# Customers' Predisposition to Use Mobile Banking: Resource's Availability is Decisive

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**Abstract**

The mobile banking channel, although thriving, has been characterised by features such as lack of information or difficult accessibility to direct advice in the mobile communication between clients and banks, making clients' use of mobile banking services challenging. The failure of mobile banking to provide some traditional banking services is considered a shortage, further leaving negative consequences on mobile banking usage. Thus, in the attempt to understand and mitigate these negative effects, with data from 1429 actual mobile banking clients, this study identifies the adverse influence of the mobile banking inadequacies on clients' satisfaction, permission-based mobile marketing tendencies and word-of-mouth. With the idea to overcome the limitations to the mobile banking use, two groups of clients were distinguished, recognising that positive or negative relations are stimulated in accordance with clients' perception of the importance of ubiquity, as the unique mobile banking attribute.

**Keywords**

Mobile banking; m-banking; resources; inadequacies; Resource-based Theory; RBT; ubiquity; satisfaction; permission-based marketing; word-of-mouth; WOM; perceptions; m-commerce; u-commerce.

## 1. Introduction

In the last few years, mobile banking (m-banking) has been increasingly implemented by most of the banking entities, as a channel that provides the traditional services (e.g. money transfer, checking deposit or paying bills), but more conveniently and efficiently. What is more, m-banking also introduces new electronic services, like virtual personal banking consultant, services that enable money transfer and withdrawal to/from automated teller machines (ATMs) without a card, and even payment without a card, only by using an app, usually known as a mobile wallet. Uniquely, this channel is underlined by the possibility of carrying out all these tasks ubiquitously. M-banking is characterised by convenience, speed, and ease of use and has

been considered an innovation because of the implementation of mobile devices for completing commercial or non-commercial banking transactions, without the time and place constraints (Lv, 2011; Lu et al., 2015; Alalwan et al., 2018).

The attributes of the service and the delivery channel are those that create value for clients and influence their experience and preference of the same (Laukkanen, 2007; Dapp, 2017, Rodríguez-Torrico et al., 2020). However, although they are meant to improve the service and communication, sometimes they are perceived negatively by clients (Medina-Molina et al., 2019). Particularly since the new technologies implementation in the banking sector, clients have been experiencing incidents with entities, related to the mobile channel convenience, the information accuracy or the mobile service features (Jun and Palacios, 2016). This happens as a result of a negative perception of the service, known to leave a stronger and longer impression on clients, leading towards negative perception about m-banking, such as inadequate service (Falk and Fischbacher, 2006). Given that this circumstance will certainly disrupt the client's relationship with the entity, it is essential to prevent it from happening. Because of that, it was considered important to study how to mitigate the negative effects that some m-banking characteristics might have on clients' behavioural intentions, to assure a close and steady B2C (business-to-consumer) relationship. Consequently, the general research question that drives this investigation proposes to study: how the absence or critical banking service characteristics can impact clients' m-banking usage tendencies?

In line with m-banking characteristics research, the literature alludes to the importance of observing customer adoption, satisfaction and behaviour in m-banking, necessary for achieving m-banking continuous usage (Lu et al., 2015). Satisfaction has been considered especially important, given that it drives clients to participate in further actions, such as word-of-mouth (WOM) and permission-based marketing activities, finally stimulating a continuous relationship with the company (Shaikh and Karjaluoto, 2015; Trabelsi-Zoghlami et al., 2018). In view of this, it was recognised that in order to distinguish m-banking from the rest of the banking channels, banking entities would have to foresee clients' needs. However, it is also crucial for them to anticipate some differential characteristics that would add value to m-banking (Dzogbenuku, 2013; Prodanova et al., 2015; Chang et al., 2020). Such a unique attribute for the mobile channel is considered to be ubiquity (Rammler, 2017).

Accordingly, the objective of this research is threefold: (a) to determine the influence of underdeveloped m-banking aspects, such as entity's deficient resources, on clients' satisfaction, willingness to receive permission-based mobile marketing (PBMM) and WOM activity; (b) to observe how the last three variables are interrelated between each other; and (c) to contemplate the moderating effect of m-banking ubiquity. The idea is to fill the gap arising from the lack of knowledge about clients' perception of m-banking inadequacies and recognise clients' practices, which will result in benefits for customers in the sense that they could be individually addressed by the banking entity (Dapp, 2017).

The conclusions of this research offer recommendations on how to manage m-banking inadequacies for the B2C relationship not to be harmed, by maintaining clients' satisfaction, WOM and PBMM activities positive. Moreover, here are explored the changes that clients' perceptions of m-banking ubiquity generate in their m-banking behaviours.

## 2. Literature review

### *2.1. Resource-based Theory*

Given the recurring question about why some companies succeed and others do not, the body of knowledge of different disciplines has generated many concepts in the attempt to offer a conclusive framework. In this process appears one clear argument, that for a company to be outstanding and establish stable relationships, it should focus its strengths on the inside of the company, rather than on its competitive environment (Barney et al., 2011). Namely, companies'

resources are given a major relevance in facilitating the battle of achieving high performance and competitive advantage. This reasoning is best explained through the Resource-based Theory (RBT), determining that a company's tangible and intangible resources indicate its identity and relationships (Wernerfelt, 1984; Barney, 1991). The tangible assets are the physical resources, which can be easily imitable, while the intangible assets refer to human resource, knowledge, skills or strategies that provide heterogeneity and contribute to the companies' superiority at the market. The RBT argues that the intangible resources which are valuable, rare, inimitable and non-substitutable are essential for approaching the company's uniqueness (Barney, 1991; Ichsan et al., 2017). Consolidate human resource, product/brand development and market-related activities on these kinds of resources will impact the desired distinction in the long term (Cardona, 2011).

