Mobile word of mouth (m-WOM): analysing its negative impact on webrooming in omnichannel retailing

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Abstract

Purpose – The purpose of this research is to analyse the influence of mobile word of mouth (m-WOM), received at the physical store, which "challenges" the consumer's preferences in a webrooming experience. The impacts of the social relationship between the sender and the receiver of the m-WOM and product category (electronics versus fashion accessories) are examined.

Design/methodology/approach – An online experiment was carried out which manipulated the presence and type of challenging m-WOM, and product category, in a 3 × 2 between-subjects factorial design. The participants were 204 consumers recruited through a market research agency. Their perceptions about the helpfulness of the m-WOM, and their product preferences and choices, were analysed.

Findings – Receiving in-store m-WOM was perceived as helpful by webroomers and affected their preferences and choices. For electronics online reviews posted by anonymous customers were more influential than friends' opinions, whereas the opposite was the case with fashion accessories. The trustworthiness and expertise of the m-WOM source may explain the effects of m-WOM.

Practical implications – m-WOM entails challenges and opportunities for retailers in the omnichannel era. The findings suggest that allowing customers to access m-WOM may be beneficial; however, retailers must consider the type of m-WOM that may be most suitable for their businesses. Recommendations for referral and review sites are also offered.

Originality/value – This study examines the impact of challenging m-WOM on shopping experiences, combining online, mobile and physical channels. The results revealed the importance of the information source and product category in the determination of consumers' perceptions of helpfulness, preferences and choice.

Keywords Webrooming, m-WOM, Social relationship, Product category, Helpfulness, Trustworthiness, Expertise

Paper type Research paper

1. Introduction

The proliferation of new channels on which consumers interact with retailers has radically changed the shopping landscape (Viejo *et al.*, 2019). Consumers can freely combine channels during all the stages of their purchase decision process. This not only facilitates the gathering of information but also empowers consumers (Goraya *et al.*, 2020). The most widespread behaviour consists of webrooming, that is, researching product information online and then visiting the physical store to make the purchase (Arora and Sahney, 2017; Kumar *et al.*, 2017). In fact, in Europe and the USA nearly 50% of offline sales are influenced by web searches (Forrester Research, 2018; Statista, 2019). Recently, it was found that consumers webroom because the experience gives them confidence about the adequacy of products and leads them to feel like smart shoppers (Flavián *et al.*, 2020); both factors lead to more satisfaction than other online–offline channel combinations (Flavián *et al.*, 2019).

The emergence of mobile technologies has revolutionised the customer experience as this has caused the borders between channels to fade away (Verhoef *et al.*, 2015). Consumers have

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moved from sequential purchase processes to purchase journeys where all channels are interchangeably and seamlessly used. Mobile technologies affect all stages of the purchase journey (Jocevski *et al.*, 2019), but information search is especially affected by the use of the smartphone (Think with Google, 2016; Wang *et al.*, 2015). In the context of webrooming, this means that consumers may use online sources *not only before* going to the store *but also during* the physical experience. Webrooming, thus, evolves into more dynamic, borderless, omnichannel experiences. For example, consumers may search for product information online, go the physical store to test the product, and then make the purchase online through their smartphone (Research, Testing and Buying) (Fernández *et al.*, 2018). Mobile technologies incorporate social media, geolocation and m-commerce (SoLoMo) into the shopping journey, which allows consumers to locate stores, receive location-based promotions and compare prices in real time, amongst other things (Hüseyinoğlu *et al.*, 2017).

The use of mobile technologies at the physical store has important implications for the customer experience (Sirega and Kent, 2019). Information gathered online can reduce the information asymmetries that commonly exist in physical stores, thus improving consumers' decision-making (Kowatsch and Maass, 2010). In fact, consumers seem to replace traditional retail salesperson functions with mobile devices (Rippé *et al.*, 2017). This can negatively influence the salesperson's sales performance (Rapp *et al.*, 2015). Grewal *et al.* (2018) suggested that using mobile phones can distract consumers from the in-store experience, which may mean that the efforts invested by retailers in in-store marketing activities may go unnoticed. However, these authors found that in-store mobile use resulted in time being spent in-store and more sales. In addition, previous research has shown that consumers tend to prefer review-enabled stores (Kowatsch *et al.*, 2011), and that the customer experience can be improved if mobile technologies are used in-store (Flavián *et al.*, 2016). Therefore, the in-store use of mobile phones represents opportunities and challenges that must be investigated.

Previous studies have identified different in-store uses of mobile phones, such as accessing product information, comparing prices, redeeming coupons and receiving personalised recommendations (Kowatsch and Maass, 2010; Jocevski *et al.*, 2019; Sirega and Kent, 2019; Verhoef *et al.*, 2015). One of the main in-store mobile uses is the accessing of word of mouth (WOM) information (Think with Google, 2016; Rippé *et al.*, 2017). New technologies allow consumers to ubiquitously access other users' opinions and evaluations, which are then used to form attitudes and make decisions (Hennig-Thurau *et al.*, 2010). The effects of traditional WOM in conventional shopping environments, and of electronic WOM (e-WOM) in e-commerce, have been widely analysed. However, research into how mobile WOM (m-WOM) influences the consumer's in-store purchasing behaviour is scarce (for exceptions, see Flavián *et al.*, 2016; Kowatsch *et al.*, 2011; Orús *et al.*, 2019).

Given the importance of interpersonal influence in consumer decision-making (Brown and Reingen, 1987; Gilly *et al.*, 1998; Vázquez-Casielles *et al.*, 2013; Ismagilova *et al.*, 2019), this research analyses the impact of m-WOM on a webrooming shopping experience. Specifically, we explore the impact of m-WOM that challenges the consumer's preference and, thus, calls his/her purchasing decision into question. Negative WOM, in the form of reviews, opinions and recommendations, has a strong influence on shopping behaviour (Mizerski, 1982; Kaushik *et al.*, 2018; Lee *et al.*, 2008; Sen and Lerman, 2007; Sparks and Browning, 2011). We analyse the perceived helpfulness of the m-WOM message (Schindler and Bickart, 2012); the extent to which an interpersonal communication message is helpful is a key determinant of its value for businesses and prospective consumers (Mudambi and Schuff, 2010; Pan and Zhang, 2011). We also consider the *episodic influence*, which has been defined as the change in the consumer's preferences and choice resulting from an interpersonal information exchange, of m-WOM (Gilly *et al.*, 1998). According to Vázquez-Casielles *et al.* (2013), there is a need to empirically examine how negative WOM, which discourages purchase, contributes to the shift in the probability of choosing a particular brand.

With the aim of offering a more complete picture about the effects of m-WOM on webrooming behaviour, we examine the role of interpersonal forces and situational factors. The influence of WOM depends on the characteristics of the relationship between the sender and the receiver (Brown and Reingen, 1987; Bansal and Voyer, 2000; Steffes and Burgee, 2009; Koo, 2016). Omnichannel consumers can access m-WOM from multiple sources on their mobile phones (e.g. brands' websites, retailers' websites, review sites, chat apps). Thus, we examine the influence of challenging information coming from an anonymous customer, with whom the receiver has no previous relationship or knowledge (weak tie, heterophily); and a friend, with whom the receiver has a deep bond (strong tie, homophily). As for situational factors, product characteristics affect the use of online and physical channels in the shopping journey (e.g. Arora and Sahney, 2017; Huang *et al.*, 2009), and determine the use and effectiveness of e-WOM (e.g. Wen *et al.*, 2009). Thus, we analyse the moderating role of product category (search versus experience goods; Nelson, 1970) in the effects of the presence and type of challenging m-WOM.

2. Theoretical development

2.1 Omnichannel webrooming behaviour

Flavián *et al.* (2019) found that webroomers first look on the Internet for the product that probably best matches their needs; thereafter, they go to the physical store to confirm the product information and make the purchase. Webroomers are involved with the product and/or the purchase (e.g. Burke 2002; Konuş, Verhoef, and Neslin 2008), which increases their feelings of uncertainty (Arora and Shaney, 2017; Piercy 2012; Puccinelli *et al.*, 2009). Thus, they intensively search for information to reduce the uncertainties and risks associated with the purchase, with the ultimate goal of having confidence in their decision (Flavián *et al.*, 2019). Confidence is a mental state of certainty when evaluating a product, brand or purchase situation (Petty *et al.*, 2002). When consumers webroom they enhance their perception of being in control and their belief that they are making the right choice (Flavián *et al.*, 2020). Webrooming is the best channel combination to evoke feelings of confidence, which have a strong influence on consumer satisfaction (Flavián *et al.*, 2019).

