Chou (2008); Kim et al. (2009); Mallat et al. (2009); Roach (2009); Koenig-Lewis et al. (2010); Lin (2011); Liu and Li (2010); Schierz et al. (2010); Tanakinjal et al. (2010); Wessels and Drennan (2010); Sangle and Awasthi (2011); Yang et al. (2012); Chemingui and Ben Lallouna (2013); Chen (2013); Hanafizadeh et al. (2014); Di Pietro et al. (2015); Kang et al. (2015); Lin and Lu (2015); Mohammadi (2015); Pham and Ho (2015); Shaikh and Karjaluoto (2015); Wong et al. (2015); Koksal (2016); Ozturk et al. (2016); Wang et al. (2016); Liu and Yi (2017); Mutahar et al. (2017); Ramos de Luna et al. (2018); Sun and Chin (2018)
	---	Attitude towards mobile purchase (+) Intention to mobile purchase (+)	Lee and Kim (2011); Wu and Wang (2005); Chung (2014); Groß (2018); Lee et al. (2018)
	Entertainment (+)	---	Ruiz-Mafé *et al.* (2010)
Negative	---	Learning effort (-)	Beatty *et al.* (2001); Vijayasarathy (2004); Wu *et al.* (2007)

--- Not found.

Table 1. Literature review on the antecedents and consequences of compatibility in the mobile context

If firms are able to make mobile purchases compatible with their clients' life, they will succeed in making new technologies seen as something more familiar (Ilie et al., 2005). To achieve this, we propose four determinant variables of compatibility with mobile commerce: two more personal ones (self-efficacy and innovativeness) together with two others which deal more directly with purchase (involvement and entertainment), which we now explain.

2.1. Self-efficacy

Self-efficacy derives from the Social Cognitive Theory (Bandura, 1986) and may be defined as the level of confidence individuals have in their ability to engage in a specific behavior (Khraim et al., 2011; Sripalawat et al., 2011; Huffman et al., 2013), for instance when undertaking a given task (such as making a purchase) using the mobile (Venkatesh and Bala, 2008; Ozturk et al., 2016). The importance of this variable lies in its ability to predict which behaviors individuals are most familiar with, since people tend to engage in tasks and activities they feel more capable of doing and at which they are most experienced (Venkatesh and Davis, 2000; Pérez, 2014; Cruz, 2015; Faqih and Jaradat, 2015). In line with Lai et al. (2012), this variable is a significant predictor of the adoption of information technologies, such as smartphones (Chen et al., 2011). Indeed, several researchers over the last few years have explored compatibility in specific mobile purchase situations (Wu and Wang, 2005; Mallat et al., 2009; Chung, 2014; Thakur, 2018) and have concluded that it has a positive impact on the adoption of mobile devices used for transactional purposes (Lin, 2011), thus making it an antecedent of mobile commerce (Oh et al., 2003; Wu and Wang, 2005; Lee and Jun, 2007; Lin, 2011; Tanakinjal et al., 2010; Chemingui and Ben Lallouna, 2013). In this line, bearing in mind the importance of self-efficacy in the context of mobile purchases as well as its influence on the perceptions which users have of technology and related activities (Venkatesh and Bala, 2008; Pérez, 2014; Faqih and Jaradat, 2015). We propose as an initial hypothesis that the greater the user self-efficacy, - in other words, their belief that they possess sufficient resources, knowledge, and skills to purchase using the mobile phone (Venkatesh and Bala, 2008) -, better mobile device will fit in consumers' life and thus the greater the perceived compatibility with mobile commerce. In this line, engaging in mobile commerce transactions will be viewed as consistent with users' values,

needs and past experiences (Chen, 2008; Khraim et al., 2011; Chemingui and Ben Lallouna, 2013).

H1. Self-efficacy has a positive effect on compatibility with mobile purchasing.

