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Who relies on mobile payment systems when they are on vacation? A segmentation analysis

Abstract

Despite the growth of mobile phone use in travel planning, the number of tourists that adopt mobile payments (m-payments) is not high. As tourist trust in m-payment has been identified as an essential factor in m-transaction behaviour, this study contributes with a segmentation and a characterization of tourists based on their trust in m-payments. An online survey of Spanish tourists who use smartphones for travel purposes was conducted to collect the data. Utilizing cluster analysis, the data indicate that heterogeneity exists and that tourists can be classified into three segments depending on their trust in m-payments: tourists with high trust in m-payments, tourists with medium trust in m-payments and tourists with low trust in m-payments. Moreover, in terms of the characterization of these three segments, Pearson's Chi-square found that they show different demographic characteristics. While tourists who travel for pleasure three or more times per year, men, tourists aged between 25 and 34 and the self-employed are overrepresented in users with high trust in m-payments, tourists who travel for pleasure once a year, women and users older than 45 years of age are overrepresented in users with low trust in m-payments. The segments identified will allow tourism companies to adapt their m-payment strategies.

Key words: m-payment; trust; segmentation; tourism; cluster analysis; Spain

Introduction

In the first few years of the smartphone "boom," researchers saw the device as a resource offering ubiquitous access to tourism services in a simple way, at any time and any place, to respond to what O'Brien and Burmeister (2003) called "the free independent traveler". Smartphones have become "ideal companions for travelers" (Ozturk, Nusair, Okumus & Hua, 2016), and this has led to a number of important research studies into the particular uses and applications of mobile technology in the tourism industry. For example, studies have defined the characteristics of: mobile tourist guides (Rasinger, Fuchs & Hopken, 2007), digital navigation systems (Rehr, Göll, Leitinger, Bruntsch & Mentz 2007), tracking tourists (Shoval & Isaacson, 2007), hotel reservation systems (Wang & Wang, 2010), Web-Based GIS in tourism information searches (Chang & Caneday, 2011), mobile apps (Kwon, Bae & Blum, 2013; Young Im & Hancer, 2014) and augmented reality (Chou & Chanlin, 2012), among others.

On the other hand, in the last few years, financial information systems (IS) have undergone developments that have contributed to the emergence of innovations in mobile payments (m-payments) (Liu, Kaufman & Ma, 2015). In this landscape, there is intense experimentation and investigation associated with the implementation of electronic bill payment processing and a parallel growth of industry-wide

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interest in this form of payment. Consequently, tourism organizations have started to offer consumers this new method of paying for their purchases of products and services. For example, to make their payments, tourists can use tourism organizations' mobile websites, mobile apps or Near-Field Communication based m-payments.

M-payments can be defined as any payment made by a mobile device where the payment is initiated, authorized and confirmed in an exchange of financial value in return for products or services (Karnouskos, 2004). Consumer adoption of m-payments is vital for the acceptance and success of this kind of new technological system. In addition, in spite of the number of mobile device users, the number of consumers that adopt m-payments is not high (Pinchot, Mishra, Poullet & Kohun, 2016). Nevertheless, and as far as the authors are aware, the reasons for this low take up of m-payments have not to date been identified, although the academic community considers this an important issue.

In this context, for the authors the role of trust in m-payments can be one of the main drivers that shape and define consumer behaviour in mobile transactions (Gao & Waechter, 2017). Consumer trust is essential for organizations in general since, without trust, users will not buy their services. However, for tourism organizations, in particular, it is of even greater importance, as tourists research services and events through smartphones, during their trip, and wish to make their payments as easily as possible, through mobile payment systems. Despite the importance of m-payments in tourism, there has been no research into the personal characteristics of tourists who will, naturally, while they are actually on the move, have different levels of confidence in m-payments. The aim of this paper is to fill this gap by researching tourist characteristics according to their level of trust in m-payment. Companies need to understand tourist behaviour to help adapt their segmentation strategies.