In this context, the study of interpersonal communications, or WOM, is particularly relevant. On the one hand, previous research has systematically found that consumers actively seek and adopt WOM messages, particularly when they are involved in the purchase of the product category (Gilly *et al.*, 1998; Vázquez-Casielles *et al.*, 2013), or when they perceive risk and try to reduce it during the information-gathering stage of the purchase process (Arndt, 1967; Murray, 1991; Bansal and Voyer, 2000; King *et al.*, 2014). When consumers perceive uncertainty in a purchase situation, they tend to look for other consumers' opinions and evaluations in order to reduce it (Racherla *et al.*, 2012). If consumers are involved with the purchase of the product, and carry out webrooming to reduce their perceptions of uncertainty and gain confidence in their choices, it seems reasonable to assume that WOM will be one of the information sources consulted during the purchase process, and its influence may, thus, be worth investigating (Arora and Sahney, 2017). In this sense, Bailey (2005) found that a major motivating factor for consumers to visit product review websites prior to making a product purchase was the need for assurance or reassurance that they were making a good choice. On the other hand, if webroomers combine channels to gain confidence in their choices, it would be of interest to analyse how other consumers' opinions, that challenge this established preference, may influence their final decisions and purchase behaviour.

Positive WOM has been shown in the previous literature to have a positive effect on reinforcing webroomers' confidence and on their purchase experiences (Flavián *et al.*, 2016, 2019). However, the impact of negative WOM on consumers' decision-making has been less explored (Vázquez-Casielles *et al.*, 2013). If webrooming empowers consumers to generate a stable impression of products (Goraya *et al.*, 2020), it would be interesting to examine how

WOM messages that consumers receive at the physical store, when the purchase choice is close to being made, affect the stability of impressions formed in prior online research.

2.2 WOM, e-WOM and m-WOM

The influence of interpersonal communication and its multiple forms (e.g. traditional WOM, e-WOM) has been widely acknowledged in the literature, and many studies have been carried out to understand how consumers process WOM information, and its subsequent influence on all the stages of the purchase decision process, before and after the purchase decision has been made (e.g. Granovetter, 1973; Brown and Reingen, 1987; Bearden *et al.*, 1989; Murray, 1991; Duhan *et al.*, 1997; Gilly *et al.*, 1998; Bansal and Voyer, 2000; Brown *et al.*, 2007; De Bruyn and Lilien, 2008; Park and Kim, 2008; Park *et al.*, 2007; Lee and Youn, 2009; Gupta and Harris, 2010; Jang *et al.*, 2012; King *et al.*, 2014; Ismagilova *et al.*, 2020a, b). Previous research has found that interpersonal communications have a dual role (e.g. Park *et al.*, 2007; Rosen and Olshavsky, 1987): first, they have an informative role, as they provide consumers with relevant product information; second, they play a recommendatory role, where the informant designates one alternative as the best available.

Interpersonal communications are more effective, and influential, than commercial communications because information generated by other consumers – a priori – is not based on commercial interests and, therefore, is considered as more reliable and relevant than company-generated information (Gilly *et al.*, 1998; Brown *et al.*, 2007). E-WOM, largely because it has massively increased the volume of data available to the consumer, has brought this distinction into sharper focus. But there are differences between e-WOM and traditional WOM (Cheung and Thadani, 2012). According to King *et al.* (2014), six unique features differentiate e-WOM from traditional WOM, namely, enhanced volume, platform dispersion, persistence and observability, anonymity and deception, salience of valence and community engagement. Thus, in comparison to traditional WOM, e-WOM is more impersonal, asynchronous and public; whereas the information receiver in traditional WOM knows the sender, and both are present when the information is being shared in a private conversation, the great heterogeneity of e-WOM (e.g. blog posts, videos, online product reviews, opinions posted on review sites, online conversations in virtual communities and social networks) (Chu and Kim, 2011; Cheung and Thadani, 2012) means that the information receiver does not necessarily know the sender, the sender is not necessarily directing the message to any specific person, and the message is posted publicly and is easily accessible to anyone (Godes and Mayzlin, 2004; Brown *et al.*, 2007; King *et al.*, 2014).

The use of new mobile technologies during the customer journey has led to m-WOM, which may bridge the gap between WOM and e-WOM. Accessing WOM through one's mobile phone is, by its nature, an online activity, given that the sender and the receiver are not physically together at the moment of the exchange. However, consumers can maintain virtual conversations with friends, relatives and other contacts using their mobile phones, just as they might if they were physically co-located. Therefore, mobile technologies allow users to enjoy personal or impersonal, asynchronous or synchronous, and public or private information exchanges. Recent research has shown that the creation and consumption of m-WOM differs from the creation and consumption of other forms of WOM. Consumers perceive m-WOM content as more affective, more concrete and less extreme than non-m-WOM content, but they value is less (Ransbotham *et al.*, 2019). On the other hand, Grewal and Stephen (2019) found that knowing that a review was posted using a mobile device increased consumers' purchase intentions, because writing reviews on a mobile phone is perceived as requiring physical effort, which impacts positively on its credibility. Another key characteristic of m-WOM is that it can be accessed both in the early stages of the purchase journey (De Bruyn and Lilien, 2008), and at the physical store, just before the webroomer makes his or her final choice. At this point, the consumer may have few further opportunities to scrutinise factors related to the information source, that (s)he would normally otherwise consider, such as the platform on which the

communication appears, or the sender's true intentions in making the recommendation (Brown *et al.*, 2007; Lee and Youn, 2009; Chu and Kim, 2011). Thus, the particularities of m-WOM and their influence on omnichannel behaviour need to be investigated.

2.3 The influence of challenging m-WOM on webrooming

In the present study, the influence of challenging m-WOM is operationalised in terms of perceived helpfulness and its episodic influence. Perceived helpfulness has been defined as the extent to which the m-WOM message helps consumers and assists them in the decision-making process. The helpfulness of e-WOM is a key determinant of its value for businesses and prospective consumers (Mudambi and Schuff, 2010; Pan and Zhang, 2011). However, while many studies have analysed helpfulness as a fixed value, calculated by the number of votes received from readers who found a review to be helpful (e.g. Mudambi and Schuff, 2010; Baek *et al.*, 2012; Schindler and Bickart, 2012), this study measures the subjective assessment of the message's capacity to help them make a purchase decision (Ismagilova *et al.*, 2020a). In addition, the episodic influence of m-WOM relates to the shift in the consumer's preferences and choice resulting from an interpersonal information exchange (Gilly *et al.*, 1998). This persuasive effect of interpersonal communication has received little attention in the literature (Vázquez-Casielles *et al.*, 2013), particularly negative messages that discourage purchase (De Bruyn and Lilien, 2008; De Matos and Rossi, 2008; Sweeney *et al.*, 2014). For the purposes of the present study, episodic influence is taken to refer to the change in the webroomer's preference for the product being considered during the webrooming episode, and his/her final choice.

The impact of negative WOM (and negative e-WOM) has been documented in the literature. Negative information received from other consumers can increase the consumer's perceptions of risk in a product purchase, affecting purchase intentions (Lee *et al.*, 2008). The negativity effect argues that negative WOM messages are more influential than positive because negative information is scarcer and, thus, consumers pay more attention to it (Koo, 2016). This negativity effect can also be explained by accessibility-diagnosticity theory (Herr *et al.*, 1991). Negative information tends to be weighted more heavily than positive because consumers perceive negative product information as more diagnostic than positive product information (Lee and Youn, 2009), that is, it helps consumers to discriminate between alternatives, interpretations and categorisations (Herr *et al.*, 1991). Negativity bias (Mizerski, 1982) ordains that when consumers hold a neutral opinion of a product, negative reviews are more salient than positive reviews (King *et al.*, 2014). Later empirical studies confirmed the effect of negative bias (Sen and Lerman, 2007; Lee and Youn, 2009; Kaushik *et al.*, 2018). Regarding the perceived helpfulness of e-WOM, Sen and Lerman (2007) found that reading negative reviews from other consumers is more useful and informative than reading positive reviews. Kaushik *et al.* (2018) analysed the impact of the valence of reviews labelled as "helpful" in Amazon, and found that negative reviews had a negative impact on product sales, especially when the negative information appeared in the first half of the helpful reviews (primacy effect). Regarding the episodic influence of e-WOM-based interpersonal communication, Lee and Youn (2009) found it had a detrimental effect on consumers' behavioural intentions when they were exposed to negative online reviews, regardless of the platform on which the e-WOM message was posted. Sparks and Browning (2011) found that consumers give more weight to negative e-WOM than positive e-WOM in the decision-making process. This suggests that negative information has greater importance for consumers. Therefore, we expect that consumers who receive in-store m-WOM that casts doubts on their preference for a product during a webrooming experience will perceive the recommendation as helpful and, in consequence, adjust their preferences and final decision:

H1. Receiving challenging m-WOM at the store will be perceived as helpful by the consumer in an omnichannel webrooming experience.