2.2. Innovativeness

Innovativeness is an innate human trait (Varma Citrin et al., 2000; Rogers, 2003; Eun Park et al., 2010) which may be defined as individuals' will to adopt products or ideas that are new within the context of their individual experience (Aldás-Manzano et al., 2009), for example with regard to any new information technology (Lu et al., 2005). This notion was introduced by Agarwal and Prassad (1998), who concluded that people whose personality enfolds a tendency towards innovation in the field of new technologies would respond positively towards a knowledge of said technologies, will try them out as soon as they become aware of their existence and will enjoy doing so. In line with Rogers' concept of "technological cluster" (2003), used to gauge the acceptance of mobile Internet (Ho Cheong and Park, 2005; Wong et al., 2015; Alalwan et al., 2018) and mobile commerce (Yang, 2005; Sair and Danish, 2018), the research carried out by Aldás-Manzano et al. (2009) concludes that if consumers have already purchased online then they are more likely to mobile purchase, since consumers tend to adopt a technology which offers the same functions as others they have already adopted. In other words, their perception of compatibility will be greater since they have already previously removed any obstacles to virtual purchasing (Sivanad et al., 2004). Innovation's compatibility with potential adopters may accelerate or delay the adoption rate (Zolkepli and Kamarulzaman, 2015) and lead users to use technological innovations (such as the mobile) for a wider range of activities (García and Calantone, 2002; Rogers, 2003; Kitchen and Panopoulos, 2010). In this line, several studies have explored the impact of this variable on the adoption of mobile services (Jones et al.,

2003, Jeong et al., 2009). Various researchers such as Dholakia and Uusitalo (2002), Baker et al. (2007) and Jeong et al. (2009) have evidenced that greater personal exposure to new technologies implies a greater willingness to engage in electronic purchases (Dholakia and Uusitalo, 2002; Ilie et al., 2005). Bearing in mind the above, and given that the perception of compatibility with the mobile purchase is linked to values, needs and past experiences (Chen, 2008; Khraim et al., 2011; Chemingui and Ben Lallouna, 2013), as a second hypothesis, we posit that the greater the individual innovativeness, the greater the perceived compatibility with mobile commerce.

H2. Innovativeness has a positive effect on compatibility with mobile purchasing.

2.3. Involvement

As pointed out by Drennan and Mort (2003), personal characteristics have a major impact on the adoption and use of new technologies when purchasing, and yet studies into the topic remain scarce. Involvement in mobile purchasing, defined by San Martín et al. (2012) as a stable and lasting state of personal relevance and interest in the channel (mobile) used to make a purchase, has been seen in recent decades as one explanatory variable of individual behavior. Such that, in a transactional context, individuals faced with the same purchase decision will behave differently depending on their level of involvement (Dholakia, 2001). The intensity of use of a given technology is linked to user lifestyle (Ruíz-Mafé et al., 2010; Kim and Baek, 2018), such that high involvement users enjoy interacting with the technology without concerning themselves with the possible risks involved in the transactions (Novak et al., 2003; San Martín et al., 2011). This idea has led certain authors, such as Sánchez (2005), to link this variable to technology acceptance and its related activities like purchasing using mobile devices. Bearing in mind the above, as a third hypothesis, we posit that the greater the user involvement in mobile purchasing, in other

words, the greater their interest in the latter, the more likely they are to perceive it as compatible with their life and, therefore, with their purchase behavior.

H3. Involvement has a positive effect on compatibility with mobile purchasing.

2.4. Entertainment

In agreement with Van der Heijden (2004), entertainment, defined by Moon and Kim (2001) as the experience perceived by users during the man-machine interaction, acts as an antecedent of perceived ease of use and perceived usefulness, indicating that an entertaining technology is both useful and easy to use for users. In this line, the Unified Theory of Acceptance and Use of Technology (UTAUT2) proposed by Venkatesh et al. (2012) subsequently embraced the notion of hedonic motivation, in other words, the fun linked to the use of technology as a major predictor of technology acceptance. In the context of mobile devices, perceived entertainment has a positive impact on the use of mobile services (Chemingui and Ben Lallouna, 2013). The research carried out by Ruíz-Mafé et al. (2010) into which factors determine the use of SMS to participate in television programmes concludes that entertainment exerts a positive influence on compatibility. Ruíz-Mafé's et al. (2010) evidence leads to the conclusion that there is a close link between mobile and person since the more enjoyment users get out of the mobile activity (i.e., use of SMS to participate in television programmes), the more they feel that taking part in them fits in with their life. Likewise, as a fourth hypothesis for the present research, we propose that the greater the users' perceived entertainment when making a mobile purchase, the greater the perceived compatibility with mobile purchasing.