Having all this in mind, it is implied fundamental to observe how intangible resources could influence the generation of a favourable B2C relationship. Precisely for the banking entities, it has been deemed vital to create, integrate, complement and adapt their resources as a response to customers' demands and market changes, especially in environments of new technologies (Eldin et al., 2016; Ichsan et al., 2017).

In the m-banking research, several authors have pointed out the necessity of studying the intangible elements of the service, especially focusing on the negative effect of m-banking barriers, as an essential aspect that once overcome will enhance the B2C relationship (Alalwan et al., 2016, Medina-Molina et al., 2019). In this sense, it has been considered in the literature that if clients' task is not directly related to m-banking benefits (e.g. fast, convenient and ubiquitous transaction), they could not perceive m-banking as a useful channel with improved performance. They will, then, opt for the adoption of other alternative services such may be Internet banking, ATMs or traditional office banking services. From here, the importance to study m-banking attributes, as the intangible resources, which -if absent- could obstruct achieving a long-lasting relationship with m-banking users, including the creation of clients' satisfaction, PBMM attitudes, and WOM activities (Lu et al., 2015; Zoghlami et al., 2018).

The previous research of negative effects of electronic banking services is associated with deficiency of resources, such as lack of security and misuse of the privacy policy, information unavailability, failure to update the information or a dearth of credibility (Poon, 2008; Dapp, 2017), while these limitations in the m-banking sector, precisely, are rather focused on customers' perceptions, such as perceived risk, resistance to change, perceived transaction costs or certain socio-demographical characteristics (Lwin et al., 2019; Malaquias and Hwang, 2019; Rehman and Shaikh, 2020). These unfavourable aspects provoke uncertainty in clients and a belief that certain services are not well achieved. Namely, when it comes specifically to the m-banking channel characteristics, the negative influences on clients' adoption and use of this service usually refer to problems in understanding the practicality of the channel, the difficulty of use because of incomplete information, the absence of personal interaction and advice, or the unavailability of cash (Shohag, 2013; Vyas and Raitani, 2014; Laukkanen, 2016).

Furthermore, when clients perceive that their sacrifices are higher than their benefits, they will no longer perceive the advantages but will recognise and focus on the inadequacies of the service. In view of that, perceived shortcomings about effort, delivery and contact dimensions related to specific service usage are negatively perceived by clients (Berry, 2002). The intangible resources related to technology and people interaction become critical for companies to create an advantage, converting the lack of resources into one of the most criticised aspects of m-banking (Kazan et al., 2018). Hence, the deficiency of resources, such as poor information about m-banking services, absence of personal advice, and unavailability of cash, has also been deemed as the inadequacy of m-banking (Shohag, 2013). Therefore, the main m-banking shortcoming scrutinised in this study is the resource absence, characterised by money

unavailability, lack of information and impossibility of advice, perceived by clients as m-banking resource-related inadequacies.

*2.2. Hypotheses development*

In a mobile technology context, satisfaction has been seen as a spontaneous response motivated by services, information and systems' dimensions and resulting in m-commerce related activities (Wang and Liao, 2008). It is defined as a "customer's post-consumption evaluation of a product or service" [Mittal and Frennea, (2010), p.3], and is considered to be updated after every new transaction (Jones and Suh, 2000). For that reason, clients' satisfaction with m-banking services has to be observed as an evaluation of the fulfilment provided by m-banking performance.

Service characteristics, companies' features and communication efficiency with the banking entity affect clients' satisfaction with m-banking (Shirsavar et al., 2012; Trabelsi-Zoghlami et al., 2018). According to the RBT research in m-banking, these services' technical and quality resources are the critical requirements necessary for achieving clients' satisfaction (Kingshott et al., 2018). More precisely, a balanced implementation of people, technology and process components, such as human resource, information, and performance capabilities, will result in clients' more effective decision-making and satisfaction (Kim et al., 2010). If clients' need for personal attention and advice when using m-banking services is not pleased, it will harm clients' satisfaction with the mobile service (Song and Hollenbeck, 2015). Then, lack of information and absence of personal advice and cash, are perceived as m-banking inadequacies that could negatively influence clients' satisfaction.

In fact, clients' satisfaction in m-banking will depend on their perception of m-banking inadequacies regarding B2C relationships and services (Sagib and Zapan, 2014). If clients perceive that the offer is inconvenient, it will decrease the generation of satisfaction (Choi et al., 2008; Wang et al., 2019). Thus, it is supposed here that if clients perceive an inconvenient service resulting from resource absence, their satisfaction will be reduced. The first hypothesis proposal is:

H1: Clients' perception of m-banking resource-related inadequacies negatively influences their satisfaction with m-banking services.