H2. Receiving challenging m-WOM at the store will have a negative impact on the webroomer's (1) preference for and (2) choice of the pre-selected alternative.

2.4 The impact of the social relationship between the sender and receiver

All interpersonal communication exchanges occur within social relationships (Bansal and Voyer, 2000). Whether the sender and the receiver maintain close and constant contact, or are almost complete strangers who only sporadically interact, will determine the influence of the WOM message. Two main interpersonal forces have been identified in the literature: tie strength and homophily (Granovetter, 1973; Brown and Reingen 1987; Duhan *et al.*, 1997; Gilly *et al.*, 1998; Bansal and Voyer, 2000; Brown *et al.*, 2007; Steffes and Burgee, 2009; Vázquez-Casielles *et al.*, 2013). Tie strength has been defined as the degree of intensity of a social relation between consumers (Brown and Reigen, 1987). According to Granovetter (1973), social ties range from strong to weak. Strong ties, such as family and friends, are close relationships within an individual's personal network; weak ties, less personal, are connections with a wide set of acquaintances, colleagues or even complete strangers (Chu and Kim, 2011). Homophily has been defined as the degree of similarity between the sender and the receiver of a message, not only at the socio-demographic level (i.e. age, gender, education, lifestyle, social status; Rogers, 1983) but also in terms of values, beliefs and attitudes (Brown *et al.*, 2007; Chu and Kim, 2011).

As the omnichannel environment allows consumers to add and delete brands during the purchase journey based on information obtained from other consumers, the impact of the social relationship between the sender and the receiver is an essential factor to be considered when analysing the influence of online interpersonal communications on consumers' omnichannel experiences (King *et al.*, 2014). As previously stated, consumers can access m-WOM from the wide range of sources with whom they enjoy social relationships, for example: retailers' and brands' webpages, through blog entries and videos posted on social media, anonymous customers' online reviews posted on review sites, influencers' and opinion leaders' posts, real-time conversations with their family and friends on social networks, to chat apps (Gvili and Levy, 2016; Hennig-Thurau *et al.*, 2010). In this research we examine the two extremes of this *social relationship continuum*. At the lower extreme, we consider online product reviews generated by anonymous consumers who have acquired and used the product and, thereafter communicated their experiences, evaluations and opinions about it (Park *et al.*, 2007). At the higher extreme, we analyse opinions from friends that have been passed on via technology-mediated conversations (King *et al.*, 2014). The dual role of interpersonal communication (Park *et al.*, 2007; Rosen and Olshavsky, 1987) would suggest that m-WOM received from a friend may mainly have a recommendatory, rather than an informatory, influence, whereas the opposite may be the case for m-WOM received from an anonymous source.

The literature on WOM and e-WOM reports mixed findings regarding the effect of social relationship dimensions on the influence of interpersonal communications. On the one hand, previous studies have evidenced that a strong social relationship between sender and receiver (i.e. strong ties, homophily) makes the WOM message more influential than if they have a weak social relationship (i.e. weak ties, heterophily) (Brown and Reigen, 1987; Gilly *et al.*, 1998; Bansal and Voyer, 2000; Ismagilova *et al.*, 2020b). People with strong ties usually share common norms, emotional closeness and trusting relationships (Chu and Kim, 2011). Homophilous individuals are more likely to have similar product needs and wants than heterophilous individuals (Gilly *et al.*, 1998). Thus, consumers rely more on recommendations from users with whom they have strong links, than they do on recommendations from users with whom they have weak, or no, links (Brown and Reingen, 1987; Bansal and Voyer, 2000; Koo, 2016; Wang and Chang, 2013; Zhu *et al.*, 2016; Ismagilova *et al.*, 2020b). Recommendations received from strong social ties (friends

or family) may provide emotional and non-judgemental assistance in the process, as they take into consideration the personality and interests of the shopper. Consequently, they may offer trustworthy feedback as their personalised opinion is based on trust and friendship (Wang *et al.*, 2016). However, a message received from a weak social relationship can be more effective and influential than a message received from a strong social relationship (Granovetter, 1973; Brown and Reigen, 1987; Steffes and Burgee, 2009). Weak ties can be seen as providing objective information that consumers might perceive as more useful and diverse than information received from strong ties (Brown and Reingen, 1987). Rogers (1983) argued that heterophilous communication can facilitate the flow of information between diverse segments of a social system, which has since been demonstrated with the great diffusion of impersonal e-WOM (Chu and Kim, 2011). De Bruyn and Lilien (2008) found that demographic homophily had a negative influence on the interest in, and use of, e-WOM. Senders with weak social relationships with receivers are external to their close circles (Bachleda and Berrada-Fathi, 2016), and they generate non-biased information based solely on their expertise and familiarity with the product. This provides relevant, instrumental and evaluative cues for the consumer (Duhan *et al.*, 1997).

Mixed findings regarding the role of social relationships have also been found in the context of negative information. Pan and Chiou (2011) revealed that negative information can be viewed as more reliable when it comes from a net pal with whom one shares a strong social relationship, than when it comes from someone with whom one shares only a weak social relationship. Sweeney *et al.* (2014) found that homophily reinforces the impact of negative WOM. On the other hand, weak-tie information is viewed as more useful when shoppers face a situation in which they need specialised information (Brown and Reingen, 1987). Lee and Youn (2009) showed that, whereas strong social relationships reinforced the impact of positive eWOM on consumers' behavioural intentions, negative eWOM had detrimental effects, regardless of the source. Thus, although both types of interpersonal communication may influence webroomers, the mechanisms through which this influence operates may depend on social relationships.

The effects of m-WOM type may depend on source credibility, which is a key construct in the analysis of interpersonal communications and persuasion (Petty and Cacioppo, 1986; Ohanian, 1990; Eagly and Chaiken, 1993; Bansal and Voyer, 2000; Brown *et al.*, 2007; Park *et al.*, 2007; Sen and Lerman, 2007; Lee and Youn, 2009; Cheung and Thadani, 2012; Ismagilova *et al.*, 2020b). A source is perceived as credible when the consumer can trust the information conveyed (Eagly and Chaiken, 1993). Credibility is determined by a diverse set of variables, which can be related to the sender's characteristics (e.g. attractiveness, homophily; Ohanian, 1990, Brown *et al.*, 2007; Ismagilova *et al.*, 2020b), to the message's characteristics (e.g. argument quality, communication style; Cheung *et al.*, 2012; Filieri, 2016), and to the situation (e.g. online platform where the message is transmitted; Lee and Youn, 2009; Tsao and Hsieh, 2015). In the present study, we focus on the two dimensions that, according to the specialised literature, are the main determinants of source credibility: perceived trustworthiness and expertise (Hovland *et al.*, 1953; Brown *et al.*, 2007; Cheung and Thadani, 2012; Ismagilova *et al.*, 2020b). Trustworthiness has been defined as the "degree of confidence that a source is motivated to communicate valid assertions", and expertise as "the degree to which a source is considered to be capable of making valid assertions" (Willemsen *et al.*, 2011, p. 424). Taking into account the dual role of interpersonal communications and the previous argumentations, m-WOM emanating from senders with strong social relationships with its recipients is expected to be more trustworthy than m-WOM from those with whom the recipients share weak social relationships, whereas the opposite can be expected for perceived expertise. It is proposed that both dimensions of source credibility explain the impact of social ties on the perceived helpfulness of m-WOM. This circumstance, referred to as a suppression situation (Willemsen *et al.*, 2011), could help explain the lack of source-type-related differences in consumers' perceptions of the helpfulness of m-WOM:

H3. Challenging m-WOM received from friends will be perceived as more trustworthy than challenging m-WOM received from anonymous customers.

H4. Challenging m-WOM received from anonymous customers will be perceived as more expert than challenging m-WOM received from friends.