H4. Entertainment has a positive effect on compatibility with mobile purchasing.

Figure 1 represents the original model proposed in this paper.

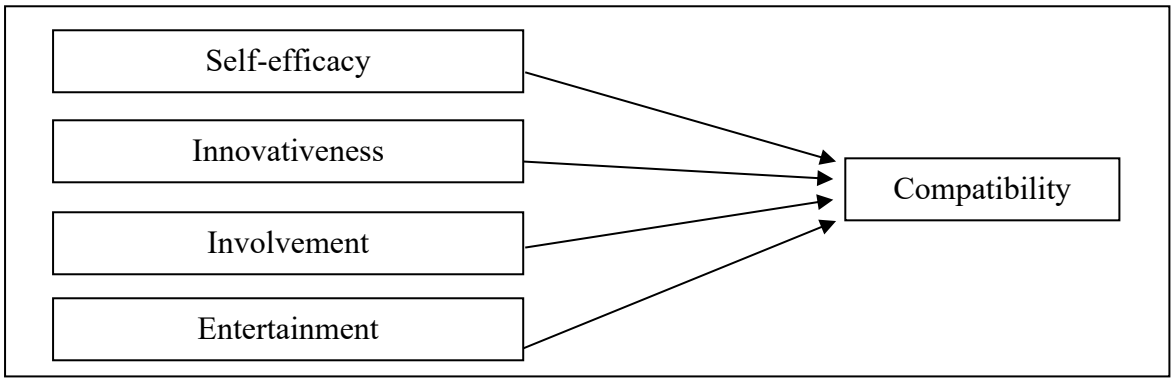


Figure 1. Proposed original model

3. Empirical study

In this section, we deal with the sampling used in the field work as well as the measurement of the variables and the main analyses carried out.

3.1. Measurement instrument and field work

Based on the review of the prior literature, the indicators which allow each variable to be measured in order to ensure the validity of the content were identified and adapted (see appendix). The measurement scales used were five-point Likert-type scales. In order to measure self-efficacy, the study by Chen et al. (2001) was used as a reference, for innovativeness the work by Goldsmith and Hofacker (1991) was employed, for entertainment the works of Cyr et al. (2006) and Nysveen et al. (2005) were used, for involvement the works of Zinkhan and Locander (1988) and Keaveney and Parthasarathy (2001) were helpful, and for compatibility those of Premkumar et al. (1994) and Chemingui and Ben Lallouna (2013) were used.

A systematic sampling method was employed to select a list of mobile phone numbers from a national panel of 1800 mobile users. Then, two-steps were followed to contact the interviewees. First, the mobile users were contacted to discard those consumers

that have not bought through a smartphone from the population under study. Second, the mobile users who satisfied the criterion to participate in the survey (i.e., mobile purchasing behavior) were invited to participate in a private and anonym questionnaire to evaluate the last product purchased using the mobile phone. Throughout three months' field work with the help of four qualified interviewers, users were individually interviewed using a computer-assisted telephone interviews system. Finally, 583 valid and complete questionnaires were obtained, resulting in a satisfactory response rate of 55.3% an error sample of 4.1%. The profile of the final sample is described in Table 2.

% Characteristic	
Gender	Age
57.8% - Male	*10.8%* - Under 18
42.2% - Female	*61.6%* - 18-24
Occupation	*18.4%* - 25-34
57% - Student	*6.9%* - 35-44
31.1% - Employee	*2.1%* - 45-54
8.3% - Entrepreneur	*0.2%* - 55-64
1.2% - House worker	Family structure
1.5% - Retired	*27.9%* - Single
0.9% - Unemployed	*6.5%* - Couple
Education	*38.9%* - Couple with kids
1.2% - Any degree	*4.1%* - Single with kids
0.9% - Primary School	*22.6%* - Other structure
4.3% - Junior High School	Last product category purchased by smartphone
29.1% - High School	*72.6%* - Digital consumption (i.e. music, movies, books).
17.9% - Vocational Training School	
44.2% - Higher Education	*27.4%* - Physical consumption (i.e. fashion, electronic devices, food).