Permission-based mobile marketing enables mobile clients to have the "control of the types and volume of marketing messages they receive through their mobile phones" [Chung and Holdsworth, (2012), p.236]. Customers can express and specify their interest in receiving marketing communication, which qualifies companies to use that information about their preferences in tailoring interaction and personalised advertising (Brey et al., 2007; Im and Ha, 2013). Clients' willingness to engage in PBMM refers to their intention to receive marketing communications related to a product or service on their mobile phone and is considered essential in developing clients' behavioural intentions regarding mobile phone services usage (Sultan et al., 2009; Gao et al., 2013).

Clients' perception of the m-banking channel, its services and the interaction, is a key determinant of their mobile marketing (m-marketing) intentions (Rohm et al., 2012; Sagib and Zapan, 2014; Song and Hollenbeck, 2015; Manser Payne et al., 2018). Moreover, information, a possibility for advice, schedule issues such as timing and location, are likewise valuable motives for clients participating in PBMM activities (Watson et al., 2013). Incorporating resources in a way that they adapt to the dynamic markets and customers' needs will provide better communication and encourage continued participation in the B2C relationship (Cardona, 2011). Respectively, m-banking resource conditions affect customers' attitudes and behaviours, in a way that clients who appreciate a service, show an increased propensity to engage in PBMM actions (Lu et al., 2015; Krafft et al., 2017).

Contrary, if clients continuously notice interruption or unavailability of m-banking services, they will experience negative perceptions which will develop in reluctance to engage in marketing communication (Zhou, 2012; Vyas and Raitani, 2014; Oger et al., 2015). Ergo, in case the interaction with the company results inadequate for the client, his/her willingness to stay in touch of any means with the company will be conditioned (Hamidi and Safareeyeh, 2019). As a result, if clients perceive m-banking resources as inconvenient, their intention to engage in promotional communication with the bank will be threatened. The next hypothesis assumes that:

H2: Clients' perception of m-banking resource-related inadequacies negatively influences their willingness to receive PBMM from a bank entity.

The interest in WOM has been increasing in m-commerce literature since it has been commonly identified as an important factor that influences customer behaviour, especially in the ubiquitous electronic environment where it is more common for clients to rely on interpersonal communication (Tyufekchieva and Reichhart, 2018). For that reason, the need to study what motivates mobile clients to share WOM is amongst the prominent current research questions (Marinković et al., 2020). WOM is defined as sharing knowledge, experiences and opinions about products, services or companies, and has been observed as a critical factor for companies' success in the services sector, particularly in electronic and mobile banking services (Cambra-Fierro et al., 2017; Choudhury and Bhattacharjee, 2018, Trabelsi-Zoghlami et al., 2018).

In m-commerce investigation, it is confirmed that the satisfaction with mobile service drives clients to engage in WOM activities related to the service provider, especially encouraging them to recommend (Sivadas and Jindal, 2017; Shin et al., 2018). In m-banking services, clients' satisfaction influences their intention to recommend a service delivered by this channel (Sagib and Zapan, 2014), which is why it is essential for banking entities to find the best formula of employing their resources, so that customer satisfaction and long-term relationships can be assured (Kingshott et al., 2018). Additionally, clients' satisfaction has been extensively recognised as one of the fundamental determinants of clients' continuance intention and as a crucial factor in mobile communication services (Calvo-Porral and Lévy-Mangin, 2015; Sivadas and Jindal, 2017), meaning that, if clients are satisfied with m-banking service, they will show a propensity towards endorsement and interaction with the entity, in the form of WOM and PBMM. Following these arguments, the ensuing hypotheses are proposed:

H3: Clients' satisfaction with m-banking services positively influences their intention to emit WOM regarding these services.

H4: Clients' satisfaction with m-banking services positively influences their willingness to receive PBMM from a bank entity.

Permission-based marketing is seen as the most appropriate strategy for selling services and influencing clients' behavioural intentions, especially in mobile contexts (Im and Ha, 2013). Through the benefits of permission-based mobile interaction, companies catch clients' attention and contribute to engendering their communication and relationship with the firm (Salo, 2012; Kumar et al., 2014). In m-banking, continuous communication with the entity encourages clients to participate in further recommendation activities related to m-banking services, as the interaction between the clients and the company makes them cognitively, emotionally and socially dedicated to the company and its image, meaning clients' increased intention to share and recommend (Hamidi and Safareeyeh, 2019). When clients show a tendency to involve in PBMM, it results in service and brand-associated improved awareness, positive attitudes and increased level of bonding behaviours such as positive WOM (Grewal et al., 2016; Stocchi et

al., 2019). Based on this, it is proposed that clients who are willing to engage in PBMM will be more prone to emit WOM.

H5: Clients' willingness to receive PBMM from a bank entity positively influences their intention to emit WOM regarding m-banking services.

In the term mobile technology, mobile refers to the mobile devices' characteristic that enables information, communication and transaction activities to be done in movement (Stocchi et al., 2019). This specificity of mobile devices, determined as ubiquity, is found essential to mobile services because it gives clients the possibility of executing a variety of tasks anywhere and anytime, without the need of a wired network (Huggard and Mc Goldrick, 2013). Ubiquity endows bank entities a continuous interaction with clients and favours the delivery of personalised, timely and location-based offers, providing reliable and convenient mobile transactions (Grewal et al., 2016; Liébana-Cabanillas et al., 2017). In m-banking research, ubiquity has been considered the main advantage of the m-banking channel, removing spatial and temporal limitations, and allowing carrying out ubiquitous banking services (Zhou, 2012; Maroofi et al., 2013). It gives customers the possibility to use a highly extended banking service, by just a simple touch on the mobile app screen, without any ubiquity constraints (Fenu and Pau, 2015).