H5. The relationship between the m-WOM source (friends vs anonymous customers) and the perceived helpfulness of the m-WOM will be suppressed by its combined indirect effects through perceived source (1) trustworthiness and (2) expertise.

2.5 The impact of product category

The mixed findings reported in the literature about the effects of the social relationship between the sender and the receiver of the (e-)WOM message may depend on product type (Willemsen *et al.*, 2011; Wang and Chang, 2013; Sweeney *et al.*, 2014; Tsao and Hsieh, 2015). The nature of products is also a key factor influencing omnichannel behaviour (Peterson *et al.*, 1997; Van Baal and Dach, 2005; Pauwels *et al.*, 2011; Heitz-Spahn 2013; Arora and Sihney, 2017). In this research we analyse the effects of challenging m-WOM about electronics and fashion accessories. These product categories, frequently purchased through webrooming experiences (Flavián *et al.*, 2019), differ in two important dimensions. First, electronics and fashion accessories can be classified based on the consumer's capacity to assess their quality before they physical interact with them (Nelson, 1970). Huang *et al.* (2009) defined search goods as "those for which the attributes most important to assessing product quality are generally discoverable without the consumer (or someone else) interacting with the product" (p. 57); and experience goods as "those for which attributes associated with product quality are most discoverable through experience with the product" (p. 57). These classifications define electronics as search goods, and fashion accessories as experience goods (Van Baal and Dach, 2005). Second, these product categories may differ in the amount of time, money and energy that the consumer spends in the purchase process (Murphy and Enis, 1986). Purchasing electronic products may require a higher investment of resources (time, money) than may fashion accessories. The level of perceived risk in the purchase thus differs, and consumers are more likely to search for information from multiple sources, including WOM, for the purchase of high risk than low risk products (Gilly *et al.*, 1998; Bansal and Voyer, 2000).

For products dominated by experience-based attributes, information coming from strong ties may be perceived as more important, compared to products dominated by search-based attributes (Bachleda and Berrada-Fathi, 2016; Wen *et al.*, 2009). As experience goods have a hedonic component, shopping experiences are more driven by affective processes than in the case of search goods. For experience goods, consumers may rely more on the trustworthy opinions of their strong-tie contacts, who know them better, and can give them more personalised opinions than can anonymous customers. Therefore, challenging m-WOM may be more influential when it comes from a strong tie, versus a weak tie, given that the opinion might be considered as more trustworthy. For search goods, cognitive processes tend to dominate the shopping experience, and consumers tend to rely on the opinions of experts to choose the right option (Wen *et al.*, 2009). Information provided by individuals with weak social relationships is easily spread to a large audience, which helps consumers with high risk perceptions obtain valuable information with which to make well-informed decisions (Chu and Kim, 2011). Thus, the social relationship may not be as important as degree of familiarity or expertise with the product, and reviews posted by anonymous customers who have used the product may be more influential.

H6. For fashion accessories, m-WOM received from a strong social relationship will have greater influence on the (1) perceived helpfulness, (2) preference for and (3) choice of the pre-selected alternative, than m-WOM received from a weak social relationship.

H7. For electronic products, m-WOM received from a weak social relationship will have greater influence on the (1) perceived helpfulness, (2) preference for and (3) choice of the pre-selected alternative, than m-WOM received from a strong social relationship.

3. Methodology

3.1 Design and sample

An online experiment, with a 2 (product type: accessories, electronics) × 3 (challenging m-WOM: non-m-WOM, anonymous customer, friend) between-subjects factorial design, was carried out to test the hypotheses. The experiment was based on a simulated webrooming purchase scenario. The sample for the experiment was recruited through a market research agency. The final valid sample consisted of 204 participants (59.8% female; aged between 18 and 52 years; 78% with university degrees; 91.7% had made online purchases in the previous 12 months).

3.2 Procedure

First, the participants were randomly assigned to one of the two product categories and answered a series of control questions about their in-store use of smartphones in their purchasing behaviour, and their knowledge of, and brand preferences for, the product categories (see Section 3.3). Second, the purchase scenario was presented in two phases, simulating a webrooming experience. In the first phase (T1), the participants had an online interaction with three products. The products were chosen to be equally attractive and similar in terms of features and quality. The product presentations consisted of a list of characteristics and pictures (Flavián *et al.*, 2009a, b; Appendix). After visualising the product information, the participants reported their preferences and ranked the three options. The least preferred option was removed from the consideration set, the remaining two being retained for the second phase. For example, if one participant in the "sports shoes" group ranked the products as (1) ADDS, (2) CNVRS, (3) VNS, the VNS sports shoes were withdrawn from the consideration set, and only the ADDS and CNVRS sports shoes were re-evaluated in the second phase.

Third, in the second phase (T2), the participants were told that they had visited the physical store to confirm their purchase decision. Once there, they found the two most preferred alternatives from the first phase, and the m-WOM manipulation was randomly introduced. The participants who received the treatment read that the retailer was testing a new mobile app that allows consumers to access additional product information through scanning a QR code. In the weak social relationship condition, the participants went to the *customer reviews* option of the retailer's app and read a slightly negative review of the product most preferred in the first phase (Appendix). As in the previous scenario, the participants read a negative online review of the ADDS sports shoes. In the strong social relationship condition they accessed the chat function (WhatsApp) where they saw a simulated conversation with their *best friend*. In the conversation the participant read his/her best friend expressing a negative opinion about the preferred alternative (Appendix). In the control condition, no further information was provided. The participants at this point again gave their preferences between the two products and were asked to make a choice. Finally, the participants provided socio-demographic information (gender, age, educational level, online shopping experience).

3.3 Measurement of the dependent and control variables

The variables of interest were measured using scales validated in the literature. We measured the participants' preferences through four item, 7-point semantic differential scales (bad-good, unappealing-appealing, undesirable-desirable, I do not like it at all –I like it very much; Bruner and Hensel, 1996; Cronbach's αs > 0.93; explained variances > 83.18%). As for the

participants' choices, in addition to the two alternatives a third option was presented so that they were not forced to make a choice: "I would rather not buy any of the products" (Dhar, 1997). The participants who received the m-WOM answered several questions about it. They rated on 7-point Likert scales the perceived trustworthiness (4 items from Ohanian, 1990; Cronbach's $\alpha = 0.92$; 80.89% explained variance) and expertise (4 items from Ohanian, 1990; Cronbach's $\alpha = 0.84$; 70.74% explained variance) of the source. In addition, they rated the perceived negativity of the message (from 1 = positive, to 7 = negative), and the extent to which it was (1) helpful and (2) assisted them in their decision-making (from 1 = not at all, to 7 = very much) (adapted from Ismagilova *et al.*, 2020a).

Previous research has shown that factors related to the receiver's characteristics may affect the influence of interpersonal communication. Specifically, expertise or knowledge of the product category (e.g. Gilly *et al.*, 1998; Bansal and Voyer, 2000), brand familiarity and preferences (e.g. Vázquez-Casielles *et al.*, 2013), and the degree of confidence with which a judgement is held (Fitzsimons and Lehmann, 2004) can determine the direction and strength of WOM effects. Overall, a negative relationship was found, that is, the more expert and knowledgeable the receivers were, or the more stable their preferences were, the less they actively they searched for WOM, and the less was its subsequent influence. Therefore, a series of control questions was included in the questionnaire to take account of these factors. First, the participants answered questions about their general use of smartphones in physical stores. Specifically, they indicated whether they had ever used their smartphones while in-store (yes/no), and how often they had used their smartphones for specific purposes (from 1 = never, to 5 = always): to gather additional information about the product being considered; to compare with other products; to search for the product in other stores; to search for offers and lower prices; to search for other consumers' reviews and opinions; to talk to contacts to establish their opinions; to buy the product elsewhere, amongst others. Second, they indicated their degree of familiarity with, and knowledge of, the product category (7-point Likert scales; 6 items adapted from Park and Moon, 2003; Flavián *et al.*, 2010; Cronbach's $\alpha = 0.92$; 73.31% explained variance). Third, they ranked six brands according to their preferences within the category (from "1 = the most preferred brand", to "6 = the least preferred brand"), including the three that were used as the experimental stimuli [1]. Fourth, taking into account that confidence is a key variable in webrooming (Flavián *et al.*, 2019), the participants' were asked about their level of confidence in their pre-selected choices (7-point Likert scales; 3 items from Flavián *et al.*, 2019; Cronbach's $\alpha = 0.96$; 92.71% explained variance). Finally, the participants who received the m-WOM rated the perceived negativity of the message (from 1 = positive, to 7 = negative).