2.4% - Postgraduate education

Table 2. Sample characteristics

According to the scarce secondary data available about Mexico's mobile commerce, the sample in our study is similar to the national profile of electronic shopper (including mobile buyers). In Mexico, 70% of electronic shopper have purchased by smartphone, most of the shoppers are male (54%) between 18 and 34 years of age (51%), and 81% have purchased digital products through a mobile device (AMIPCI, 2017).

Social science researchers agree that Common Method Variance (CMV) may reflect potentially serious bias when data comes from a single source (Villena et al., 2018; Safdar

et al., 2017). In order to rule out the possible existence of common method bias, procedural remedies in the design of the study were tracked. Atteding Podsakoff et al. (2003) recommendations, the measurement of the predictor and criterion variables in the design of the questionnaire were separated (i.e., including time lags and making prior responses less salient), respondents were warned that there are no right or wrong answers, the anonymity was protected and items syntax were carefully checked.

In addition, three statistical recommended remedies were employed to discard CMV problems whit the help of IBM SPSS Amos 23 software. First, the Harman single factor test was performed. Following the recommendations of Pan et al. (2015), if a single factor is extracted using the principal axes method, this accounts for 38.8% of the variance, a percentage below 50% (the commonly accepted value for pinpointing bias problems in the method). Second, the correlations matrix was tested to ensure there were no values above 0.9 (the highest is 0.767) (Kim et al., 2013; Podsakoff et al., 2003). Third, the common latent factor method was employed (Podsakoff et al., 2003; Malhotra et al., 2006). It involves adding a latent variable that represents the common method. In this technique, all manifest variables were related to the latent method variable, their paths were constrained to be equal, and the variance of the common factor was constrained to be 1. The results revealed that the variance accounted for (VAF) by the common method latent variable was 15.16% of the total variance. Consequently, the procedural and statistical recommended methods employed suggest that common method variance is unlikely to affect the findings of this study.

3.2. Analysis using PLS-SEM

As part of the preliminary analysis with the IBM SPSS Amos 23 software, the descriptive statistics of the observable variables were obtained (Table 3), prior to using PLS-SEM. This technique proves particularly valuable and robust in exploratory analyses

involving few indicators, small samples, and when there is no need to assume normality in the data. It is becoming increasingly widespread in the fields of marketing and information management systems (Hair et al., 2014; Chin, 2010). The two-stage process set out by Hair et al. (2014) was used, in which the measurement model was specified before testing the linkages between the constructs.

Specifying the measurement model involves evaluating the relations between the indicators and the constructs. The measurement model was accepted when it was seen that all the loadings of the reflective variables proved significant and were above 0.7, using SmartPLS3 and applying the bootstrapping procedure with 5,000 samples. The values of the Cronbach alpha ($\alpha > 0.6$), composite reliability (FC > 0.7), Spearman correlation (rho_A > 0.7) and average variance extracted (AVE > 0.5) were subsequently tested to ensure they exceeded the values required for the measurement model to be deemed reliable and valid (Hair et al., 2014; Hair et al., 2011) (Table 3).

Variable	Item	Mean	Standard deviation	Loading	α	CR	rho_A	AVE
Self-efficacy	SE1[a]	3.34	1.11	1.000***	-	-	-	-
Innovativeness	Inn1	3.35	1.13	0.844***	0.812	0.885	0.854	0.720
	Inn2	3.05	1.13	0.871***				
	Inn3	3.45	1.11	0.831***				
Involvement	Inv1	2.47	1.26	0.835***	0.834	0.900	0.843	0.750
	Inv2	2.91	1.19	0.886***				
	Inv3	2.70	1.24	0.876***				
Entertainment	Ent1	2.76	1.18	0.849***	0.868	0.909	0.873	0.715
	Ent2	3.24	1.11	0.840***				
	Ent3	3.18	1.06	0.835***				
	Ent4	3.03	1.10	0.858***				
	Comp1	2.81	1.18	0.847***	0.839	0.893	0.852	0.677

Compatibility	Comp2	2.80	1.20	0.867***
	Comp3	2.75	1.14	0.853***
	Comp4	2.95	1.21	0.714***

Note: *** p <0.01; [a] Mono-item; α: Cronbach's α; CR: composite reliability; AVE: average variance extracted.