This article is structured into an introduction and three sections. Following our introduction, the second section reviews the literature on m-payments in the tourism sector, taking into consideration the trust in, and consumer segmentation associated with, m-payments. The third section presents the methodology used and the issues raised by the survey in the present study. The fourth section presents the results, after the application of a cluster analysis that was used to aid in the characterization of the tourist segments based on their trust in m-payments. And the final section concludes with a discussion and a review of practical implications.

Theoretical framework

M-payments

In the last decades mobile technology has become common in our lives but the adoption of m-payment is not high (Dahlberg et al., 2015; Pinchot et al., 2016). For example, Starbucks is considered as an example of success in introducing m-payments but its "Mobile Order & Pay" application was used in only 7% of its US sales in September 2016 (NFC World, 2016).

According to Liu et al. (2015), the evolution of the m-payment started in 1997 with "vending machines with SMS payments" and "Mobile phone-based banking services", both introduced in Finland. Dahlberg et al. (2015) analysed m-payments over the eight years between 2007-2014 and concluded that researchers focus mainly on two topics: consumer adoption and technological aspects (as they had already identified in a previous work covering 1998-2006 (Dahlberg, Mallat, Ondrus & Zmijewska, 2008). The same authors note that "few consumers were able to experience m-payments" (Dahlberg et al., 2015, p. 265) and that the investigation of consumer adoption in isolation would provide only a limited understanding of m-payments.

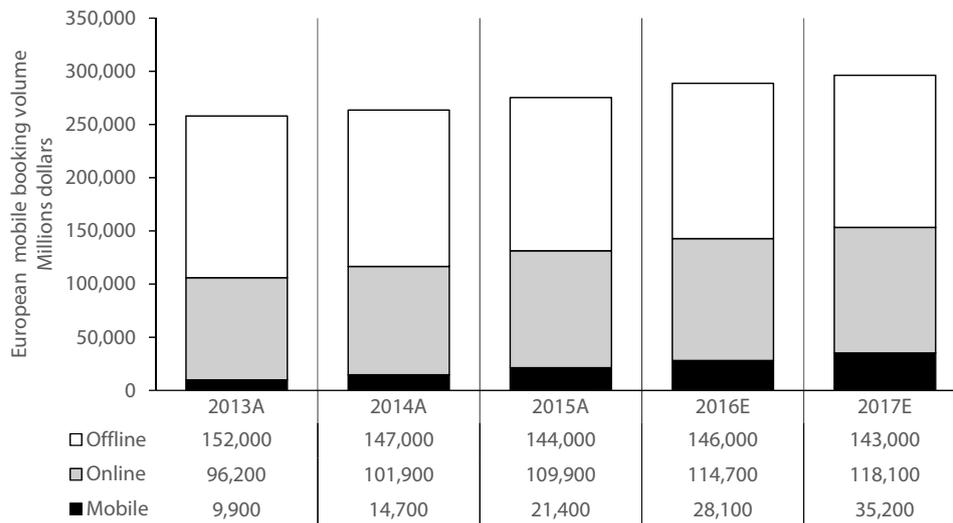
M-payment consumer adoption has been analysed in several studies (Dahlberg et al., 2015). The main areas identified are: consumer preferences and the reasons to use or not use a specific technology. The consumer adoption of m-payments is vital for the acceptance and success of this kind of new technological system; the authors identified the six most important adoption factors: trust, risk, demographics, security, perceived ease of use and perceived usefulness (Dahlberg, et al., 2015).

M-payments are changing the payment market, as new stakeholders enter this lucrative field and existing players try to defend their partnerships and positions. In this context, Hedman and Henningsson (2015) developed a framework that considers cooperation in the new competitive landscape of m-payments. Their framework considered the integration of cooperation in m-payments ecosystems, in an environment where competition and collaboration coexist. This framework also contributes to increasing the defensive capabilities of the stakeholders, both for those who are already successful and have the advantages of efficiency and company positioning with suppliers, as well as the new players who can apply strategies of destabilization to undermine the economic power of their competitors. However, the challenge regarding the understanding of consumer behaviour still exists, particularly with regard to the personal characteristics that influence adoption.

M-payments in tourism

M-payments in tourism represent a mobile service which has the potential to increase in popularity and in the number of its transactions. However, although m-payments appear to have the potential to be among the more popular of mobile services, their acceptance has not been as high as investors would have hoped. In this sense, few studies have been conducted on the key determinants of consumers' acceptance of m-payments (Cobanoglu, Yang, Shatskikh & Agarwal, 2015).