4. Analysis and results

4.1 Analysis of the control variables

Before testing the hypotheses, descriptive statistics were calculated to examine the participants' general use of smartphones at physical stores. Of the 204 participants, 117 (57.8%) declared previous in-store experience with their mobile phones, regardless of the product category ($\chi^2_{(1)} = 0.218$, $p = 0.641$). The descriptive data regarding the different usages of mobile phones are at Table 1. Talking to known people about their impressions of products, searching for offers and lower prices, and searching for the product in other stores, were the most reported behaviours; buying the product from another company was the least reported use. Overall, using mobile phones while in the store was significantly more frequent with electronics than with accessories (Table 1). Interestingly, searching for online product reviews was more frequently cited in the electronics category than in the accessories category, whereas talking to known people to establish their opinions was more cited in the accessories than in the electronics category (Table 1); however, this latter difference was not significant ($p = 0.144$).

	Total (n = 117) M (SD)	Electronics (n = 58) M (SD)	Accessories (n = 59) M (SD)	Independent samples T-test $t_{(115)}$
Gather additional product information	3.66 (1.04)	3.90 (0.99)	3.42 (1.05)	2.505**
Compare with other alternatives	3.79 (1.15)	3.81 (1.16)	3.78 (1.15)	0.144
Search for the product in other stores	3.98 (1.08)	3.79 (1.15)	4.17 (0.97)	1.916*
Search for offers and lower prices	4.00 (1.03)	4.07 (1.06)	3.93 (1.00)	0.720
Search for consumers' reviews and opinions	3.38 (1.22)	3.74 (1.15)	3.03 (1.19)	3.274***
Talk to known people to know their opinion	4.09 (1.01)	3.95 (1.03)	4.22 (0.97)	1.471
Buy the product somewhere else	2.31 (1.26)	2.67 (1.30)	1.95 (1.11)	3.240***
Other purposes	2.45 (1.41)	2.76 (1.41)	2.15 (1.36)	2.368**

Note(s): *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

Table 1. Descriptive data and independent samples T-test results of the uses of mobile phones in physical stores

The participants' subjective knowledge and familiarity with the product category was significantly higher for accessories (M = 5.14, SD = 1.42) than for electronics (M = 4.54, SD = 1.39; $t_{(202)}$ = 3.065, $p < 0.01$). Regarding the pre-established brand preferences, we calculated the difference in the ranked scores of the two brands pre-selected during the online search (T1) [2]. The results of an independent samples T-test showed that brand preferences did not significantly differ between accessories (M = 0.99, SD = 2.63) and electronics (M = 0.76, SD = 2.18; p = 0.49). Finally, the degree of confidence in the pre-selected product after the online interaction was also higher for accessories (M = 5.73, SD = 1.22) than for electronics (M = 5.39, SD = 1.26; $t_{(202)}$ = 1.967, $p < 0.1$). Taking into account these differences, the following were included as covariates in the main analyses: the participants' previous experience with mobile phones in physical stores, their degree of product knowledge and familiarity, their pre-established brand preferences and their confidence after the online interaction.

Furthermore, we examined the participants' perceptions of the m-WOM. The manipulation of the message content was deemed successful, since perceived negativity was significantly above the scale midpoint (M = 4.98, SD = 1.35; $t_{(132)}$ = 8.390, $p < 0.001$); thus, the m-WOM was perceived as slightly negative, which is consistent with previous research that found that moderately valenced reviews are positively correlated with perceived helpfulness (Mudambi and Schuff, 2010). However, the customer review (M = 5.40, SD = 1.03) was perceived as more negative than the friend's opinion (M = 4.59, SD = 1.51), and this difference was significant, according to the results of a univariate ANOVA ($F_{(1, 132)}$ = 13.255, $p < 0.001$). The effect of product type (p = 0.451) and its interaction with social tie (p = 0.187) were not significant. Therefore, the perceived negativity of the m-WOM was included as a covariate in the subsequent analysis to control for its effect on the dependent variables.

4.2 Effects of m-WOM on perceived helpfulness

The participants who received the m-WOM indicated the extent to which it was helpful and assisted them in their decision. Based on the Spearman–Brown correlation coefficient (ρ = 0.761, $p < 0.001$; Eisinga *et al.*, 2013), the average value was calculated. Supporting

H1, the mean value was significantly above the scale midpoint ($M = 4.83$, SD = 1.07; $t_{(133)} = 6.490$, $p < 0.001$).

The effects of social relationship and product type on perceived helpfulness, trustworthiness and expertise of the m-WOM source, were examined through a series of ANCOVAs, with the control variables (previous experience with mobile phones in physical stores, product category knowledge, brand preferences and confidence in the pre-selected option in T1) and perceived negativity as covariates. The descriptive data are shown at Table 2, as are the results for the direct effects and the covariates. The analyses revealed that the friend's opinion was perceived as significantly more trustworthy than the customer review; the opposite was the case for perceived expertise (Table 2). These results support H3 and H4. Although product type had no direct effects (all ps > 0.218), the interaction between social tie and product type on perceived helpfulness was significant ($F_{(1, 132)} = 4.936$, $p < 0.05$). As shown in Figure 1, for electronics, the customer review was perceived as more helpful than the friend's opinion; for accessories, the opposite was the case. Therefore, H6a and H7a were supported. Regarding the covariates, and taking into account the correlations between the variables, we found that perceived negativity had a significant positive effect on helpfulness ($r = 0.19$, $p < 0.05$) and trustworthiness ($r = 0.21$, $p < 0.05$), and that confidence in the pre-selected option in T1 had a marginal significant positive effect on the perceived trustworthiness of the m-WOM source ($r = 0.16$, $p < 0.1$).

Table 2. Descriptive data and ANCOVA results of direct effects on perceived helpfulness, trustworthiness and expertise of the m-WOM

	Helpfulness		Trustworthiness		Expertise	
	M (SD)	$F_{(1, 132)}$	*M* (SD)	$F_{(1, 132)}$	*M* (SD)	$F_{(1, 132)}$
Customer review	4.81 (1.56)	0.540	4.83 (1.07)	11.897***	4.40 (1.35)	5.159*
Friend opinion	4.85 (1.42)		5.32 (1.18)		3.85 (1.31)	
Electronics	4.81 (1.56)	0.988	4.97 (1.11)	1.535	4.05 (1.33)	0.199
Accessories	4.86 (1.41)		5.20 (1.19)		4.19 (1.17)	
Experience with mobile phones at stores		0.873		0.001		0.587
Product knowledge		1.789		0.375		0.007
Brand preferences		0.240		0.406		0.751
Confidence most preferred option T1		0.013		3.051*		2.850*
Perceived negativity		4.078**		11.458***		0.125

Note(s): *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

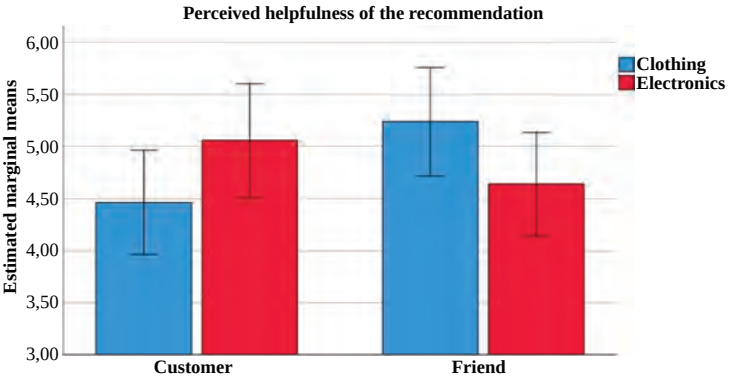

Figure 1. Interaction effect between social tie and product type on perceived helpfulness

Finally, to test H5a moderated mediation model was conducted (macro PROCESS v3.3 for SPSS; Hayes, 2018). A suppression analysis was carried out; this is conceptually related to mediation and can be tested using the same methods, that is, by analysing the total direct and indirect effects between a set of variables (Willemensen *et al.*, 2011). Type of information source was the independent variable (customer review = 0; friend opinion = 1), trustworthiness and expertise acted as mediators, and product type was included as the moderator (accessories = 0; electronics = 1). Taking into account the results of the ANCOVAs, model 15 was implemented, which proposed a moderation effect in the relationship between the independent and the dependent variable and in the relationships between the mediators and the dependent variable. The same control variables were included as covariates. Table 3 shows the results of the conditional process model.