Table 3. Measurement model

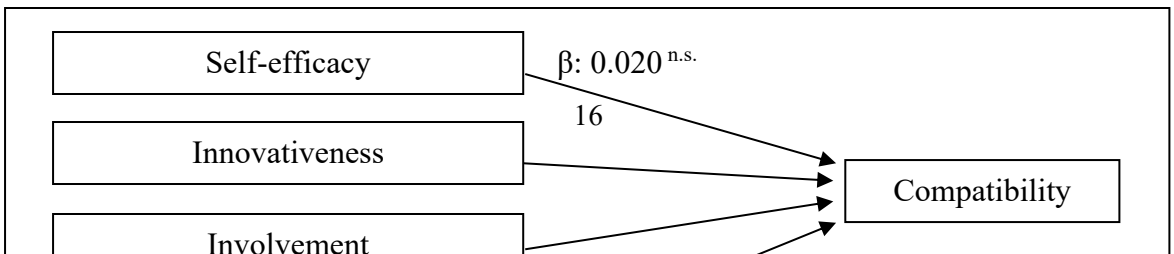
Convergent validity was observed following the guidelines of Fornell and Larcker (1988), verifying that the root of the extracted variance in all cases is above the correlations in the constructs. This was also tested by applying the most recent method proposed by Henseler et al. (2015), where it was seen that the value of the Heterotrait-Monotrait (HTMT) ratio was below 0.85 (Henseler et al., 2016) (Table 4).

	(1)	(2)	(3)	(4)	(5)
(1) Compatibility	*0.823*	0.848	0.512	0.440	0.318
(2) Entertainment	0.767	*0.846*	0.470	0.338	0.286
(3) Involvement	0.432	0.405	*0.866*	0.673	0.613
(4) Innovativeness	0.379	0.300	0.560	*0.849*	0.425
(5) Self-efficacy	0.292	0.268	0.559	0.383	1.000

Note: Elements in italics at the main diagonal show the square root of the average variance extracted (AVE). The correlation between latent variables are presented below diagonal and above the diagonal the ratio HTMT.

Table 4. Matrix correlations and Heterotrait-Monotrait (HTMT) ratio

Once the measurement model had been validated, the recommendations made by Henseler et al. (2016) were applied in order to ascertain the model's overall fit (SRMR < 0.056) as well as its relevance and predictive validity (R^2 = 0.617, adjusted R^2 = 0.615 and Q^2 = 0.393). Finally, Figure 2 shows the significance of the structural relations and the beta coefficients (β).



β: 0.124 ***

β: 0.068 **

β: 0.697 ***

Note: β: beta coefficient; ***p<0.01; **p<0.05; n.s. Non-significant

Figure 2. Results of the estimated structural model

The results to emerge from the proposed model indicate that hypothesis H1, which conjectures a positive relation between perceived self-efficacy and compatibility (β: 0.020; $p > 0.050$), should be rejected whereas the positive and significant effect of innovativeness (β: 0.124; $p < 0.000$), involvement (β: 0.697; $p < 0.050$) and perceived entertainment (β: 0.697; $p < 0.000$) on compatibility should be accepted. Hypotheses H2, H3 and H4 are not rejected.

Following the recommendations of previous studies addressing compatibility with the mobile (Ozturk et al., 2016), the demographic features of the subjects in the sample (gender, age, and educational attainment) were included as control variables. The control variables were seen to have no significant effect on the dependent variable ($\beta_{gender\text{-}compatibility}$: 0.002; $p > 0.10$; $\beta_{age\text{-}compatibility}$: 0.001; $p > 0.10$; $\beta_{studies\text{-}compatibility}$: 0.007; $p > 0.10$) and their inclusion led to a non-significant increase in R^2 ($R^2 = 0.630$), thereby reducing the risk that the significant relations found (Figure 2) might have been due to other causes (Chin, 2010).