Clients' perception of ubiquity helps them in the evaluation of mobile services and shapes their attitudes and intentions related to m-commerce (Marinkovic and Kalinic, 2017). The location-free access to the service, the ability to react immediately to the emerging need and the time-saving opportunity, outline the contribution of ubiquity to m-banking services and offer companies greater access to their clients (Saeed, 2018). In the mobile services usage context, it has been suggested that ubiquity might play a moderating role, strengthening positive relationships (Chen et al., 2019). However, this impact could be, as well, conditioned by the actual task, personal preferences, experiences with the channel, perceived value or even satisfaction with the mobile service (Tojib and Tsarenko, 2012). In fact, clients could have different perceptions of the ubiquity benefits and varying higher or lower expectations regarding the crucial asset of the mobile channel, which might further determine their behavioural responses (Shin et al., 2018).

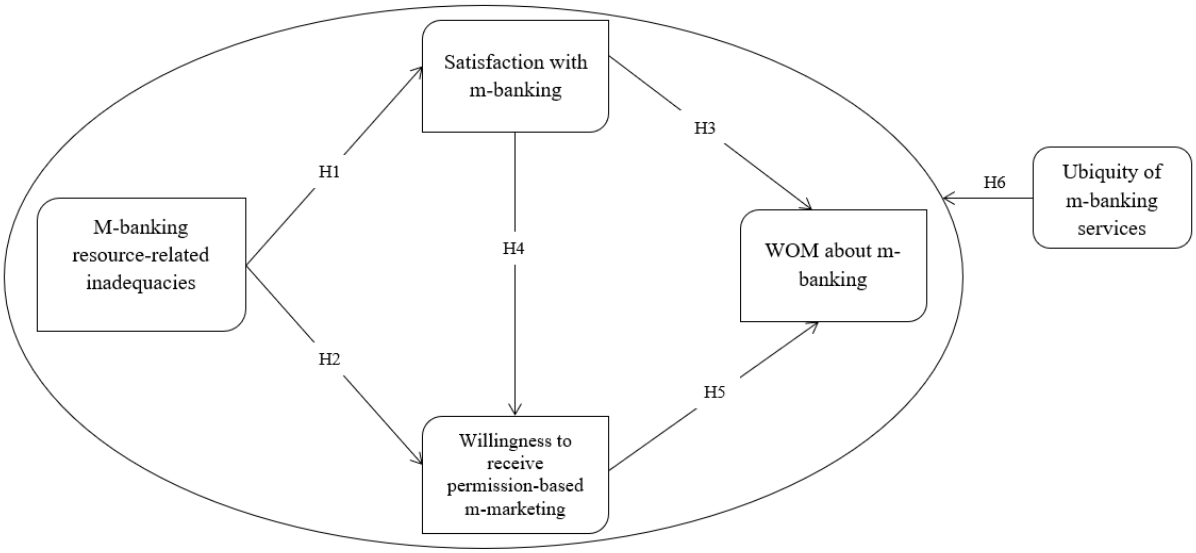
With this in mind, it was deemed relevant to determine how m-banking ubiquity will impact clients' responses, while identifying differences across clients regarding their ubiquity perceptions. Therefore, the last hypothesis is proposed:

H6: The client’s perceptions of the ubiquity attribute moderates the relationships proposed in H1 to H5.

*2.3. Proposed research model*

Attending the reasoning mentioned above regarding the influence of the m-banking resource-related inadequacies, characterised by the absence of traditional banking attributes, the RBT was applied to understand how to mitigate the negative consequences of those to clients' satisfaction, willingness to receive PBMM and WOM predispositions. In addition, to determine the role of m-banking ubiquity, as the original m-banking attribute, for different types of clients, depending on the level of appreciation of the ubiquity characteristic, a hypothesis is proposed regarding the distinction of relationships across clients’ perception of ubiquity. Subsequently, Figure 1 presents the relationships hypothesised in the proposed research model.

**Figure 1. Proposed research model**




## 3. Research methodology

*3.1. Sample and scales characteristics*

For the purpose of this research, data from 1429 Spanish m-banking clients were employed. Data were gathered by Banco Sabadell's (Spain) marketing department from a panel of m-banking clients of different banking entities[i], already prepared for this research. In this way, a rate of 100% valid responses was assured. This rate is due to previous interaction with all the m-clients in the bank database, who gave their authorisation to be contacted for marketing purposes, to express their predisposition to take a part in the same. Next, respondents were sent an online questionnaire with a query regarding their perceptions and preferences of m-banking services. The database used for this research was formed using secondary data on Spanish bank customers' behaviour, courtesy of Banco Sabadell, which is considered the fourth-best bank in the European Union, according to the 2018 EU-wide stress test by EBA (European Banking Authority) (EBA, 2018).