The significant interaction effect between social ties and product type on perceived helpfulness found in the ANCOVA (Figure 1) disappeared when the mediators were included in the regression. Both trustworthiness and expertise significantly influenced perceived helpfulness; however, the interaction between perceived expertise and product type was significant (Table 3). Specifically, expertise had a significant positive effect on the perceived helpfulness of the interpersonal communication for the smartphones (*coeff.* = 0.452, $t = 3.373$, $p < 0.001$); however, the effect was non-significant for the sports shoes ($p = 0.487$). As can be seen at the bottom of Table 3, trustworthiness mediated the impact of social ties on perceived helpfulness, irrespective of product type (H5a supported). The expertise of the reviewer was found to have a mediating effect only for the search good category. The moderated mediation index in this case was significant (*index* = −0.294, bootstrap 95% confidence interval: [−0.723, −0.023]). Therefore, support to H5b is contingent on product type.

4.3 Episodic influence of m-WOM

First, we compared the participants' preferences and choice based on whether or not they received the m-WOM message. To test H2 we created a dummy variable (m-WOM: yes vs no). The previously considered control variables were included as covariates. The results of an ANCOVA on the preference for the pre-selected alternative revealed that the m-WOM had a significant effect ($F_{(1, 203)} = 16.243$, $p < 0.001$). The participants who received the challenging m-WOM exhibited a lower preference ($M = 5.30$, SD = 1.09) than those in the control group ($M = 5.94$, SD = 1.03). In addition, a repeated-measures ANCOVA showed that the preference for the pre-selected alternative decreased from T1 to T2 for the participants who received the m-WOM ($\Delta = -0.53$), and that it slightly increased for those who did not receive the m-WOM ($\Delta = 0.10$) ($F_{(1, 198)} = 4.224$, $p < 0.05$). Thus, H2a was supported.

Regarding the participants' choices, we created a dummy variable which adopted the value 1 if they changed their preferences from the online (T1) to the offline (T2) experience. This variable (choice change: 1 = yes, 0 = no) was cross-tabulated with the m-WOM treatment (yes vs no). A total of 39.2% of the participants changed their initial choice, and the effect of the m-WOM was significant ($\chi^2_{(1)} = 12.712$, $p < 0.001$). Of those who did not receive a message, 22.5% changed their choice, whereas 48.1% of those who received the m-WOM changed their choice. Thus, H2b was supported.

The influence of social relationship and product type was analysed. Regarding the preference for the pre-selected alternative, a post hoc Tukey test revealed that neither the difference between the customer review and the friend opinion ($p = 0.995$) nor the interaction between social tie and product type, were significant ($p = 0.712$). Regarding variations in preference from T1 to T2, it was observed that, for the smartphone, the customer review had a stronger negative impact ($\Delta = -0.92$) than the friend's opinion ($\Delta = -0.60$); for the shoes sports, the friend's opinion had a stronger influence ($\Delta = -0.41$) than the customer review ($\Delta = 0.27$). However, the interaction term was not significant ($p = 0.125$). Finally, we found that social ties and product type had a significant interaction effect on participants' choices

Predictor: Trustworthiness (mediator)	Coeff.	SE	t	p	LLCI	ULCI
Constant	2.400	0.643	3.373	0.001	1.128	3.672
Source (friend vs customer)	0.669	0.198	3.371	0.001	0.276	1.062
Experience with mobile phones at stores	−0.030	0.205	−0.148	0.883	−0.435	0.375
Product knowledge	0.065	0.073	0.884	0.378	−0.080	0.210
Brand preferences	0.023	0.040	0.569	0.570	−0.056	0.102
Confidence most preferred option T1	0.137	0.075	1.834	0.068	−0.010	0.285
Perceived negativity	0.253	0.074	3.432	0.001	0.107	0.399
Predictor: Expertise (mediator)	**Coeff.**	**SE**	t	p	**LLCI**	**ULCI**
Constant	3.568	0.734	4.864	0.001	2.116	5.202
Source (friend vs customer)	−0.536	0.227	−2.365	0.020	−0.984	−0.087
Experience with mobile phones at stores	−0.168	0.234	−0.720	0.875	−0.631	0.294
Product knowledge	0.013	0.084	0.157	0.873	−0.153	0.179
Brand preferences	−0.036	0.046	−0.784	0.435	−0.126	0.055
Confidence most preferred option T1	0.145	0.085	1.696	0.092	−0.024	0.313
Perceived negativity	0.019	0.084	0.228	0.820	−0.148	0.186
Predictor: Perceived helpfulness	**Coeff.**	**SE**	T	p	**LLCI**	**ULCI**
Constant	2.434	1.693	1.489	0.139	−0.802	5.671
Source (friend vs customer)	0.696	0.714	0.975	0.331	−0.718	2.111
Trustworthiness	0.899	0.320	2.808	0.006	0.265	1.532
Expertise	−0.645	0.305	−2.118	0.036	−1.248	−0.042
Product type	−1.083	0.988	−1.096	0.275	−3.040	0.874
Source × Product type	−0.604	0.444	−1.360	0.176	−1.484	0.275
Trustworthiness × Product type	−0.141	0.204	−0.694	0.489	−0.544	0.262
Expertise x Product type	0.548	0.186	2.951	0.004	0.181	0.916
Experience with mobile phones at stores	−0.211	0.215	−0.980	0.329	−0.636	0.215
Product knowledge	0.073	0.078	0.926	0.356	−0.083	0.227
Brand preferences	−0.046	0.043	−1.060	0.291	−0.131	0.040
Confidence most preferred option T1	−0.109	0.043	−1.383	0.169	−0.264	0.047
Perceived negativity	0.072	0.083	0.861	0.390	−0.093	0.236
Model summary	$R^2 = 0.486$; $F_{(12, 120)} = 9.469$, $p < 0.001$					
Bootstrap results for indirect effects	**Effect**	**BootSE**		**BootLLCI**		**BootULCI**
Source → Trustworthiness → Perceived helpfulness						
Accessories	0.507	0.192		0.174		0.915
Electronics	0.412	0.148		0.151		0.724
Source → Expertise → Perceived helpfulness						
Accessories	0.052	0.092		−0.082		0.290
Electronics	−0.241	0.126		−0.514		−0.028

Note(s): $n = 133$. Confidence interval calculated at 95% of significance. Bootstrap sample size = 5,000. LLCI: Lower limit confidence interval; ULCI: Upper limit confidence interval

Table 3.
Moderated mediation model on the m-WOM's perceived helpfulness

($\chi^2_{(2)} = 12.777$, $p < 0.01$). As Figure 2 shows, for the smartphone, the customer review made participants change their choice to a greater extent (64.5%) than did the friend opinion (44.4%); for the sports shoes, the proportion of participants who changed their choices based on the friend's opinion (50%) was greater than the proportion who changed their choices based on the customer review (35.3%). Therefore, H6b and H7b were rejected, but H6c and H7c were supported.

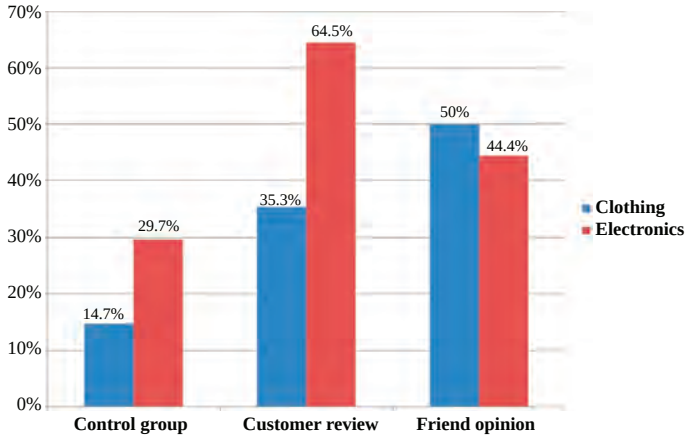

Figure 2.
Interaction effect between social tie and product type on participants' choice change

5. Discussion

The results of the analyses support most of the hypotheses. First, the descriptive statistics revealed that more than half of the participants had previously used their mobile phones while in physical stores, which confirms the omnichannel webrooming tendency suggested by previous studies (Mosquera *et al.*, 2018; Jocevski *et al.*, 2019). The frequency of mobile phone use is moderate, but accessing m-WOM is one of the most frequent reported activities. Their greater use for electronics products than for fashion accessories can be explained by the facts that electronics are relatively complex products (Van Baal and Dach, 2005) and they entail higher consumer costs (time, money) than do clothing (Flavián *et al.*, 2019). Thus, the higher perceived risk associated with purchases of electronic goods leads consumers to use more information sources (Bansal and Voyer, 2000), including m-WOM.