Figure 1
European travel bookings



Source: Dealroom (2016).

Mobile technology now plays an important role in determining tourist behaviour (Kim & Kim, 2017); the use of mobile devices has increased in the last years and with this increase the number of those devices supporting communications has also increased. This kind of technology opens new opportunities for the various stakeholders in tourism from the destination level to the traveller level (Peng, Xiong &

Yang, 2012). According to Dealroom (2016), as can be observed in Figure 1, mobile transactions in the tourism sector are still in an initial phase because currently they represent only 15% of total on-line volume, although this is expected to grow rapidly. Similarly, some studies demonstrate that m-payments will change the tourism distribution system in the near future (Vallespín & Molinillo, 2014).

From the tourist's perspective, m-payments can be associated with decision-making related to purchasing specific travel products and services (Kim & Kim, 2017); for example, the purchase of airline tickets, accommodation, car rental services and tour packages. However, lack of tourist trust can be one of the most important barriers to the success of tourism mobile payment systems (Gao & Waechter, 2017). Lamsfus, Wang, Alzua-Sorbazal and Xiang (2015) highlight the influence of personal characteristics in understanding the use of mobile technology in tourism, and Chen and Wu (2017) investigated the factors which affect user satisfaction when using the m-payments system, among others.

Trust in m-payments

M-payment technology is an electronic payment evolution, where trust is important for consumer adoption. In part, if compared to online payments, m-payments can be considered as less safe due to their vulnerability to information attacks (Zhou, 2011). M-payments involve the consumer sharing his or her bank account and financial data, which may have associated information and technology risks. Moreover, although technology advances have increased the smartphone's ease of use and responsiveness, screen size can make the effort of making the payment more difficult and less safe. There is always a risk element in purchasing using a mobile device, be it a technological or information risk, so trust is here obviously very important and contributes to the establishment of the reputation of the mobile payment. These risks are uncertain but significant to the user, which stimulates interest in information systems and consumer behaviour research.

In this context, lack of user trust has been identified as the most important barrier for the success of electronic payments (Chandra, Srivastava & Theng, 2010). Similarly, in the context of m-payments, the lack of user trust has been identified as the most significant variable for the adoption of m-payment (Gao & Waechter, 2017).

Trust can be defined as one party's confidence in an exchange partner's reliability and integrity (Morgan & Hunt, 1994). Trust is a complex concept, which can be defined by predictability, reliability, fairness, benevolence and integrity, taking into consideration the Social Exchange Theory (McKnight, Choudhury & Kacmar, 2002). On the other hand, Trust Transfer Theory has been put forward in information systems (IS) studies to explain the consumer's trust in technology; this can be subdivided into cognitive trust and emotional trust in explaining intention to use (Gong, Zhang, Zhao & Lee, 2016).

As previously mentioned, in m-payments users face higher risks because of the wireless environment (Nilashi, Ibrahim, Mirabi, Ebrahimi & Zare, 2015). To facilitate our research, the trust concept is subdivided in two categories for m-commerce activities (Hillman, Neustaedter, Bowes & Antle, 2012): hard trust, also called trust in mobile technology, and soft trust or trust in mobile vendors (Siau & Shen, 2003). Hard trust is associated with technological architecture and the secure interactions provided by the technologies while soft trust is centred on the privacy of personal information transmissions and vendors' quality of service (Head & Hassanein, 2002; Hillman & Neustaedter, 2017; Nilashi et al., 2015). In terms of the trust associated with mobile vendors, this can also be subdivided into initial trust and on-going trust. Initial trust does not depend on prior experience and is temporary (Gao & Waechter, 2017).

Gao and Waechter (2017) identify in their theoretical model of user adoption of m-payments three potential trust facilitators (perceived system quality, perceived information quality and perceived service quality) and one potential trust inhibitor (perceived uncertainty). These authors also include in their model initial trust as a multidimensional construct. Initial trust includes: perceived ability ("m-payment service providers have the knowledge and expertise necessary to fulfil their tasks"), perceived integrity ("m-payment service providers keep their promises") and perceived benevolence ("m-payment service providers are concerned with users' interests") (Gao & Waechter, 2017, p. 531).