The relevant data on the subject of research show that, in Spain, banking is the most frequently used e-commerce service (53.4% of the Spanish Internet users), accessed via both mobile and fixed broadband (ONTSI, 2019a). Regarding the sample characteristics of this study, it can be concluded that the majority of m-banking clients are men, mainly at the age of 25 to 44 years (79.9%). Most of the clients have a university degree (72.2%) and are employed (83.3%). The most common income is higher than 1800€ per month (31.9%). There is a balance in the usage and non-usage of m-banking services ubiquitously. The demographic and socioeconomic profile of the sample described in Table 1, reveals consistency, in sense of gender and age, with the typical Spanish user of e-banking services, including the Internet- and m-banking (ONTSI, 2019b).

[Table 1 about here]

After a literature review considering relevant research about the electronic banking and m-banking crucial features, influencing factors and behavioural tendencies (Casaló et al., 2008; Lee and Chung, 2009; Santouridis et al., 2009; Koenig-Lewis et al., 2010; Wessels and Drennan, 2010; Ahmad and Al-Zu'bi, 2011; Aldas-Manzano et al., 2011; Saeed, 2011; Chung and Holdsworth, 2012; Song and Vong, 2013), the decision was made on the scales creation by the marketing department of Banco Sabadell (Table 2). The measurement scales employed to test the proposed model in this study contain one item for each considered variable: clients'

satisfaction ("Level of satisfaction with m-banking"), their willingness to receive PBMM ("Interest in personalised advertising regarding the products and services offered by the banking entity through m-banking") and WOM emission ("Degree of probability of recommending the m-banking to others as a shopping channel"), measured with 5-point Likert scales. Three dichotomous items were used to measure m-banking resource-related inadequacies. To measure m-banking ubiquity, clients were asked the following question: "In which places do you normally connect to the banking entity via m-banking?", having the possibility to answer by a multiple-choice, with "home", "work", "public transport" or "other places". The number of responses was used as a determinant of clients' perception of m-banking ubiquity.

[Table 2 about here]

*3.2. Analyses and results*

The methodology applied for the data treatment was the Partial Least Squares – Structural Equation Modelling (PLS-SEM), matching the suggested criteria for utilisation (Hair et al., 2018). Following the common procedure, the robustness of the measurement model was checked through reliability and validity estimations, and the explanatory power of the structural model was established. The significance and relevance of the path coefficients of the proposed relationships (H1-H5) and a multi-group analysis (H6) were estimated. The SmartPLS3 software was employed for the analyses (Ringle et al., 2015).

Per guidance by Hair et al. (2018), in the beginning, the reliability and internal consistency of the scales were tested (Table 3). And so were confirmed significant loadings at a confidence level of 95% ($t>1.96$) in all cases [ii], and Cronbach α and Composite Reliability (CR) coefficients higher than 0.7 and 0.6, respectively (Bagozzi and Yi, 1988). Then, the Average Variance Extracted (AVE) showed an adequate global quantity of variance (>0.5) for each item that is explained by the latent constructs (Bagozzi and Yi, 1988), by which convergent validity was corroborated [iii].

[Table 3 about here]

Next, it was required to confirm that $R^2$ of the dependent variables were higher than 0.1 (Falk and Miller, 1992). The values of $R^2$ for clients' satisfaction, willingness to receive PBMM and WOM fulfilled the requirement, showing values of $R^2=0.178$, $R^2=0.562$, $R^2=0.478$, respectively, indicating valid explanatory power of the model. Only then could be performed the causal model estimation, where all the proposed hypotheses were confirmed (Table 4).

[Table 4 about here]

Lastly, it was contemplated the H6, measuring the moderating effect of ubiquity. To detect if there were differences between distinct groups of clients regarding their perception of the ubiquity feature of m-banking (Sarstedt et al., 2011; Richter et al., 2016), a multi-group analysis was carried out as recommended by Hair et al. (2018). Two groups of clients were created. The first group consists of 691 (48.6%) individuals who indicated at least three of the proposed options to connect to m-banking (home, work, public transport or other places), meaning that they ubiquitously use m-banking. They are considered as clients who appreciate m-banking ubiquity characteristic and, for the purpose of this research, are named "ubiquitous clients". The second group involves 738 (51.4%) individuals who specified only one or two options and are treated as clients who do not consider ubiquity as an important m-banking characteristic (named "non-ubiquitous clients") because they do not use it ubiquitously.

The multi-group analyses, consistent with the Welch-Satterthwait Test, showed that ubiquity is a moderator for 4 out of the 5 proposed relationships (Table 5), confirming that (a) m-banking ubiquity increases the negative influence of m-banking resource-related inadequacies on satisfaction, for the case of ubiquitous clients; (b) m-banking ubiquity moderates the positive impact of satisfaction on PBMM and WOM, and the impact of PBMM on WOM.

Similarly, it can be concluded in general that m-banking ubiquity stimulates the proposed positive relations and weakens the negatives ones, for the non-ubiquitous clients. The exception is the relationship between willingness to receive PBMM and WOM, where PBMM positive effect on WOM is stronger for ubiquitous clients.