Second, the results revealed that webroomers value m-WOM received in physical stores even if it runs counter to the preferences formed in the webrooming experience. This result is aligned with the literature about the influence of negative (e)WOM on consumer behaviour (Sen and Lerman, 2007; Lee *et al.*, 2008; Lee and Youn, 2009; Sparks and Browning, 2011), and extends it to the omnichannel retailing environment, where research about the effects of m-WOM and the interplay between the online and the physical channels is still scarce. In addition, Ransbotham *et al.* (2019) found that m-WOM has less consumption value (i.e. the perceived value of reading a particular review) than non-mobile WOM. Our findings showed that consumers do value m-WOM as it helps them and assists in their decision-making.

Receiving challenging m-WOM also had episodic influence (Gilly *et al.*, 1998). The preference for the product pre-selected during the online search decreased after receiving the m-WOM, and the percentage of participants who changed their choice (by switching to the second alternative, or by deferring the decision) was double that of those who did not receive a challenging message. This result is in line with the findings of Gupta and Harris (2010), who found that even a single item of positive e-WOM can significantly alter choice behaviour, and extends them to negative m-WOM. In contrast to previous studies, the results showed that m-WOM affected perceived helpfulness and its episodic influence regardless of the receivers' characteristics, measured by their subjective knowledge of, and familiarity with, the product category (Gilly *et al.*, 1998), brand preferences (Vázquez-Casielles *et al.*, 2013) and the confidence with which their preferences were held (Fitzsimons and Lehmann, 2004). Taking into account that the m-WOM was received very close to the purchase decision, its content was more salient and, therefore, diagnostic to the final choice (Herr *et al.*, 1991).

Third, we found that the social relationship between the sender and the receiver of the m-WOM message affected its effects. A friend's opinion (strong tie, homophily) is more trustworthy than a customer review (weak tie, heterophily), whereas the opposite is the case with perceived expertise. Although source type had no direct effect on the perceived helpfulness of the m-WOM, this was due to a suppression situation (Willemsen *et al.*, 2011). Trustworthiness and expertise acted as two competing mechanisms which cancelled each other out in the measurement of the effect of source type. These results are consistent with previous studies (Brown and Reingen, 1987; Duhan *et al.*, 1997; Steffes and Burgee, 2009; Pan and Chiou, 2011) and support the dual role of interpersonal communications, acting both as information and as a recommendation (Park *et al.*, 2007; Rosen and Olshavsky, 1987). Our findings add to the literature by directly comparing both influences on omnichannel webrooming behaviour.

However, the influence of strong and weak social relationships was shown to be contingent on product category. This research adds to the literature about the interplay between social relationships and product type (Willemsen *et al.*, 2011; Wang and Chang, 2013; Tsao and Hsieh, 2015) by considering the search/experiential nature of products (Nelson, 1970) and the cost (time, energy, money) incurred in buying them (Murphy and Enis, 1986). Specifically, for fashion accessories (low cost, experience good), the friend's opinion was perceived as more helpful than the customer review, and this effect was mediated by perceived trustworthiness (expertise had no effect); for electronics (high cost, search good), the customer review was perceived as more helpful than the friend's opinion. Both trustworthiness and expertise mediated the effect. These differences may also explain why social relationships had no direct effect on perceived helpfulness (Table 1), and the impact of the interaction between social relationships and product type on perceived helpfulness. In addition, the friend's opinion had a stronger influence on participants' choice of sports shoes, whereas the customer review had a greater impact on choice of smartphone. In summary, our findings stress the need to consider product characteristics when investigating omnichannel behaviour and the influence of interpersonal communications.

6. Conclusions

Mobile technologies have revolutionised the retailing landscape. Consumers have become omnichannel shoppers, using online and physical channels interchangeably, seamlessly and simultaneously. Taking into account that webrooming represents the most widespread omnichannel behaviour (Forrester Research, 2018), and that the process is carried out to increase confidence in the purchase decision (Flavián *et al.*, 2019), this research explored the impact of mobile e-WOM received in the physical store that challenged the consumer's preferences and purchasing decision.

The results revealed that challenging m-WOM has a significant influence on the webrooming experience. This extent of this influence depends on the social relationship between the sender and the receiver of the message, and on product category. Opinions received from strong, homophilous ties are viewed as more trustworthy, but less expert, than reviews from weak, heterophilous ties, which affects the perceived helpfulness of the recommendation. For fashion accessories (low cost, experience good), consumers rely on their trustworthy friends' opinions more than on expert customer reviews. For electronics (high cost, search good), while the consumer did trust his/her friend's advice, the anonymous expert review was perceived as more helpful. This perceived influence was also reflected in the consumers' preferences and choices. The webroomers' pre-store preferences (i.e. formed online) decreased after receiving m-WOM that contradicted their predisposition. Finally, the trustworthy friend's opinion significantly changed the consumer's choice with fashion accessories, whereas the expert customer review significantly affected choice change for electronic goods.

6.1 Managerial implications

In the omnichannel era, it is critical for retailers to manage all the channels (online, physical, mobile) that can be used interchangeably, and simultaneously, by the consumer during the purchase journey (Jocevski *et al.*, 2019). This may be crucial for brick and mortar stores, which are increasingly incorporating technologies, and facilitating their use, into their outlets (Mosquera *et al.*, 2018). Thus, m-WOM presents both challenges and opportunities for retailers. On the one hand, consumers obtain an alternative source of information, which may reduce the retailers' ability to influence them through their communications' messages. On the other hand, it might be used as a new marketing tool, as it provides marketers with opportunities to reach and persuade consumers (Duan *et al.*, 2008). In fact, in-store mobile use can improve the customer experience (Flavián *et al.*, 2016; Orús *et al.*, 2019); consumers have a positive view of retailers who enable them to access product reviews (Kowatsch *et al.*, 2011), and this can even result in more time being spent in-store, and more sales (Grewal *et al.*, 2018).

Our findings may help retailers to incorporate the Social-Local-Mobile (SoLoMo) concept into their omnichannel strategies (Hüseyinoğlu *et al.*, 2017), particularly as a way of enhancing webrooming experiences. For example, retailers might allow customers to access online reviews with their mobile phones, or even display WOM information together with product information. This strategy is currently being developed by several brands in the fashion and clothing industries. Decathlon in its stores already provides customer ratings with their technical specifications of products. Sephora has designed an app that displays product ratings and reviews, when their clients scan products, to assist them in their decision-making. (Think with Google, 2015). Thanks to the incorporation of new technologies into physical stores (Mosquera *et al.*, 2018), retailers might be able to allow customers to access m-WOM in virtual fitting rooms. Our findings encourage retailers in the electronics sector to embrace mobile technologies in their stores, given that m-WOM can help consumers in the decision-making process. Consumers' interactions with technology-based services, combined with human-based services, jointly influence the overall omnichannel experience (Pantano and Viassone, 2015). Nevertheless, retailers must consider what type of m-WOM is most suitable for their commercial offer. For low-cost products, dominated by experience attributes (accessories, services), information exchanges established through strong social relationships may be more influential than through weak social relationships; for high-cost products, dominated by search attributes (electronics, home appliances), expert opinions appear to be more influential.

In addition, referral websites and apps may benefit from these findings by conveying effective m-WOM in their platforms. For low-cost, experience products, characteristics that increase consumers' trust in the recommendations should be primed, such as disclosing information about the reviewer's background to increase the reader's perceptions of their similarity (Racherla *et al.*, 2012); for high-cost, search products, argument quality and statements focussed on the reviewer's experience with the product should be emphasised.

6.2 Limitations and future research lines

This research has several limitations that should be addressed in future research. First, the empirical study was based on an online experiment which simulated an omnichannel webrooming experience. Although experimental designs ensure a certain degree of control and internal validity, future research should test these relationships in field studies by examining real shopping behaviour. The sample size is rather limited, which hinders the generalisation of the results.