According to Nilashi et al. (2015): security (security features, privacy policy statements, payment systems security and site authentication), design (navigability, customizability, understandability and multi-media capability) and content (accuracy of content, currency of content, completeness of content and relevance of content) are the factors which most influence the customer's trust. The following section will analyse the particular importance of socio-demographic characteristics for the m-payments system.

Consumer segmentation in m-payment

Consumers do not adopt innovations in the same way or in the same timescale; rather, different user profiles can be identified (Rogers, 1995), as in the case of technological innovations (Parasuraman, 2000). A review of the scientific literature revealed several studies considering the background of consumer groups (e.g. Correia, Oliveira & Silva, 2009) but did not find any study classifying tourists depending on their trust in m-payments.

As regards smartphone use in the tourism sector, we find some segmentation studies. For instance, the study conducted by Okazaki, Campo, Andreu and Romero (2015), which classifies Spanish travelers into four segments, based on when they use mobile apps for travel planning. This classification distinguishes the tourists who use these apps intensively for pre-travel and on-site travel information searches (savvies), those who use the apps in advance (planners), those who use the apps when they arrive at a destination (opportunists), and those who do not use the technology (low-techs).

Eriksson (2014, p. 17) identifies four types of mobile travel service users: "info-seekers," "all-rounders," "bookers," and "checkers." Young people are not very highly represented in the last three categories. Info-seekers search for travel information only on their smartphones, are 18 to 22 years old, usually men, have a high level of smartphone experience and will become all-rounders if their frequency of travel increases and usage costs decrease. All-rounders use smartphones for all proposed tourism activities; they are 23 to 50 years old, men who travel frequently and who have a high level of Internet experience. Bookers use smartphones only to manage reservations, they travel frequently, they do not usually search for travel information on their mobile phones and they have little Internet experience. Checkers are from 23 to 50 years old, men, and use their smartphones only for some tourist services, such as check-in; they will soon become all-rounders. In contrast, non-users are over 51 years old, women, and will become users if their travel frequency and online experience increase and financial barriers disappear.

Martínez, Castañeda, Rodríguez and Sabiote (2014, p. 371) segment tourists into four categories based on experience and their use of mobile applications: "enjoying their mobile," "convenience seekers," "disconnected from tourism" and "low profile users." Those who "enjoy their mobile" frequently use applications for all kinds of tourism activities and are mostly young people under the age of 24 who have studied at university; "convenience seekers" make more limited and selective use of apps than the prior segment, and are usually between 25 and 34 years old; people "disconnected from tourism" use apps most frequently in their daily lives, but not necessarily for tourism, and are mostly between

25 and 44, men, with secondary school or advanced studies; "low-profile users" have little experience with apps in their daily lives, are more usually over 45 years old, and undertook only secondary school education.

Recently, Sands, Ferraro Campbell and Pallant (2016) examined consumer behaviour across the buying process during travel planning. They find five segments, "the anti-mobile/social media", "the multichannel enthusiasts", "the social media enthusiasts", "the Internet focused, anti-mobile" and "the Internet focused, multichannel enthusiasts". Their results show a polarization in the use of mobile channels and no differences among the segments in gender, age or income.

Khalilzadeh, Ozturk and Bilgihan (2017) examine the moderating role of demographic factors in the determinants of m-payments in the restaurant industry. They conclude, among other things, that "younger generations are immune to social distrust" (Khalilzadeh et al., 2017 p. 471) and that acceptance of m-payments is different for males and females.

On the other hand, some studies related to trust in m-payments do exist. These investigate the influence of various segmentation variables in different proposed models. For example, Chandra et al. (2010), to explore the intriguing non-significant relationship between "consumer trust" and "perceived usefulness", investigated not only "mobile technology characteristics," but also "mobile service provider characteristics". In addition, they conducted sub-group analyses to define the importance of formulating differential strategies for different user groups with a view to fostering better "trust for m-payment systems" in these groups. They consider their work as a starting point for formulating segment specific strategies for different potential adopter groups. The groups created were "users of Internet banking", "users of mobile Internet," and "non-users of mobile Internet." The work of identifying different segments with the aim of developing different strategies is not limited to this study; Lu, Yang, Chau and Cao (2011, p. 401) also thought it important to "understand the different behaviours among different groups of customers in m-payments services adoption and take different measures to manage them".