[Table 5 about here]

## 4. Discussion and implication

Due to the fact that the usage of m-banking services for performing financial and non-financial banking tasks is increasing, while the research that identifies m-banking aspects which block m-banking adoption is scarce (Akturan and Tezcan, 2012; Prodanova et al., 2015), this study aimed at analysing the influence of the m-banking inadequacies, related to the resource absence, on the B2C relationship development. Attending the RBT, banks' intangible resources are key determinants in the B2C relationship, conditioning customer satisfaction and communication with the company, underlining the importance of their competent employment in the m-banking service provision (Cardona, 2011; Eldin et al., 2016; Kingshott et al., 2018). As a result, in this study, the m-banking resource-related inadequacies effect was contemplated on clients' satisfaction, their willingness to receive PBMM and their WOM emission, as the first part of the objective, and the interrelations between the last three variables, as the second part of it. To the extent of our knowledge, no study deals with the issue of the negative effects of the perceived resource-related inadequacies (such as money unavailability, lack of information and no advice) on m-banking usage (objective (a) and (b), including the moderating clients' identification according to ubiquity perception (objective (c)), as portrayed in this research with rather a large database. By achieving the objectives of this study, this research adds value to the body of knowledge about m-banking services provision and banking entities' resources allocation, especially for the case of the Spanish market.

On the one hand, regarding objective (a) and (b), it was firstly corroborated that m-banking resource-related inadequacies have a negative influence on clients' willingness to receive PBMM. If the m-marketing message is not considered informative by clients or has lost the personal B2C interaction, clients will not give banking entities permission for m-marketing activities. Besides, it was confirmed that clients perceiving m-banking resource-related inadequacies are likewise less satisfied with the service, meaning that clients' satisfaction with m-banking services is indicated by the entity's performance. Therefore, unless banking entities transform the perceived resource absence of their m-banking services to improve the execution and convert them into m-banking strengths, clients' satisfaction and their propensity to PBMM will be reduced and it will, in the end, negatively affect the emission of WOM. These outcomes consistently affirm the RBT's argument that intangible resources are crucial for companies' success, providing a high likelihood for achieving a distinguishable competitive advantage (Ichsan et al., 2017).

Moreover, in compliance with the literature (Ranaweera and Menon, 2013), it was sustained that clients with higher satisfaction with m-banking services will be more willing to engage in PBMM activities and will emit WOM regarding these services to a greater extent. And, as highlighted earlier, the achievement of the previous activities between clients and banks will unavoidably encourage a strong B2C relationship.

On the other hand, as regarded in objective (c), ubiquity is shown to be a noteworthy sway, making a difference between clients who perceive it as an important m-banking attribute (ubiquitous clients) and those who do not (non-ubiquitous clients). Generally, m-banking ubiquity could be seen as an attribute stimulating the proposed negative relationships for ubiquitous clients, and the positive ones for non-ubiquitous clients. This provides an opportunity to recognise different types of clients and define certain specificities in the resources distribution that would customise the service offered to each of these categories, independently. For banking entities, it means a precise proposition by researchers, for an exceptional customer experience coming from a unique m-banking resource (Asamoah et al., 2020).

Thus, for ubiquitous clients, it was found that ubiquity strengthens the negative effects of m-banking resource-related inadequacies. As a matter of fact, when clients perceive m-banking resource-related inadequacies, adding a service that will further emphasise the resource absence, will provoke a reduced satisfaction. For example, if clients' need for advice, information or cash at a precise moment is not fulfilled, it will result in deficient satisfaction, even despite the possibility to use the services ubiquitously. This circumstance happens because, for clients, ubiquity will lose importance if they could not accomplish their main wants. It means that depending on the situation they are in (e.g., abroad for a business trip or no Internet connection), the ubiquity could make even more complicated the carrying out of the wanted transaction.

However, for ubiquitous clients, ubiquity plays a vital role in the case of the willingness to receive PBMM. Indeed, m-banking clients already need further contact with the entity, unavailable because of the resource absence. And, this is where PBMM stands out. Its reception involves accessing m-marketing services providing an additional connection with the m-banking entity. Clients' better communication with the entity is closely related to their understanding of the performance of the desired task (D'Urso and Rains, 2008), necessary when clients perceive difficulties with service usage. This argument explains the greater influence of ubiquitous clients' willingness to receive PBMM on WOM.

Conversely, for non-ubiquitous clients, the positive relations between satisfaction and willingness to receive PBMM and WOM are stronger without ubiquity's effect. This probably occurs because clients value more their own experience with m-banking services than other influencing attributes such as ubiquity. For instance, when clients experience satisfaction with the service, they may not feel the need for additional service or entity's amenities in order to maintain the relationship (Ngugi, 2014). That is the reason why WOM will be influenced by clients' satisfaction with the service (not by the ubiquity of the service), bringing extra interest in PBMM activity, also. The satisfaction will be a sufficient and principal element for non-ubiquitous clients to involve in further communication activities with the entity.

Regarding the *managerial implications*, as established in this research and previous literature (Malviya and Sharma, 2013) is the fact that banking entities have to raise clients' awareness of m-banking attributes as a way towards efficient, flexible and accessible service and also improved communication. Because of this, providing convenient and practical service, and countervailing the lack of personal contact or advising difficulties will engender clients' satisfaction with the service and their willingness to engage in PBMM communication with their bank entity. For example, the help of a personal m-banking advisor or a 24/7 chat can be a useful strategy to guide clients in case of necessity.