3.3. Complementary analysis depending on the type of product purchased

Although it was not the primary objective of the present study to ascertain whether the type of product (digital or non-digital) purchased by subjects using their mobile led to any differences in the proposed model, it was posited as a complementary question a-posteriori. By addressing this complementary objective, and by conducting a multigroup analysis using the SmartPLS3 program, the aim was to rule out the possibility that the type of product might have had an impact. The non-parametric PLS-MGA test for said analysis revealed no significant differences between the groups regarding the type of product purchased (Henseler et al., 2016). These findings indicate that there is no moderating effect regarding the type of product whilst also suggesting that the model might be generalized through categories of digital and non-digital products purchased vis-à-vis accounting for compatibility with mobile purchasing (Table 5).

Relación	Group (Digital): n=423		Group (Non-digital): n=160		PLS-MGA	
	β	t	β	t	|Diference|	p
Self-efficacy → Compatibility	0.009 $^{n.s}$	0.261	0.053 $^{n.s}$	0.889	0.043 $^{n.s}$	0.734
Innovativeness→ Compatibility	0.163***	3.919	0.056 $^{n.s}$	0.771	0.107 $^{n.s}$	0.099
Involvement → Compatibility	0.052 $^{n.s}$	1.29	0.096*	1.66	0.044 $^{n.s}$	0.714
Entertainment → Compatibility	0.692***	23.57	0.716***	14.32	0.024 $^{n.s}$	0.673
R^2 (Digital) Compatibility	0.627					
R^2 (Non-digital) Compatibility	0.642					

Note: β: beta coefficient; ***p<0.01; *p<0.10; $^{n.s.}$ Non-significant

Table 5. Results of the multigroup analysis with PLS

4. Discussion

The literature contains numerous examples of researchers who state that compatibility between the features of the mobile phone and users' life is a key factor in the adoption of mobile commerce (Oh et al., 2003; Wu and Wang, 2005; Lee and Jun, 2007; Lin, 2011; Tanakinjal et al., 2010; Chemingui and Ben Lallouna, 2013). Nevertheless, the question arises as to which factors generate this perception of compatibility. Given this variable's importance in the context of mobile commerce, the present research proves valuable in that, in contrast to the work undertaken to date, it does not examine the effect of compatibility on other variables (Chung, 2014; Hanafizadeh et al., 2014; Lin and Lu, 2015; Mohammadi, 2015; Shaikh and Karjaluoto, 2015; Jiménez and San Martín, 2017) but rather focuses on exploring which variables influence it. Specifically, this research aims to gain insight, within the context of mobile purchases, into the main drivers underlying the perception of mobile purchase compatibility and purchaser life. Thus, when embarking on the research, we posited four determinants of compatibility: two which are more intrinsic (self-efficacy and innovativeness) and two more extrinsic (involvement and entertainment).

An empirical analysis involving 583 Mexican mobile purchasers brought to light the positive effect of innovativeness, involvement and perceived entertainment, but not that of self-efficacy, on perceived compatibility with mobile purchase. The study shows that the influence of factors concerning the purchase analyzed herein carries a greater weight than the more personal factors addressed. The findings are in line with the extant literature on innovativeness (Sivanad et al., 2004; Aldás-Manzano et al., 2009), involvement (Aguirre et al., 2016) and entertainment (Ruíz-Mafé et al., 2010). If the mobile phone purchase proves entertaining, and clients engage in the purchase and are inclined towards innovations and technologies, they will feel that mobile purchasing fits in with their lifestyle, and is compatible with their way of life. In the case of self-efficacy, a consumer merely perceiving

that they have the skills and resources to buy using technologies might not be enough for them to feel that this kind of purchase is compatible with their life. It might be seen as a mandatory requirement to purchase but is not enough to give the feeling that mobile purchasing fits in with their individual behavior.

As regards the type of product purchased using the mobile, the exploratory analysis conducted as a complementary study merely reveals that the significance of the effect of innovativeness and involvement on compatibility with the mobile purchase might lead to certain differences in terms of whether digital or non-digital products are analysed, although this would need to be explored in greater detail in future works.

To sum up, the main academic contributions the present work makes are that it offers a pioneering study exploring the drivers underlying the perception of compatibility between mobile purchasing and consumer life, using information gathered from a large sample of Mexicans who engage in mobile purchasing. From a business perspective, there are also interesting implications.