In addition, Mingxing, Jing and Yafang (2014) considered gender, age and education as demographic variables and concluded that the most important variables influencing the consumer's intention to use m-payments are user trust in mobile operators and trust in mobile application service providers. However, the user's trust in financial organizations has no significant influence. Gao and Waechter (2017) considered it important to analyse the influence of demographic characteristics on user adoption of m-payments services, and looked at gender, age, education, annual income, occupation and mobile Internet experience, although none of them have a significant effect on usage intention. The adoption of m-payments was also analysed by Gong et al. (2016), who consider that gaining the consumer's initial trust is crucial for m-payments. In particular, they analysed two perspectives, emotional trust and cognitive trust, and concluded that emotional trust has a much stronger effect on the consumer's intention to use. They advise that m-payments systems should develop the consumer's emotional trust by, for example, designing identical m-payment operational interfaces and similar processes to those that feature on their websites. These authors discuss user characteristics along the same lines as Gao and Waechter (2017) but refer to "mobile internet experience" instead of "web payment experience".

In the present study, in which we consider tourist trust in m-payments and their demographic characteristics, a segmentation analysis is proposed.

Methodology

The research data was collected through a web survey in which 456 regular smartphone users voluntarily participated. Convenience sampling with quota sampling methodology for gender and age was carried out (San Martín & Herrero, 2012). To determine gender and age distribution, the study "Mobile in Spain and in the world", conducted by Ditrencia (2015), was used. The socio-demographic characteristics of the sample are presented in Table 1.

Table 1
Sample characteristics

Variable	Values	Sample (n = 456)
Gender	Male	230 (50.4%)
	Female	226 (49.6%)
Age	18-25	111 (24.3%)
	26-35	131 (28.7%)
	36-45	105 (23.0%)
	46-55	73 (16.0%)
	56-65	36 (7.9%)
Marital status	Married	168 (36.8%)
	Single	179 (39.3%)
	Widow/widower	5 (1.1%)
	Divorced	28 (6.1%)
Education level	Common-law partnership	76 (16.7%)
	Primary school studies	16 (3.5%)
	Secondary school studies	168 (36.8%)
	University studies	187 (41.0%)
Occupation	Postgraduate studies	85 (18.6%)
	Unemployed	42 (9.2%)
	Self employed	53 (11.6%)
	Employed	226 (49.6%)
	Non-university student	9 (2.0%)
	University student	105 (23.0%)
	Retired	12 (2.6%)
Income per month	House worker	9 (2.0%)
	Less than 600 €	42 (9.2%)
	Between 601- 1,200 €	79 (17.3%)
	Between 1,201 -1,800 €	87 (19.1%)
	Between 1,801 -3,000 €	143 (31.4%)
	Between 3,001 -5,000 €	78 (17.1%)
Number of trips taken per year for pleasure	More than 5,001 €	27 (5.9%)
	Once a year	128 (28.1%)
	Twice a year	164 (36.0%)
	Between 3 and 4	132 (28.9%)
	More than 5	32 (7.0%)

The online self-administered questionnaire was made available to the sample on different social networks, including Facebook and Twitter. It is important to note that the sample consisted of users/consumers with the following 3 characteristics: they had travelled in the previous year, they confirmed that they travel regularly at least once a year and they have a smartphone.

The questionnaire contained a series of classification questions regarding the tourists' demographic characteristics: gender, age, marital status, education level, occupation, income and number of trips taken per year for pleasure. Additionally, we used a version of trust in m-payments scale. The six-item scale was adopted from Chong, Chan and Ooi (2012) (Table 2). The questions are presented as statements on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

The concept of market segmentation requires considering a heterogeneous market as a number of smaller homogeneous markets responding to differing preferences, which are attributable to the customers' desire for more precise satisfaction of their varying interests (Smith, 1956). Therefore, different market segmentation strategies are developed to increase customer satisfaction and the company's expected profits or effectiveness so that the consumers' economic benefits exceed the costs of the segmentation process (Chiu, Chen, Kuo & Ku, 2009; Hung & Tsai, 2008).