The same outcome will be achieved when banking entities improve their resources, diminishing money unavailability issues. Accurate and updated information about money transactions, money withdrawal, ATMs locations and all the alternatives of cash, will increase the required recognition of m-banking opportuneness and will enhance clients' satisfaction and

motivate further interaction with the entity. Clients, who know the precise m-banking strengths, will not perceive its inadequacies.

Additionally, clients' increased satisfaction and willingness to receive PBMM will make them more prone to share WOM about m-banking services and their providers. Since all this leads towards a stable B2C relationship, banking entities have to make an effort in encouraging clients to communicate their satisfaction with m-banking services and to participate in PBMM activities. It could be enabled through the use of mobile app contests, which would encourage clients to share opinions about the entity's actions and activities. In this way, other individuals would be informed about clients' experience with m-banking services, and they might even become potential future customers.

Furthermore, appearing to be one of the fundamental m-banking characteristics, ubiquity's benefits and utility in the m-banking channel must be better communicated to clients. For ubiquitous clients, who already perceive ubiquity as an essential m-banking attribute, it would be recommendable to provide supplementary ubiquitous services, such as geomarketing, to offer alternative options for service obtainment, which will make the service available for clients at the moment when and at the place where their need emerges (Yang and Lin, 2017).

Opposite are the non-ubiquitous clients, in which case, to increase the awareness of the contribution of ubiquity to m-banking, it would be useful to introduce a guided explanation of m-banking opportunities and promote new tools that would highlight the practical use of m-banking services. For example, the use of QR codes and NFC technology for signing banking-related documents or paying without any payment card (de Luna et al., 2018), would be a valuable option. As well, detailed information on the updated Payment Services Directive, including strong customer authentication for the electronic and card payments, will be a plus for non-ubiquitous clients.

Activities that would help all clients to perceive better the m-banking ubiquitous services would be, for instance, a bank's active social media presence. For instance, sharing a personal experience by clients who enjoy ubiquity will stimulate all users of m-banking services. It is likewise recommendable for banking entities to include gamification in the delivery of m-banking services and m-banking marketing. Like this, clients could recognise a more entertaining, appealing and engaging setting of the banking services distribution, mitigating in this way the negative effects of the inadequacies.

## 5. Conclusion

The continuous development of the new technologies and electronic markets, offering innovative tools and services, has contributed with inventive ways for banking entities' connection and communication with their clients. These digital advancements have generated relevant banking services provision changes and, therefore, clients' behavioural responses. Starting with ATMs, followed by Internet banking and continuing with m-banking, nowadays, banking clients have a variety of possibilities to complete the desired tasks. However, because of mobile phone limitations, such as small screens and low resolution [iv], limited battery life or wireless connection breaks, among others, clients have not chosen their mobile phones as the primary tool to access m-banking services (Laukkanen, 2016). Given these circumstances, the need for a deeper understanding of the elements that restrain clients from using m-banking has risen. Studying how to mitigate the negative effects, driven from the absence or lack of services, such as unavailability of advice, information or cash, the findings trace clients' satisfaction, PBMM and WOM predispositions as the means to protect and maintain long-lasting B2C relationships. Outlining vital implications for banking entities to develop effective strategies for promoting sustainable m-banking, it could be expected in the near future to notice significant changes in the management of m-banking services and m-banking clients. Building new habits and preferences will undoubtedly take place, as the innovation in and use of mobile

technologies has considerably increased since the beginning of the COVID-19 pandemic (Comscore, 2020). Thus, it is imperative to continue the exploration of the discouragements and the stimuli for m-banking services usage through the lens of, both, clients and companies' resources and demands.

## 6. Limitation and future research direction

As the main limitation of this study, first, it is recognised fact that only a reduced number of m-banking characteristics were examined as inadequacies. Second, no ad-hoc information was collected for the research since the bank already collected the data with their specific mono-item scales and provided them for this study. Besides, the study's database consists of Spanish m-banking clients, which confines the generalisation of the results. Then, future research could be complemented with more variables, such as, for example, the lack of trust in the mobile channel, the lack of control using it or the perceived risk (Hamidi and Safareeyeh, 2019), validated by other researchers in the same field, to contemplate the influence of more factors that clients might negatively perceive. Similarly, the negative WOM could be addressed (Steinhoff et al., 2019), exploring if the same m-banking inadequacies or maybe PBMM would influence negative WOM emissions. Finally, further research should replicate this study with longer scales and compare the m-banking client's habits before, during and even after COVID-19, to determine if the driven conclusions remain relevant in the pandemic and post-pandemic era.