Second, we focussed on the two extremes of the social relationship continuum to analyse the effects of m-WOM. Importantly, as no manipulation check was carried out on the social relationship, we cannot conclude that the effects of the opinions of the friend and the anonymous customer are explained by tie strength or degree of homophily between the sender and the receiver

of the message. Both dimensions are intrinsically related, such that the stronger is the social tie between two individuals, the more similar they tend to be (Granovetter, 1977). Tie strength, therefore, increases with homophily (Brown *et al.*, 2007). However, they should be considered separately. Steffes and Burgee (2009) argued that strong, homophilous ties are not necessarily one and the same, and that weak, heterophilous ties are not one and the same. In the present study, it might be argued that consumers have strong, homophilous ties with their friends; it might also be suggested that ties between consumers and anonymous customers are weak, but it cannot be assumed that heterophily existed, given that the experimental participants were not provided with any information about the characteristics of the senders. Similarly, the product categories were differentiated in terms of their search-experience nature and their purchase cost; however, we cannot conclude whether the differences are due to one of, or even both, dimensions. Future research should analyse the separate influence of the tie strength and homophily of m-WOM messages, as well as the separate influence of the different product dimensions.

In addition, the customer review was perceived as more negative than the friend's opinion. Unlike traditional WOM, where the outcome of an information exchange depends not only on the information provided by the sender but also the interpretation of the receiver, the valence of eWOM is clearly established through numerical ratings and other cues (King *et al.*, 2014). Nevertheless, we are uncertain whether this result may be due to the stimulus design or because consumers may soften the negativity of a friend's opinion more than they would the opinion of an anonymous customer. Thus, it would be interesting to consider other types of information source, such as influencers (Casaló *et al.*, 2018) and vloggers (Ladhari *et al.*, 2020), who may represent for the consumer a closer balance between the information/recommendation roles of interpersonal influence.

Third, although previous studies have found that platform type does not affect the influence of negative e-WOM (Lee and Youn, 2009), the characteristics of the platform and the perceived social relationship between the receiver and the platform (Brown *et al.*, 2007) have not, as yet, been considered. In our study, the friend's opinion was provided in a chat app, whereas the online product review appeared on the retailer's review site. Although receiving opinions from anonymous customers through chat applications, or reading online reviews from strong ties such as friends or relatives, may be unrealistic, future analyses should control for this confounding effect. Posts on social media can inspire shopping and influence purchase behaviour (Aragoncillo and Orús, 2018; Bachleda *et al.*, 2016). In addition, future research might investigate the single and combined influence of m-WOM and recommendations made by sales assistants (Rapp *et al.*, 2015; Rippé *et al.*, 2017).

Finally, the questionnaire included a number of control questions regarding the participants' use of mobile technologies in physical stores, their degree of knowledge and familiarity with the product category, and their pre-established brand preferences. Although we found only a minimal significant effect, previous research has shown that receivers' characteristics, such as risk aversion and expertise (Bansal and Voyer, 2000), the extent to which they are opinion seekers (Chu and Kim, 2011), and their degree of susceptibility to interpersonal influence (Bearden *et al.*, 1989), strengthen the impact of the effects of WOM. In a similar vein, there are many different reasons for senders to engage in WOM exchanges, such as altruism (either positive or negative), self-enhancement, to help the company, to release negative emotions, and retaliation and vengeance (De Matos and Rossi, 2008; King *et al.*, 2014). Future studies should take all these personal and interpersonal factors into consideration.

Notes

1. We used real brands in the experiment. However, due to copyright permissions, the brand names cannot be disclosed and bogus names have been used in this paper. The information about the real brands employed in the study can be requested from the authors.

2. As an illustrative example let us assume that, after the online interaction with the products (T1), a participant in the "sports shoes" group chose ADDS as the most preferred option, and CNVRS as the second. Then, we looked at the pre-established rankings of the brands made before any product interaction (see Section 3.3). If the participant ranked ADDS as the most preferred option (1) and CNVRS as the fourth (4) in the set, the difference was computed as 3. The bigger the difference, the stronger the pre-established brand preference. The differences ranged from −5 to +5.

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Appendix

Figure A1.
Online product descriptions–fashion accessories

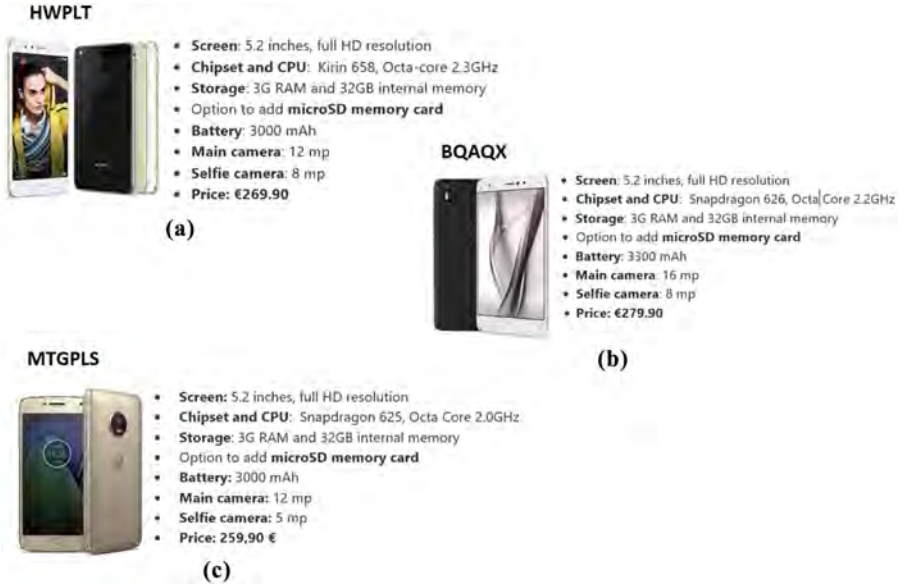

Figure A2.
Online product descriptions–electronics

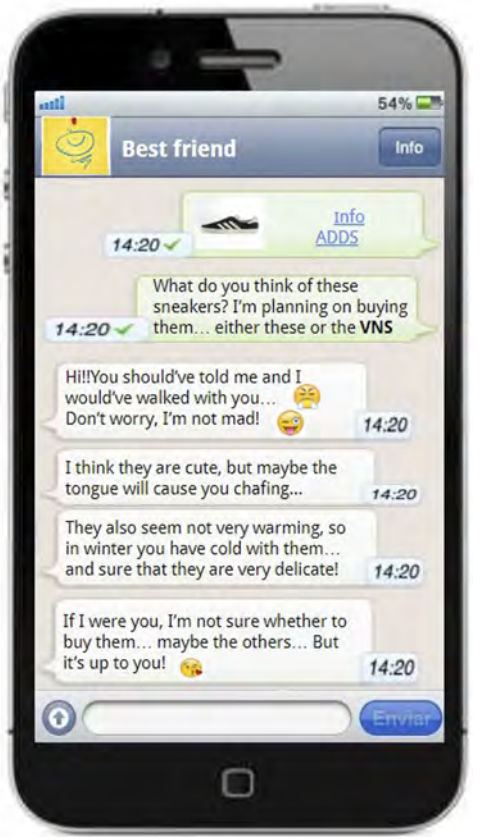

Figure A3.
Friend's negative m-WOM recommendation–fashion accessories

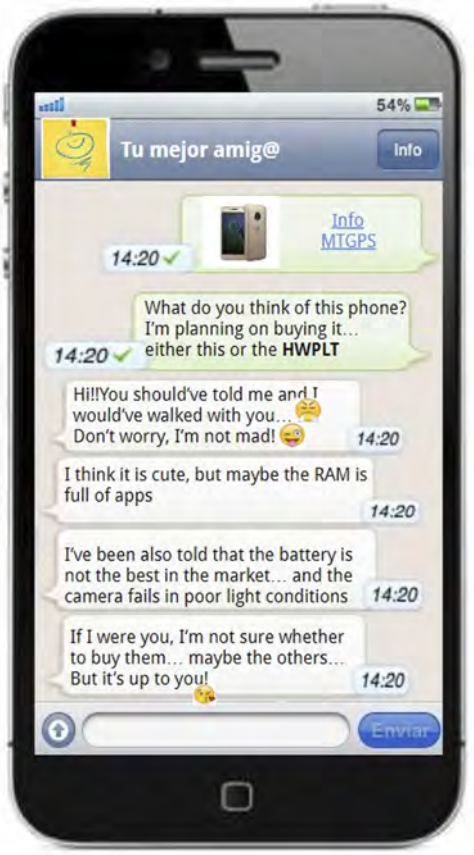

Figure A4.
Friend's negative m-WOM recommendation–electronics

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