Results

Cluster analysis techniques were used to identify market segments in terms of trust in m-payments. Both hierarchical and non-hierarchical algorithms were used for the selection of the final cluster solution, thereby obtaining the benefits of each (Hair, Anderson, Tatham & Black, 2007). The Squared Euclidean distance was taken to measure dissimilarities, and Ward's method for the hierarchical procedure, concluding that three was the appropriate number of clusters. As shown in Table 2, the following classification was obtained: the first group comprises 117 tourists that show a low level (score about 2) of trust in m-payments; the second, and largest group, is formed by 188 tourists with a medium level (score about 4) of trust in m-payments; and finally, the third group includes 151 tourists with mean values around 6 showing a high level of trust.

Table 2
Summary of cluster analysis results. Mean values

	Low trust (n = 117)	Medium trust (n = 188)	High trust (n = 151)
1. Payments made through m-payment will be processed securely	3	4	6
2. Transactions via m-payment are secure	2	4	6
3. I am confident with the security measurements offered by m-payment websites	2	4	6
4. Privacy on m-payment is well protected	2	4	6
5. I am not worried about providing credit card information for m-payment transactions	1	3	5
6. M-payment is as secure as any e-commerce website	2	4	6

Once the presence of the three clusters had been established, their characteristics were distinguished. To that end, Pearson's Chi-square was analysed (see Table 3) and it was concluded that the clusters are independent of the values of the variables education levels, income and marital status as the Chi-Squares have associated p-values greater than 0.1. On the contrary, gender, age, occupation and number of trips taken per year for pleasure are significant. Cramer's V shows that significant variables can be arranged according to their influence, in the following order: occupation, gender, age and number of trips taken per year for pleasure.

Table 3
Test for independence.
Trust in m-payments and demographic characteristics

	Pearson's chi-square	Cramer's V
Gender Sig.	11.28 (2) 0.004	0.157 0.004
Age Sig.	16.77 (8) 0.033	0.136 0.033
Education level Sig.	6.183 (6) 0.403	0.082 0.403

Table 3 Continued

	Pearson's chi-square	Cramer's V
Occupation Sig.	26.16 (12) 0.010	0.169 0.010
Income Sig.	7.79 (10) 0.649	0.092 0.649
Marital status Sig.	5.991 (6) 0.424	0.081 0.424
Number of trips taken per year for pleasure Sig.	12.22 (6) 0.057	0.116 0.057

Finally, contingency tables for polarised groups were built (see table 4), showing significant differences between polarised segments (group with low trust versus group with high trust). The percentage of tourists in the segments for gender varied notably. Compared with the proportion in the total sample, men significantly outnumbered women in "tourists with high trust" in m-payments (61% vs. 39%) while women were overrepresented in "tourists with low trust" in m-payments (59% vs. 41%). In terms of age, the groups were notably different. For example, tourists between 26 and 35 years of age are more prone to trust in m-payments while tourists between 46 and 55 years old tend to show low trust. Differences between groups related to occupation are also observed. For example, "tourists with low trust", included the highest percentages of house workers and university students, while "tourists with high trust" included the highest percentages of the self-employed. Finally, "tourists with high trust" in m-payments included the highest proportion of people who travel more than 5 times a year while people who travel just once a year are overrepresented in "tourists with low trust". Moreover, in "tourists with low trust", people who travel 3 or 4 times per year are underrepresented