In this line, certain important managerial implications to emerge from this work and which contribute to the transfer of knowledge from the academic to the business world. Specifically, this work helps mobile commerce firms to decide which type of public should be the target of their marketing as well as what kind of atmosphere they should generate in mobile commerce if they want to help consumers feel that purchases made using this new technology will be compatible with and fit in with their lifestyle. Turning to the role played by innovativeness, what would be recommendable, particularly for mobile commerce of digital products, would be to focus on those groups of users who, in line with Rogers' Diffusion of Innovation Theory (2003), require less time to adopt an innovation (firstly, innovators and early adopters, and then the early majority). Since consumers that show more innovativeness would be more willing to try out purchasing using the mobile and, might act

as opinion leaders to facilitate the spread of technologies amongst new groups of users. We have also seen which factor triggers the perception that mobile technology is compatible with consumer life. In this regard, public initiatives aimed at bringing the use of technologies closer to all kinds of consumers as well as teaching them how to use them would prove important as would any public and private campaigns informing of the latest innovations and technological developments to appear on the market. Those actions might help consumers to purchase through other means (such as mobile), either exclusively or in tandem with other channels. Multichannel and omnichannel strategies based on using various means to project an integrated image for the firm, coupled with making the various stages of the purchase as well as the different channels offered by the firm compatible, are becoming increasingly widespread in virtually all sectors these days (Melis et al., 2015).

As regards the variables related to the personality of the purchase, businesspeople should focus their efforts on users who are interested in mobile purchases and who enjoy interacting with technology. One way to do this would be through campaigns designed to attract and redirect more traffic towards mobile purchases based on retargeting which takes account of user involvement in the mobile purchase (Dholakia, 2001). In addition, providing detailed information concerning the products and services sold through mobile devices would help further client involvement in purchasing. Designing responsive websites is another effective strategy which can prevent potential mobile clients from abandoning a page due to the content of the information failing to adapt to the mobile format.

Finally, bearing in mind the close link between mobile and person (Ruíz-Mafé et al., 2010), firms should strive to create an atmosphere of fun in their mobile commerce which will allow users to feel at ease when making mobile purchases, as occurs with gamification. Not surprisingly, entertainment emerges in this study as the driver exerting the greatest influence on perceived compatibility. A design merged with special offers and games to

enjoy in groups might also make purchases more fun whilst at the same time fostering the spread of information amongst friends and acquaintances through the mobile.

As regards the study's limitations, the first point to be borne in mind is that data have only been taken from Mexican purchasers, which prevents the findings from being generalizable to other countries or cultures. As well, it should be pointed out that because our research into the drivers of compatibility is pioneering in the literature means that there might be other variables affecting compatibility that we have failed to take into account (such as mobile seller's reputation or website design or the user's own purchase experience), leaving ample scope for future lines of research. Lastly, the future inquiry should explore in greater depth any differences which might emerge due to the type of product or service purchased and should also seek to ascertain whether the model is generalizable to other sectors.

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Variable	Item	Item description
Self-efficacy	SE1[a]	Perception of possessing resources, skills, and knowledge to use the mobile to buy.
Innovativeness	Inn1	Active search for experiencing new ICTs.
	Inn2	Habit to be a pioneer in trying ICTs.
	Inn3	Likes to experiment with ICTs.
Involvement	Inv1	Interest in the products and services that are bought through the mobile.
	Inv2	High involvement with the purchase through the mobile.
	Inv3	Perception of getting involved with the mobile commerce environment.
Entertainment	Ent1	Perceived relaxation in the purchase through the mobile.
	Ent2	Perceived entertainment with purchase via mobile.

	Ent3	Perception of being busy when buying through mobile.
	Ent4	Enjoyment and pleasure perceived in the purchase through the mobile.
Compatibility	Comp1	Likes to make compatible the purchase of products and services with the use of mobile.
	Comp2	Affirmation that the purchase by mobile phone fits with the own lifestyle.
	Comp3	The perception of compatibility between mobile purchase and individual behavior.
	Comp4	The perception that the purchase by mobile is something necessary in the current life.

[a] Mono-item

Appendix. Items description