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**Table 1. Sample characteristics**

| **Demographical characteristics** | | **%** |
|---|---|---|
| **Gender** | Men | **57.5** |
| | Women | **42.5** |
| **Age** | 25-34 | **46.9** |
| | 35-44 | **33.0** |
| | 45-54 | **15.2** |
| | 55-70 | **4.9** |
| **Education** | Basic studies or less | **1.7** |
| | High school | **7.0** |
| | Associate degree | **19.1** |
| | University degree | **72.2** |
| **Occupation** | Employed | **83.3** |
| | Unemployed | **16.7** |
| **Monthly income** | < 900€ | **16.7** |
| | 900 to 1200€ | **20.1** |
| | 1201 to 1500€ | **18.5** |
| | 1501 to 1800€ | **12.8** |
| | > 1800€ | **31.9** |
| **Connects to m-banking ubiquitously** (at least three places were chosen between "home", "work", "public transport" or "other places") | Yes | **48.6** |
| | No | **51.4** |

**Table 2. Variables, items and sources**

| Variable | Item | Source |
|---|---|---|
| **M-banking resource-related inadequacies** | Money unavailability | Self-developed scale by Banco Sabadell's marketing department, based on previous literature (Lee and Chung, 2009; Santouridis et al. 2009; Song and Vong, 2013) |
| | Lack of information | |
| | No advice | |
| **Clients' satisfaction** | Level of satisfaction with m-banking | Self-developed scale by Banco Sabadell's marketing department, based on previous literature (Santouridis et al. 2009; Aldas-Manzano et al. 2011) |
| **Clients' willingness to receive PBMM** | Interest in personalised advertising regarding the products and services offered by the banking entity through m-banking | Self-developed scale by Banco Sabadell's marketing department, based on previous literature (Wessels and Drennan, 2010; Chung and Holdsworth, 2012) |
| **Clients' WOM emission** | Degree of probability of recommending the m-banking to others as a shopping channel | Self-developed scale by Banco Sabadell's marketing department, based on previous literature (Casaló et al. 2008; Ahmad and Al-Zu'bi, 2011) |
| **M-banking ubiquity** | In which places do you normally connect to the banking entity via m-banking: home, work, public transport or other places? | Self-developed scale by Banco Sabadell's marketing department, based on previous literature (Koenig-Lewis et al. 2010; Saeed, 2011) |

**Table 3. Measurement model estimation**

| Variable | Item | Loadings λ (t Value) | Cronbach α | CR | AVE |
|---|---|---|---|---|---|
| **M-banking resource-related inadequacies** | Money unavailability | .825 (56.114)* | 0.7 | 0.8 | 0.5 |
| | Lack of information | .552 (13.257)* | | | |
| | No advice | .875 (132.365)* | | | |

Note: *p<0.05

**Table 4. Causal model estimation**

| Proposed hypotheses | Coefficient β (t Value) |
|---|---|
| **H1: M-banking resource-related inadequacies → Satisfaction** | -.422 (27.357)* |
| **H2: M-banking resource-related inadequacies → Willingness to receive PBMM** | -.488 (45.650)* |
| **H3: Satisfaction → WOM** | .281 (8.554)* |
| **H4: Satisfaction → Willingness to receive PBMM** | .399 (30.809)* |
| **H5: Willingness to receive PBMM → WOM** | .484 (20.976)* |

Note: *p<0.05

**Table 5. Multi-group analysis of ubiquitous and non-ubiquitous clients**

| Hypothesised multi-group relations | Ubiquitous clients β (t Value) | Non-ubiquitous clients β (t Value) | Welch-Satterthwait Test |
|---|---|---|---|
| **H1: M-banking resource-related inadequacies → Satisfaction** | -.529 (22.990)* | -.076 (7.609)* | 18.067* |
| **H2: M-banking resource-related inadequacies → Willingness to receive PBMM** | -.428 (16.171)* | -.392 (7.975)* | 0.652 |
| **H3: Satisfaction → WOM** | .099 (2.537)* | .435 (10.684)* | 5.934* |
| **H4: Satisfaction → Willingness to receive PBMM** | .367 (11.774)* | .523 (20.073)* | 3.839* |

| | | | |
|---|---|---|---|
| **H5: Willingness to receive PBMM → WOM** | .500 (13.038)* | .266 (8.540)* | 4.735* |

Note: *<0.05

[i] When speaking about banking entities in Spain, we refer to both traditional banks, which are privately owned, and "savings banks", which are understood as government owned. The savings bank describes a financial institution that specializes in managing savings and loans, with non-profit character and social aim. However, most of those, nowadays function together with a banking entity. Namely, the disappearance of savings banks is explained by regulatory changes, provoking those to merge into new banks or obliging larger entities to absorb them. Compared to the 46 savings banks that existed in 2007, today there are only 2 that are operating in the market, Caixa Ontinyent and Caixa Pollença. Finally, Banco Sabadell is among the 6 banks operating with IBEX-35, proving its competence (Newtral, 2020; Noticias de Álava, 2020).

[ii] Indicators with outer loadings between 0.40 and 0.70 should be considered for removal only if their deletion leads to an increase in the CR and AVE (Hair *et al.* 2018). Since, in the case of this study, the CR and AVE values do not increase with the deletion of the indicator with a value slightly lower than 0.70, we decided to keep the precise indicator.

[iii] Given that the database was provided by Banco Sabadell, single-item variables are handled in this study. That has caused impossibility to determine indicator's reliability, internal consistency and convergent validity of satisfaction, willingness to receive PBMM and WOM. Being single-item constructs, the estimation of the loadings, t Value, AVE, CR and Cronbach α is not applicable, as well as the calculation of the discriminant validity. Moreover, the predictive relevance of the constructs in the model ($Q^2$) is likewise not considered pertinent (Hair *et al.* 2018).

[iv] Although mobile phones' screens and resolution are nowadays improved, there are still clients who use older models of mobile phones, presenting characteristics that may act as limitations for accessing m-banking services.