Table 4
Characterization of the segments

Demographic characteristics		Tourists with low trust in m-payment	Tourists with high trust in m-payment	Total
Gender	Man	41.0%	60.9%	50.4%
	Woman	59.0%	39.1%	49.6%
Age	18-25	25.3%	21.9%	24.3%
	26-35	17.9%	33.1%	28.7%
	36-45	25.6%	27.8%	23.0%
	46-55	19.7%	11.9%	16.0%
	56-65	11.1%	5.3%	7.9%
Occupation	Unemployed	7.7%	10.6%	9.2%
	Self employed	9.4%	14.6%	11.6%
	Employed	48.7%	53.0%	49.6%
	Non-university student	0.0%	2.0%	2.0%
	University student	28.2%	18.5%	23.0%
	Retired	0.9%	0.7%	2.6%
	House worker	5.1%	0.7%	2.0%
Number of trips taken per year for pleasure	Once a year	33.3%	20.5%	28.1%
	Twice a year	39.3%	37.1%	36.0%
	Between 3 and 4	22.2%	31.8%	28.9%
	More than 5	5.1%	10.6%	7.0%

Conclusions and implications

Some authors have pointed out the role of trust or, indeed, the lack of trust, as being the principal barrier to m-payment adoption (Ditrendia, 2017) and, although it is important for tourism organizations to better understand who trusts or who doesn't trust in mobile commerce, in terms of traveller characterization the literature is scarce.

To close this gap, this study segments different groups of tourists while they are actually on the move. We have identified different segments of m-payment consumers so as to maximise the opportunities of the suppliers/providers. The travellers are classified according to their trust in m-payments and their socio-demographic characteristics are described. Our findings seem consistent with previous research in which gender, age, occupation and number of trips taken per year for pleasure show different behaviours (Eriksson, 2014; Martínez et al., 2014; Khalilzadeh et al., 2017). Contrary to expectations, education, income and marital status are not related with trust in m-commerce.

In this context, we conclude that tourists can be segmented into three groups depending on their trust in m-payments. The main findings seem to suggest that Spanish tourists show medium trust in m-payments; "tourists with medium trust in m-payment" represents 41.22% of the sample and the extreme segments are more or less similar in their proportions. However, if results are polarised and we eliminate "tourists with a medium trust in m-payments", we find two extreme groups described (first and third cluster).

The first segment we name "tourists with low trust in m-payment". This segment represents 25.65% of the sample and is formed by tourists that predominantly travel for pleasure only once a year, includes more women and is usually older than 45 years of age. The third segment we name "tourists with high trust in m-payment" and represents 33.11% of the sample. These are tourists who travel for pleasure normally three or more times per year, tend to be men, mainly aged between 25 and 34 and are predominantly self-employed.

Chen and Wu (2017) recommend that all businesses should actively adopt m-payments and be capable of accepting them anytime and anywhere. The results summarized above reinforce the importance of increasing tourist trust in m-payments to achieve success. M-payments are changing the tourism distribution system and the results of this study permit the analysis of the emergence of the new wave of tourism consumers who use m-payments. This can allow tourism organizations to better develop a mobile presence through m-payments and design strategic campaigns based on their customers' profiles. M-payment is a technology that can bring efficiency to tourism organizations and this study can help them to improve their services. Tourism organizations should make a particular effort to convey to men who travel for pleasure three or more times per year, aged between 25 and 34, and are self-employed, the benefits of using m-payments (Malaquias & Hwang, 2016); as, the more users who adopt this system, the more that others will consider it to be safe and reliable, as frequency of use will contribute to increasing confidence in m-payments (Chen & Wu, 2017). To maintain a high level of trust in m-payments, managers might customize and personalize their m-payment systems, including automatic adaptation of their mobile interfaces and content.

This study has certain limitations that suggest interesting lines for future research. First, our focus has been on trust in m-payments rather than on the actual use of m-payments. Although many studies have demonstrated that gaining consumer trust is the first step towards actual use, future analyses should include m-payment usage as a variable. Another limitation is the general definition of m-payments used in this study. In that sense, our study has focussed on m-payments in general, and not on the use of any specific technology.

For future research, it would be interesting to analyse trust in different types of m-payment technologies such as NFC, QR m-payments systems or mobile applications. It would also be desirable to analyse resistance to change; that is, the profiles of tourists that don't trust in m-payment. In this regard, Sheith (1981) believes that the habits associated with an existing practice are the most powerful determining factors in creating resistance to change. Another potential line of research could be to study how the habits associated with the use of other devices and channels as part of the tourist experience affect trust in m-payments.

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